

# Committee Report

**REGULAR CALENDAR**

**March 2, 2021**

**HOUSE OF REPRESENTATIVES**

**REPORT OF COMMITTEE**

**The Majority of the Committee on Commerce and Consumer Affairs to which was referred HB 618,**

**AN ACT relative to the sale and distribution of polystyrene food service products. Having considered**

**the same, report the same with the following resolution:**

**RESOLVED, that it is INEXPEDIENT TO LEGISLATE.**

**Rep. Max Abramson**

**FOR THE MAJORITY OF THE COMMITTEE**

**MAJORITY  
COMMITTEE REPORT**

Committee:	<b>Commerce and Consumer Affairs</b>
Bill Number:	<b>HB 618</b>
Title:	<b>relative to the sale and distribution of polystyrene food service products.</b>
Date:	<b>March 2, 2021</b>
Consent Calendar:	<b>REGULAR</b>
Recommendation:	<b>INEXPEDIENT TO LEGISLATE</b>

**STATEMENT OF INTENT**

This bill prohibits the sale or distribution of polystyrene foam in food service businesses beginning on January 1, 2022. While the majority of the committee agreed that growing land fills are a problem, we saw that far more good could be accomplished by letting consumers choose to bring reusable cups and containers where possible or even shopping at stores that use recycled containers. New Hampshire is forced to operate a more libertarian state government than we might otherwise choose simply because most of our state's businesses and population lie within a short drive of Vermont, Maine, and Massachusetts. Because of this, restrictions on business merely tend to drive shoppers, business activity, jobs, and revenue to neighboring states. Worse, members of the committee were concerned that more of our nation's forests would need to be felled to produce the paper for paper cups, sleeves, and other food containers to replace polystyrene. Members of the committee asked for more evidence that food in polystyrene containers leaked chemicals that cause harm, but heard only a few statements and reference to a single study. For this reason, the majority recognizes the need to leave action up to consumers.

Vote 10-9.

Rep. Max Abramson  
FOR THE MAJORITY

Original: House Clerk  
Cc: Committee Bill File

## REGULAR CALENDAR

Commerce and Consumer Affairs

**HB 618**, relative to the sale and distribution of polystyrene food service products. **MAJORITY: INEXPEDIENT TO LEGISLATE. MINORITY: OUGHT TO PASS.**

Rep. Max Abramson for the **Majority** of Commerce and Consumer Affairs. This bill prohibits the sale or distribution of polystyrene foam in food service businesses beginning on January 1, 2022.

While the majority of the committee agreed that growing land fills are a problem, we saw that far more good could be accomplished by letting consumers choose to bring reusable cups and containers where possible or even shopping at stores that use recycled containers. New Hampshire is forced to operate a more libertarian state government than we might otherwise choose simply because most of our state's businesses and population lie within a short drive of Vermont, Maine, and Massachusetts. Because of this, restrictions on business merely tend to drive shoppers, business activity, jobs, and revenue to neighboring states. Worse, members of the committee were concerned that more of our nation's forests would need to be felled to produce the paper for paper cups, sleeves, and other food containers to replace polystyrene. Members of the committee asked for more evidence that food in polystyrene containers leaked chemicals that cause harm, but heard only a few statements and reference to a single study. For this reason, the majority recognizes the need to leave action up to consumers. **Vote 10-9.**

Original: House Clerk

Cc: Committee Bill File

**REGULAR CALENDAR**

**March 2, 2021**

**HOUSE OF REPRESENTATIVES**

**REPORT OF COMMITTEE**

**The Minority of the Committee on Commerce and Consumer Affairs to which was referred HB 618,**

**AN ACT relative to the sale and distribution of polystyrene food service products. Having considered the same, and being unable to agree with the Majority, report with the recommendation that the bill OUGHT TO PASS.**

**Rep. Anita Burroughs**

**FOR THE MINORITY OF THE COMMITTEE**

## **MINORITY COMMITTEE REPORT**

Committee:	<b>Commerce and Consumer Affairs</b>
Bill Number:	<b>HB 618</b>
Title:	<b>relative to the sale and distribution of polystyrene food service products.</b>
Date:	<b>March 2, 2021</b>
Consent Calendar:	<b>REGULAR</b>
Recommendation:	<b>OUGHT TO PASS</b>

### **STATEMENT OF INTENT**

Nothing that consumers use for a few minutes of convenience should be allowed to pollute our planet for hundreds of years, yet polystyrene continues to be used extensively in New Hampshire when there are eco-friendly and cost-effective alternatives. Polystyrene's light weight makes it easy for wind and water to carry it into our oceans and rivers. It crumbles easily and is often mistaken by birds, fish and animals for food. It is difficult to recycle and has not been ruled out as a carcinogen. The material begins to breakdown with the addition of hot foods; plastic fibers been having been found in everything from drinking water to salt. Maine, Maryland, numerous cities in the US and nearly 60 nations have enacted or are in the process of passing similar prohibitions on polystyrene. Given the overwhelming evidence that this material is posing serious dangers to our environment in our state, legislation is needed for New Hampshire businesses to migrate to reusable materials that are recyclable and which will not do harm to our rivers, oceans and to wildlife.

Rep. Anita Burroughs  
FOR THE MINORITY

Original: House Clerk  
Cc: Committee Bill File

## REGULAR CALENDAR

Commerce and Consumer Affairs

**HB 618**, relative to the sale and distribution of polystyrene food service products. **OUGHT TO PASS.**

Rep. Anita Burroughs for the **Minority** of Commerce and Consumer Affairs. Nothing that consumers use for a few minutes of convenience should be allowed to pollute our planet for hundreds of years, yet polystyrene continues to be used extensively in New Hampshire when there are eco-friendly and cost-effective alternatives. Polystyrene's light weight makes it easy for wind and water to carry it into our oceans and rivers. It crumbles easily and is often mistaken by birds, fish and animals for food. It is difficult to recycle and has not been ruled out as a carcinogen. The material begins to breakdown with the addition of hot foods; plastic fibers been having been found in everything from drinking water to salt. Maine, Maryland, numerous cities in the US and nearly 60 nations have enacted or are in the process of passing similar prohibitions on polystyrene. Given the overwhelming evidence that this material is posing serious dangers to our environment in our state, legislation is needed for New Hampshire businesses to migrate to reusable materials that are recyclable and which will not do harm to our rivers, oceans and to wildlife.

Original: House Clerk

Cc: Committee Bill File

**Archived:** Thursday, April 22, 2021 1:39:36 PM  
**From:** JOHN HUNT  
**Sent:** Tuesday, March 9, 2021 10:04:03 AM  
**To:** Carrie Morris  
**Cc:** Pam Smarling  
**Subject:** Fwd: blurbs  
**Importance:** Normal

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OK,  
JBH

Begin forwarded message:

**From:** Max Abramson <[MaxAbramson@gmx.com](mailto:MaxAbramson@gmx.com)>  
**Subject:** blurbs  
**Date:** February 23, 2021 at 7:17:55 PM EST  
**To:** John Hunt <[jbhunt@prodigy.net](mailto:jbhunt@prodigy.net)>

HB265 Cushing Bottled Water ITL Abramson

While members of the committee expressed sympathy toward the need to guarantee that bottled water met state—rather than merely EPA and FDA—standards, the majority also noted that the State would be giving a false sense of security to shoppers who might get the impression that all water sold in the Granite State exceeded federal standards. In fact, seltzer water, colored or flavored water, or possibly even ice could be sold under this bill that didn't meet those standards. More importantly, the DHHS is currently coming up with its own regulations on bottled water, and the majority recognizes the need to wait on the results of those regulations rather than risking the creation of statutes that could conflict so the committee has retain HB335 which has the exact same language.

HB449 Luneau Right to Repair Home Appliances ITL Abramson

The majority initially appreciated the need for consumers to bring older appliances to independent repair shops. Both environmental and economic benefits were touted by proponents, and members of the committee expressed elation at the possibility of saving money on the overall life of manufactured goods. However, no other state has passed this bill, and the majority saw why upon review. Manufacturers would be compelled to supply "documentation, parts, and tools, inclusive of any updates to information or embedded software." Some manufacturers, for safety or other reasons, need to sell consumers a closed box that can only be serviced at shops that are certified by the manufacturer. To be as compact as possible, appliances have to be built in such a way that only their own technicians can diagnose, update firmware, repair, refurbish, or replace parts. Because there is currently a lot of innovation going on in these fields, the majority concluded that the State should not throw a wrench into the repair infrastructure and suffer from the Law of Unintended Consequences.

HB618 Spang Polystyrene Packaging ITL Abramson

While the majority agreed that growing landfills are a problem, we saw that far more good could be accomplished by letting consumers choose to bring reusable cups and containers where possible or even shopping at stores that use recycled containers. New Hampshire is forced to operate a more libertarian state government than we might otherwise choose simply because most of our state's businesses and population lie within a short drive of Vermont, Maine, and Massachusetts. Because of this, restrictions on business merely tend to drive shoppers, business activity, jobs, and revenue to neighboring states. Worse,



members of the committee were concerned that more of our nation's forests would need to be felled to produce the paper for paper cups, sleeves, and other food containers to replace polystyrene. Members of the committee asked for more evidence that food in polystyrene containers leaked chemicals that cause harm, but heard only a few statements and reference to a single study. For this reason, the majority recognizes the need to leave action up to consumers.

Rep. Max Abramson

Free Chad Evans. There is justice in Heaven, and there is justice in Hell. Both are therefore a law abider's utopia's compared to this monstrosity that our taxpayers are compelled to prop up.

"The problem isn't that Johnny can't read. The problem isn't even that Johnny can't think. The problem is that Johnny doesn't know what thinking is; he confuses it with feeling."

--Thomas Sowell

"It is better to take refuge in the Lord than to trust in man." --Psalms 118:8

**Archived:** Thursday, April 22, 2021 1:58:31 PM  
**From:** JOHN HUNT  
**Sent:** Monday, March 8, 2021 2:54:44 PM  
**To:** Carrie Morris  
**Cc:** Pam Smarling  
**Subject:** Fwd: HB 618 Minority Report  
**Importance:** Normal

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OK,  
JBH

Begin forwarded message:

**From:** Anita Burroughs <[Anita.Burroughs@leg.state.nh.us](mailto:Anita.Burroughs@leg.state.nh.us)>  
**Subject:** HB 618 Minority Report  
**Date:** March 4, 2021 at 11:16:50 AM EST  
**To:** Carrie Morris <[carrie.morris@leg.state.nh.us](mailto:carrie.morris@leg.state.nh.us)>, John Hunt <[jbhunt@prodigy.net](mailto:jbhunt@prodigy.net)>  
**Cc:** Christy Bartlett <[christydbartlett@gmail.com](mailto:christydbartlett@gmail.com)>

Good Morning.

Here is my minority write up for HB 618.

Nothing that consumers use for a few minutes of convenience should be allowed to pollute our planet for hundreds of years. Yet polystyrene continues to be used extensively in New Hampshire when there are eco-friendly and cost-effective alternatives.

Polystyrene's light weight makes it easy to be carried by wind and water and into our oceans and rivers. It crumbles easily and is often mistaken by birds, fish and animals for food. It is difficult to recycle and has not been ruled out as a carcinogen. The material begins to breakdown with the addition of hot foods; plastic fibers been having been found in everything from drinking water to salt.

Maine, Maryland, numerous cites in the US and nearly 60 nations have enacted or are in the process of passing similar prohibitions on polystyrene. Given the overwhelming evidence that this material is posing serious dangers to our environment in New Hampshire, legislation is needed for NH to migrate to reusable materials that are recyclable, and which will not do harm to our rivers, oceans and to wildlife.

Sincerely,  
Anita Burroughs



**Anita Burroughs**  
New Hampshire State Representative  
Jackson, Bartlett and Hart's Location  
603-986-6216 | [anitadburr@gmail.com](mailto:anitadburr@gmail.com)  
PO Box 487 Glen NH 03838





# Voting Sheets

**HOUSE COMMITTEE ON COMMERCE AND CONSUMER AFFAIRS**

**EXECUTIVE SESSION on HB 618**

**BILL TITLE:** relative to the sale and distribution of polystyrene food service products.

**DATE:** March 2, 2021

**LOB ROOM:** Zoom

**MOTIONS: INEXPEDIENT TO LEGISLATE**

Moved by Rep. Abramson

Seconded by Rep. Potucek

Vote: 10-9

**CONSENT CALENDAR: NO**

**Statement of Intent: Refer to Committee Report**

Respectfully submitted,

Rep Keith Ammon, Clerk

HOUSE COMMITTEE ON COMMERCE

EXECUTIVE SESSION ON HB HB618

**BILL TITLE:** relative to the sale and distribution of polystyrene food service products.  
Executive session on pending legislation may be held throughout the day (time permitting) from the time the committee is initially convened.

**DATE:** 3/2/2021

**LOB ROOM:**

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**MOTION: (Please check one box)**

- OTP       ITL       Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (*if offered*)

Moved by Rep. Abramson      Seconded by Rep. Potucek      Vote: 10-9

**MOTION: (Please check one box)**

- OTP     OTP/A     ITL     Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (*if offered*)

Moved by Rep. \_\_\_\_\_      Seconded by Rep. \_\_\_\_\_      Vote: \_\_\_\_\_

**MOTION: (Please check one box)**

- OTP     OTP/A     ITL     Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (*if offered*)

Moved by Rep. \_\_\_\_\_      Seconded by Rep. \_\_\_\_\_      Vote: \_\_\_\_\_

**MOTION: (Please check one box)**

- OTP     OTP/A     ITL     Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (*if offered*)

Moved by Rep. \_\_\_\_\_      Seconded by Rep. \_\_\_\_\_      Vote: \_\_\_\_\_

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**CONSENT CALENDAR?**      \_\_\_\_\_ Yes    X No

**Minority Report?**    X Yes    \_\_\_\_\_ No    If yes, author, Rep.: Burroughs      Motion: OTP

Respectfully submitted, Rep. Ammon, Clerk

STATE OF NEW HAMPSHIRE  
OFFICE OF THE HOUSE CLERK



1/22/2021 9:55:55 AM  
Roll Call Committee Registers  
Report

2021 SESSION

Commerce and Consumer Affairs

Bill #: HB618 Motion: ITL AM #: \_\_\_\_\_ Exec Session Date: 3/2/2021

<u>Members</u>	<u>YEAS</u>	<u>Nays</u>	<u>NV</u>
Hunt, John B. Chairman	10		
Potucek, John M. Vice Chairman	1		
Osborne, Jason M.	2		
Ammon, Keith M. Clerk	3		
Abramson, Max	4		
Ham, Bonnie D.	5		
Depalma IV, Joseph	6		
Greeson, Jeffrey	7		
Johnson, Dawn M.	8		
Terry, Paul A.	9		
Bartlett, Christy D.		1	
Abel, Richard M.		2	
Herbert, Christopher J.		3	
Van Houten, Constance		4	
Fargo, Kristina M.		5	
Weston, Joyce		6	
Beaulieu, Jane E.		7	
Burroughs, Anita D.		8	
McAlear, Chris R.		9	
<b>TOTAL VOTE:</b>	10	9	

# Hearing Minutes



HOUSE COMMITTEE ON COMMERCE AND CONSUMER AFFAIRS

PUBLIC HEARING ON HB 618

**BILL TITLE:** relative to the sale and distribution of polystyrene food service products.

**DATE:** February 16, 2021

**LOB ROOM:** 302 Hybrid                      **Time Public Hearing Called to Order:** 11:05 a.m.

**Time Adjourned:** 11:57 a.m.

**Committee Members:** Reps. Hunt, Potucek, Ammon, Abramson, Ham, Depalma IV, Greeson, Johnson, Terry, Bartlett, Abel, Herbert, Van Houten, Fargo, Weston, Beaulieu, Burroughs and McAleer

**Bill Sponsors:**

Rep. Spang  
Sen. Watters

Sen. Whitley

Sen. Perkins Kwoka

TESTIMONY

\* Use asterisk if written testimony and/or amendments are submitted.

Rep Judith Spang\*

Duplication of another House bill that got tabled by the Senate. You should never heat up a food or beverage in a Styrofoam cup because there are toxins that will be release. Styrene can leak into food and is a toxin. The manufacturer of polystyrene is the fifth largest manufacturer of hazardous waste. Litters the ocean. Styrofoam debris causes cancer in wildlife. There's no way to get rid of it. If it's burned it releases toxins. Attempts to recycle have failed at each step of the process. Food service foam is not capable of being recycled. It compacts in collection trucks and breaks into bits and gets contaminated by food particles. It contaminates other recycling streams, especially paper. Stores and food service businesses are already replacing foam containers with paper.

Rep Burroughs

Q: Are there eco-friendly alternatives and how do they compare pricewise?

A: There are. Coffee is now served in paper more often. I ordered cheese and it was served in shredded cardboard products. Styrofoam is very cheap, and the fossil fuel industry is anxious to make it. It is costly to clean it up. There's a bigger financial issue than just the cost of the cup.

Rep Fargo

Q: Could you speak to the exemptions?

A: Factory sealed packages, and uncooked poultry, fish, meat. There are health issues to make sure the meat is leaving the factory in a sanitary way. Sometimes food packages get delivered to the store that way.

Rep Abramson

Q: Chemicals are released if the polystyrene is heated. Is it the same for cold food?

A: Eggs stored in Styrofoam containers answers that question. Chemicals transfer to the eggs event though they're kept cold.

Rep Bartlett

Q: WYB, some of us have stopped frequenting restaurants that still use polystyrene?

A: Yes.

Christiana Dubin

Resident of Portsmouth. I support the bill. The foam is toxic to product. The chemicals accumulate in the body. There's a high social cost that's not factored in. New Hampshire would not be alone – five other states have banned. Portsmouth has banned it since Dec 31, 2020. Restaurants who refuse polystyrene enjoy more customers. Landfills are filling up. Municipalities are already able to limit solid waste.

Rep Abramson

Q: Half of our food delivery comes in from Mass. What if a restaurant from out of state tries to deliver food in foam container?

A: Defers to Rep. Spang.

Q: Wouldn't that put a NH restaurant at a disadvantage?

A: Maine has similar legislation. It's a matter of time this will happen to other states.

Rep Hunt: Bill states it would restrict products from out of state.

Omar Terrie

American Chemistry Council. Opposed to HB618. This is a terrible time to be banning this from food service. Restaurants are holding on for dear life. This is an affordable option for restaurants. There are new advanced recycling technologies that can separate out contaminants and recycle polystyrene. This is happening in Oregon. Polystyrene recycling plant is being built in Illinois. Georgia plant is turning it into fuel and waxes and shipping that off to Shell chemical. There are several states that have passed advanced recycling technology bills. PA, FL, WI, Iowa, etc.

Rep Burroughs

Q: DHHS listed Styrofoam as a carcinogenic. Hot foods can cause toxins to be released into the blood stream. Is that a concern?

A: Cites a study in Europe. It factored in exposure as well as hazard assessment. Drinking too much water is hazardous. It's about level of exposure. We don't have enough information on this topic. Styrofoam Economic Research Council. Steak, cinnamon, strawberry have similar chemicals. Polystyrene foam is an inert substance.

Rep Greeson

Q: Photo degradation, could you explain it?

A: Photo degradation is how a substance breaks down in sunlight. Study from a Massachusetts institute that shows in sunlight polystyrene foam breaks down much more quickly than previously understood.

Rep Abramson

Q: What is the temperature where polystyrene starts releasing chemicals into the hot beverage.

A: I'll have to get back to you. It's an inert material so there isn't any transfer. As to temperature, I'll have to get back to you.

Rep Beaulieu

Q: What group do you represent?

A: I represent plastic converters and resin producers.

Jon Swan

From Dalton. I'm the founder of Save Forrest Lake. We're in landfill battle. I support HB618. We've been trying to save Forrest lake from a landfill. Polystyrene foam goes straight to landfills. I ask you to support this bill. This is a step in the right direction. The solid waste plan for the state has not been updated since 2003. We need to get serious about reducing the amount of waste we generate in society. Styrofoam cups litter our landscape.

Bruce Berke

Techniplex, Dalco Packaging. We're the leading manufacturer of foam egg cartons as well as other packaging solutions. The previous bill exempted eggs. We're suggesting exemptions for eggs and raw produce. We've submitted a proposed amendment for the bill. Raw eggs and produce is a complex supply chain. This language would treat all egg and produce production similarly. In-state production wouldn't be disadvantaged. Litter is an important issue. Egg cartons and produce containers are not part of road-side litter. If the bill moves forward, we urge you to include that language.

Rep Abramson

Q: Are businesses that deliver from out of state to NH going to have to transfer the contents over?

A: If the product arrives pre-packaged, then the owner of the store could sell that product as-is. If a local farm was selling apples in a polystyrene tray that wouldn't be allowed. HB1564 had a fiscal note as indeterminable but were clearly talking about enforcement issues but HB618 doesn't have a note.

Melissa Gates

Lobbyist. Surfrider Foundation New Hampshire Chapter. We support the bill. A lawsuit was filed against NYC for foam container ban and lawsuit failed because polystyrene foam is not recyclable. Takes hundreds of years to photo degrade. One of the top 10 items we pull from NH beaches. Plastic pollution in Maine waters is a problem. Heat, alcohol, and acidity are also a factor to leaching toxins into the food. Pervasive pollution is also a factor. Foam is wreaking havoc at our landfills. Breaks up into tiny particles and flies on the wind. States are instituting a ban in the middle of a pandemic. The products are made in black and brown communities. Our adjacent states have legislation advancing. I hope you'll vote this bill favorably forward.

Henry Veilleux

On behalf of NH Lodging and Restaurant Association. We're not tone deaf. We know folks want restaurants to move to environmentally safe products. Common Man restaurants have paper straws. There is a cost impact. Proponents of this bill disagree with the pace at which progress is happening. This bill requires a drop-dead date in ten months. The timing of this bill is bad as restaurants are just trying to stay in business.

Rep Bartlett

Q: Can we count on your support if we made this July 1, 2022?

A: You can retain the bill. There's still going to be some lag time when we come out of this (the pandemic).

Q: If we retained the bill and changed the date could we count on your support?

A: Doesn't approve of a hard-fast date. No.

HOUSE COMMITTEE ON COMMERCE & CONSUMER AFFAIRS

PUBLIC HEARING on Bill # HB618

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**DATE:** Feb 16, 2021

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Q: Can we count on your support if we made this July 1, 2022?

A: You can retain the bill. There's still going to be some lag time when we come out of this (the pandemic).

Q: If we retained the bill and changed the date could we count on your support?

A: Doesn't approve of a hard-fast date. No.

# House Remote Testify

## Commerce and Consumer Affairs Committee Testify List for Bill HB618 on 2021-02-16

<u>Name</u>	<u>City, State</u> <u>Email Address</u>	<u>Title</u>	<u>Representing</u>	<u>Position</u>	<u>Testifying</u>	<u>Signed Up</u>
Spang, judith	judith@kestrelnet.net	An Elected Official	Myself prime sponsor	Support	Yes (6m)	2/10/2021 4:11 PM
Moran, Brian	brian@necsema.net	A Lobbyist	NECSEMA	Oppose	Yes (5m)	2/15/2021 10:15 PM
Terrie, Omar	omar_terrie@americanchemistry.com	A Member of the Public	American Chemistry Council	Oppose	Yes (4m)	2/15/2021 1:21 PM
Swan, Jon	SaveForestLake@yahoo.com	A Member of the Public	Myself	Support	Yes (3m)	2/12/2021 6:35 AM
Dubin, Christina	christinadubin@gmail.com	A Member of the Public	Myself	Support	Yes (3m)	2/14/2021 5:08 PM
Morrison, Nancy	Weetamooc@aol.com	A Member of the Public	Myself	Support	Yes (3m)	2/15/2021 8:27 PM
Gates (she/her), Melissa	mgates@surfrider.org	A Lobbyist	Surfrider Foundation New Hampshire Chapter	Support	Yes (3m)	2/10/2021 11:31 AM
Page, Gail	gailpage90@gmail.com	A Member of the Public	Myself	Support	Yes (2m)	2/15/2021 9:09 PM
Veilleux, Henry	hveilleux@sheehan.com	A Lobbyist	NH Lodging & Restuarant Association	Oppose	Yes (2m)	2/14/2021 10:37 AM
Cohen, Bruce	bruce.cohen@leg.nh.state.us	An Elected Official	Hillsborough 28	Support	No	2/14/2021 10:55 AM
Fordey, Nicole	nikkif610@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 8:10 PM
Flammer, Yadin	yadinflammer@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 8:53 PM
Johnson, Sara	nhchicagocubfan@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 5:46 AM
Burhardt, Majka	majka13@me.com	A Member of the Public	Myself	Support	No	2/14/2021 8:04 AM
evankow, abby	abbyaustin89@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 11:09 AM
Thompson, Laura	nicnmom@hotmail.com	A Member of the Public	Myself	Support	No	2/14/2021 12:13 PM
Wells, Lee	leewells.locustfarm@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 12:42 PM
Kellogg, Patricia E	pk@kelloggsurvey.com	A Member of the Public	Myself	Support	No	2/14/2021 12:48 PM
Fillion, Chad	cfillion@phlume.com	A Member of the Public	Myself	Support	No	2/14/2021 3:31 PM



Almy, Susan	susan.almy@comcast.net	An Elected Official	Myself	Support	No	2/14/2021 3:32 PM
Yokela, Josh	josh.yokela@leg.state.nh.us	An Elected Official	Rockingham 33	Oppose	No	2/14/2021 4:04 PM
Hamblet, Joan	joan.hamblet@leg.state.nh.us	A Member of the Public	Myself	Support	No	2/14/2021 3:05 PM
SAWTELLE, ERICK	esawtelles@aol.com	A Member of the Public	Myself	Oppose	No	2/14/2021 6:32 PM
Babb, Paul	paulbabb@protonmail.com	A Member of the Public	Myself	Oppose	No	2/14/2021 8:41 PM
woodcock, stephen	slwoodcock116@gmail.com	An Elected Official	Myself	Support	No	2/15/2021 1:35 PM
Torpey, Jeanne	jtorp51@comcast.net	A Member of the Public	Myself	Support	No	2/15/2021 1:36 PM
Warren, Joan	joanbcwarren@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 1:48 PM
Jakubowski, Deborah	Dendeb146@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 2:26 PM
Frost, Sherry	sherry.frost@leg.state.nh.us	An Elected Official	Myself	Support	No	2/15/2021 2:26 PM
jakubowski, dennis	dendeb146@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 2:28 PM
Dutzy, Sherry	sherry.dutzy@leg.state.nh.us	An Elected Official	Myself	Support	No	2/15/2021 2:29 PM
Thomas, Elaine	thomas.marshall@comcast.net	An Elected Official	Myself	Support	No	2/15/2021 2:32 PM
Hayward, Marcia	mjhayward131@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 2:58 PM
Grassie, Chuck	chuck.grassie@leg.state.nh.us	An Elected Official	Strafford 11	Support	No	2/15/2021 3:16 PM
Lange, Pavlin	pavlin.lange@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 3:23 PM
Fedorchak, Gaye	gayevf@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 3:35 PM
Glover, Louise	Daveylou86@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 3:35 PM
Glover, David	Daveylou86@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 3:37 PM
McCue, Dara	daramccue@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 4:02 PM
Whitley, Senator Becky	rebeccawhitleynh@gmail.com	An Elected Official	Myself	Support	No	2/15/2021 4:12 PM
Hope, Lucinda	lmhope46@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 4:13 PM
ingold, bret	bretgold@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 4:39 PM
Maggiore, Jim	jim.maggiore@leg.state.nh.us	An Elected Official	Myself	Support	No	2/15/2021 4:54 PM
Mennella, Alexandra	amennella1@protonmail.com	A Member of the Public	Myself	Oppose	No	2/15/2021 6:50 PM
Carole, Kimberly	Mskimberlycarole@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 7:09 PM
Cutshall, Catherine	vivadofamily@aol.com	A Member of the Public	Myself	Support	No	2/15/2021 7:16 PM

Anastasia, Patricia	patti.anastasia@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 7:16 PM
Vivado, Mauricio	maumajo@aol.com	A Member of the Public	Myself	Support	No	2/15/2021 7:17 PM
Thomas, Sally	Sallythomas@comcast.net	A Member of the Public	Myself	Support	No	2/15/2021 6:19 PM
Connolly, Brenna	connolly.brenna@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 6:21 PM
McLaughlin, Barbara	brbmclaughlin42@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 7:59 PM
Caruso, Alison	alisoncaruso@mac.com	A Member of the Public	Myself	Support	No	2/12/2021 7:37 AM
White, Connie	mommabird1953@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 6:54 AM
Griffin, Ann	ann.griffin@yahoo.com	A Member of the Public	Myself	Support	No	2/12/2021 8:16 AM
Griffin, Johann	yojogriff@yahoo.com	A Member of the Public	Myself	Support	No	2/12/2021 8:18 AM
Pastoriza, Kris	krispastoriza@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 12:59 PM
Avgerakis, Will	wavgerakis@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 8:44 AM
Griffin, Catherine	ccgriffin02@yahoo.com	A Member of the Public	Myself	Support	No	2/12/2021 8:49 AM
Keiler, Caleb	Calebkeiler98@icloud.com	A Member of the Public	Myself	Support	No	2/12/2021 8:53 AM
Delventhal, Amy	amy_whitefeather@yahoo.com	A Member of the Public	Myself	Support	No	2/12/2021 9:17 AM
Hurley, John	jrhurjd@aol.com	A Member of the Public	Myself	Support	No	2/12/2021 9:28 AM
Shaw, Autumn	autumncshaw@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 9:31 AM
Haberman, Kenneth	khabe2@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 9:38 AM
Katzman, Jacki	jackisue@aol.com	A Member of the Public	Myself	Support	No	2/12/2021 10:14 AM
Doucette, Roger	rogerddoucette@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 10:18 AM
Tuthill, John	jtuthill@sover.net	A Member of the Public	Myself	Support	No	2/12/2021 10:19 AM
Koch, Helmut	helmut.koch.2001@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 10:34 AM
Lowe, Eryka	Erykalyne21@yahoo.com	A Member of the Public	Myself	Support	No	2/12/2021 1:16 PM
Anderson, Fred	fra676@mapc.com	A Member of the Public	Myself	Support	No	2/12/2021 6:09 PM
Weston, Joyce	jweston14@roadrunner.com	An Elected Official	Myself	Support	No	2/13/2021 7:38 AM
Stephenson, Linda	LSS413@comcast.net	A Member of the Public	Myself	Support	No	2/13/2021 9:14 AM
Caplan, Tony	anthonycaplan1@gmail.com	An Elected Official	Merrimack 6	Support	No	2/13/2021 9:29 AM
Coleman, Kimberley	kimcoleman1221@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 5:08 AM

Chase, Wendy	wendy.chase@leg.state.nh.us	An Elected Official	Myself	Support	No	2/13/2021 2:16 PM
Rennie, Ellen	Elrennie3@gmail.com	A Member of the Public	Myself	Support	No	2/12/2021 7:13 PM
Boswell, Laurie	laboswell@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 11:28 AM
Bates, David	dbates3@yahoo.com	A Member of the Public	Myself	Support	No	2/13/2021 11:33 AM
Dodd, Alison	doddalison@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 6:27 AM
Boyle, John David	adimes_99@yahoo.com	A Member of the Public	Myself	Support	No	2/13/2021 11:44 AM
Doucette, Sarah	sdoucette58@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 12:42 PM
Hamer, Heidi	hhamer59@aol.com	An Elected Official	Myself	Support	No	2/13/2021 1:50 PM
Fenner-Lukaitis, Elizabeth	glukaitis@mcttelecom.com	A Member of the Public	Myself	Support	No	2/13/2021 1:51 PM
Carbonneau, Peter	Peter.Carbonneau@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 1:53 PM
Glenn, Tracy	Teglenn@yahoo.com	A Member of the Public	Myself	Support	No	2/13/2021 2:53 PM
Merrick, Evalyn	justbreath2003@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 3:44 PM
Schmidt, Jan	tesha4@gmail.com	An Elected Official	Myself	Support	No	2/13/2021 4:00 PM
Brickett, Jane	silofarm@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 5:32 PM
Cayer, Timothy	cayermedia@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 5:55 PM
Abruzzese, Cathleen	Catabruzzo@comcast.net	A Member of the Public	Myself	Support	No	2/13/2021 5:57 PM
Zaniewski, James	Jim.zaniewski@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 7:17 AM
Cayer, Richard	rscayer@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 6:53 PM
Cayer, Susan	rscayer@gmail.com	A Member of the Public	Myself	Support	No	2/13/2021 6:55 PM
DeMark, Richard	demarknh114@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 9:13 PM
Lupton, Claire	luptoncopy@aol.com	A Member of the Public	Myself	Support	No	2/15/2021 9:16 PM
Thomas, Nicholas	nicholas.w.thomas@uconn.edu	A Member of the Public	Myself	Oppose	No	2/15/2021 9:20 PM
Foss, Carol	cfoss@nhaudubon.org	A Member of the Public	NH AUDUBON	Support	No	2/15/2021 9:29 PM
Murphy, Nancy	murphy.nancya@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 9:30 PM
Axelman, Elliot	aluaxelman@gmail.com	A Member of the Public	Myself	Oppose	No	2/15/2021 9:31 PM
Pedersen, Michael	PedersenUSA@aim.com	An Elected Official	Hillsborough 32	Support	No	2/15/2021 8:48 PM
Donovan, Julie		A Member of the Public	Myself	Support	No	2/15/2021 8:58 PM

	julie.donovan@juno.com					
See, Alvin	absee@4Liberty.net	A Member of the Public	Myself	Oppose	No	2/15/2021 9:06 PM
Moore, Susan	susan.moore.franconia@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 5:09 PM
Westlake, Jane	janewestlake57@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 7:21 PM
Rich, Cecilia	ceciliarich@hotmail.com	An Elected Official	Myself	Support	No	2/14/2021 4:57 PM
Clark, Lynn	rubylynn862@gmail.com	A Member of the Public	Myself	Support	No	2/14/2021 7:00 PM
Groetzinger, Tonda	groetzinger6@aol.com	A Member of the Public	Myself	Oppose	No	2/15/2021 8:29 AM
Dontonville, Roger	rdontonville@gmail.com	An Elected Official	Myself	Support	No	2/15/2021 9:04 AM
Ingram, April	aandk@tds.net	A Member of the Public	Myself	Support	No	2/14/2021 7:46 PM
MacBride, Hannah	hannah.lee.macbride@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 9:15 AM
Sullivan, Kelsey	kelsey.2.sullivan@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 10:15 AM
Larson, Ruth	ruthlarson@msn.com	A Member of the Public	Myself	Support	No	2/15/2021 11:12 AM
Gould, Rep. Linda	lgouldr@myfairpoint.net	An Elected Official	Myself	Oppose	No	2/15/2021 11:22 AM
Ballentine, John M	mikeb@btine.com	A Member of the Public	Myself	Support	No	2/15/2021 11:22 AM
Bouchard, Donald	donaldjbouchard@gmail.com	An Elected Official	Myself	Support	No	2/15/2021 12:09 PM
Moulton, Candace	candaceleighm@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 12:59 PM
Watters, Senator David	david.watters@leg.state.nh.us	An Elected Official	Myself (SD 4)	Support	No	2/9/2021 3:54 PM
Perkins Kwoka, Senator Rebecca	rebecca.perkinskwoka@leg.state.nh.us	An Elected Official	Myself (SD 21)	Support	No	2/9/2021 3:55 PM
Healey, Barbara	Barbara3821@aol.com	A Member of the Public	Myself	Oppose	No	2/10/2021 10:16 AM
Stevens, Representative Deb	debstevens4ward7@gmail.com	An Elected Official	My 10K constituents	Support	No	2/15/2021 10:45 PM
Jones, Stephanie	stephaniermjones@gmail.com	A Member of the Public	Myself	Support	No	2/15/2021 10:54 PM
ARONSON, LAURA	laura@mlans.net	A Member of the Public	Myself	Support	No	2/15/2021 11:10 PM
Arnold, Neil	krisarn@myfairpoint.net	A Member of the Public	Myself	Support	No	2/15/2021 11:54 PM
Bracy, Sue	marysuebracy@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 5:58 AM
Saum, Judith	judithsaum@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 6:40 AM
Chase, Susan	srfchase@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 7:36 AM
Belanger, Ellen		A Member of the Public	Myself	Support	No	2/16/2021 8:03 AM

	nanaellen19@comcast.net					
Mangipudi, Latha	Latha.Mangipudi@leg.state.nh.us	An Elected Official	Hills 35	Support	No	2/16/2021 8:08 AM
Chen, Melinda	maestrachen@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 8:08 AM
Gilman, Rep. Julie	julie.gilman@leg.state.nh.us	An Elected Official	Town of Exeter	Support	No	2/16/2021 8:16 AM
Osborne, Jason	houserepoffice@leg.state.nh.us	An Elected Official	Myself	Oppose	No	2/16/2021 8:37 AM
Berke, Bruce	bberke@sheehan.com	A Lobbyist	Tekni-Plex	Oppose	No	2/16/2021 8:50 AM
HOUGH, GREGG	GreggHough2020@gmail.com	An Elected Official	Myself	Oppose	No	2/16/2021 9:17 AM
Gunski, Michael	michael.gunski@leg.state.nh.us	An Elected Official	Hillsborough 6, Goffstown	Oppose	No	2/16/2021 9:23 AM
Moe, carmelita	carmelitaymoe@outlook.com	A Member of the Public	Myself	Support	No	2/16/2021 9:28 AM
Greene, Bob	bob.greene@leg.state.nh.us	An Elected Official	Myself	Oppose	No	2/16/2021 9:28 AM
Schmitt, Cheri	cherischmitt@comcast.net	A Member of the Public	Myself	Support	No	2/16/2021 9:34 AM
Beene, Holly	holly.beene@yahoo.com	A Member of the Public	Myself	Oppose	No	2/16/2021 9:35 AM
Phillips, Betsey	bphill36@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 9:49 AM
French, Elaine	frenche961@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 9:52 AM
Qualey, Jim	jimqualeyfornh@gmail.com	An Elected Official	Myself	Oppose	No	2/16/2021 10:05 AM
Sheehan, Vanessa	vsheehan16@yahoo.com	An Elected Official	Myself	Oppose	No	2/16/2021 10:11 AM
Lucas, Janet	janluca1953@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 10:22 AM
dostie, donald	dadostietrucking@gmail.com	An Elected Official	Myself	Oppose	No	2/16/2021 10:38 AM
Edwards, Jesse	secure4posterity@yahoo.com	A Member of the Public	Myself	Oppose	No	2/16/2021 10:40 AM
Love, Rep. David	davidlove4rep@gmail.com	An Elected Official	Rockingham 6	Oppose	No	2/16/2021 10:41 AM
Applewhite, Jordan	jordan.applewhite@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 10:42 AM
Barnes, Linda L.	linda@constantquilter.com	A Member of the Public	Myself	Support	No	2/16/2021 10:42 AM
Monsein, Marilyn	msquared3@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 10:58 AM
Christie, Bonnie	Bchristie1953@gmail.com	A Member of the Public	Myself	Support	No	2/16/2021 11:09 AM
THEBERGE, ROBERT	rolath@hotmail.com	An Elected Official	Myself	Oppose	No	2/16/2021 1:38 PM
Murray, Kate	dr.karma2000@gmail.com	An Elected Official	Myself	Support	No	2/16/2021 3:49 PM
Werner, Rob	rob_werner@lcv.org	A Lobbyist	League of Conservation Voters	Support	No	2/16/2021 4:18 PM

Ford, Oliver	lynchford@comcast.net	An Elected Official	Myself	Oppose	No	2/16/2021 4:57 PM
Russell, John	jmrusell63@yahoo.com	A Member of the Public	Myself	Support	No	2/16/2021 5:53 PM
Klee, Patricia	Patricia.Klee@leg.state.nh.us	An Elected Official	Myself	Support	No	2/16/2021 7:15 PM

# Testimony

February 16, 2021

Via Electronic Mail

The Hon. John Hunt, Chair  
Commerce and Consumer Affairs Committee  
N.H. State House  
Concord, NH 03301

**RE: HB 618, An act relative to the sale and distribution of polystyrene food service products.**

Dear Chairman Hunt and Honorable Committee Members:

Conservation Law Foundation (“CLF”) appreciates the opportunity to comment on HB 618, an act relative to the sale and distribution of polystyrene food service products. CLF is a non-profit environmental advocacy organization working to protect the environment and promote healthy communities in New Hampshire, and across New England. CLF’s Zero Waste Project works to address unsustainable and polluting waste management practices and promotes proven waste management solutions like source reduction, reuse, recycling, and composting.

CLF writes to offer our support for HB 618. Expanded polystyrene is a toxic product that is pervasively littered throughout our environment. These single-use items cannot be recycled and pose a serious threat to public health, our waterways, and wildlife. By eliminating the use of polystyrene food containers, the legislature would be reducing the amount of polystyrene sent to landfills and incinerators throughout the state and adhering to the state’s waste management hierarchy which places source reduction as the highest priority for waste management solutions.<sup>1</sup> Portsmouth, recently became the first community in New Hampshire to ban these products, the state legislature should follow this leadership impose a ban statewide.<sup>2</sup>

**I. Polystyrene is One of the Most Toxic Plastics Used to Make Food Packaging Products**

Out of the large array of plastics sold on the market, polystyrene is one of the most dangerous. Styrene (also known as Vinyl Benzene)—a carcinogen—is a building block of polystyrene and is released during manufacture and incineration, exposing workers and communities to dangerous

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<sup>1</sup> R.S.A. 149-M:3.

<sup>2</sup> Annie Ropeik, *Portsmouth Styrofoam Ban Takes Effect, With Little Enforcement For Now*, NHPR, (Dec. 31, 2020). Available at <https://www.nhpr.org/post/portsmouth-styrofoam-ban-takes-effect-little-enforcement-now#stream/>



toxic chemicals.<sup>3</sup> Additionally, styrene, “can [also] migrate into food (and then be ingested) from polystyrene packaging. Limited exposure to styrene can cause irritation of the lungs, eyes, nose, and skin. High exposure can cause changes in vision, slowed reaction times, problems maintaining balance, and even cancer.”<sup>4</sup> In fact, studies have found that polystyrene in food packaging is one of the most hazardous plastics with respect to the potential for carcinogenic releases.<sup>5</sup>

Moreover, polystyrene quickly breaks down into small particles that are widely dispersed in the environment due to its light weight. These microplastics cause physical and neurological toxicity in smaller organisms<sup>6</sup> and can have adverse impacts on humans when ingested.<sup>7</sup>

## **II. Polystyrene Food Service Products Cannot Be Recycled and Contaminates Valuable Recyclables**

Polystyrene food service products cannot be recycled. For a product to be recyclable, it must be capable of being collected, cleaned, processed, and perhaps most importantly, there must be an end market for the processed recycled material. Polystyrene food containers fail in each of these steps.

After extensive research, consultation with a recycling expert and economist, and stakeholder engagement, the Commissioner of the New York City Department of Sanitation issued a report in 2017 that concluded that polystyrene food packaging cannot be recycled in an effective or economically feasible manner.<sup>8</sup> Specifically, the Commissioner concluded:

For 30 years, attempts to recycle Food-Service Foam—both subsidized and non-subsidized attempts—have failed at each step in the recycling process. The municipalities researched by DSNY tell this exact story: Food-Service Foam is not capable of being recycled in an environmentally effective or economically feasible manner.

The municipalities found that Food-Service Foam compacts in collection trucks, breaks into bits, and becomes covered in food residue, making it

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<sup>3</sup> See, e.g., David Azoulay et al., *Plastic & Health: The Hidden Costs of a Plastic Planet* (Feb. 2019), available at <https://www.ciel.org/wp-content/uploads/2019/02/Plastic-and-Health-The-Hidden-Costs-of-a-Plastic-PlanetFebruary-2019.pdf> [hereinafter *Plastic & Health*]

<sup>4</sup> *Id.* at 19.

<sup>5</sup> *Id.*

<sup>6</sup> 1 Lili Lei et al., *Polystyrene (nano)microplastics cause size-dependent neurotoxicity, oxidative damage and other adverse effects in *Caenorhabditis elegans**, *Environmental Science* (July 2018).

<sup>7</sup> See, e.g., *Plastic & Health*, 40.

<sup>8</sup> Commissioner Kathryn Garcia, NYC Dep’t of Sanitation, *Determination on the Recyclability of FoodService Foam 38* (May 12, 2017)

worthless when it arrives at the MRF. It then blows throughout the MRF, is missed by manual sorters, mistakenly moves with the paper material and contaminates other valuable recycling streams, namely paper, which can be the most consistently valuable commodity in a recycling program. Food-Service Foam is too costly to clean and process compared to virgin material. If some is sorted successfully, the light-weight foam must be stored for months, waiting for enough material to economically ship.

If any Food-Service Foam makes it over these hurdles, the process grinds to a stop due to the struggle to find a buyer. With no buyer, municipalities get stuck and ultimately send the remaining amount of Food-Service Foam that escaped being landfilled after the compacting stage or after the sorting stage to a landfill.<sup>9</sup>

Additionally, following the release of the Commissioner’s determination, several polystyrene industry groups attempted to challenge the determination.<sup>10</sup> The New York County Supreme Court denied the petition, finding that the industry’s arguments were unpersuasive and that the Commissioner’s determination “was a painstakingly studied decision.”<sup>11</sup>

### **III. Polystyrene is Pervasive in the Environment**

As polystyrene is not recyclable, much of it is littered throughout the environment posing a significant threat to wildlife. These plastics and the microplastics they eventually deteriorate into “disperses readily throughout marine, freshwater, and terrestrial environments into air, soils, rivers, lakes, and the ocean.”<sup>12</sup> Scientists estimate that there will be more plastic in the ocean than fish by 2050.<sup>13</sup> Plastic products have even been found in the deepest remote portions of the ocean, such as the 7-mile-deep Mariana Trench.<sup>14</sup>

Even in if polystyrene food containers do not end up in the environment, this plastic must be either landfilled or incinerated which presents its own set of public health challenges. While landfills may contain waste in the short term, inevitably they release plastic and other

---

<sup>9</sup> *Id.* at 36.

<sup>10</sup> *Restaurant Action Alliance v. The City of New York*, N.Y. Sup. Ct. (100734/2015) (June 5, 2018).

<sup>11</sup> *Id.* at 10

<sup>12</sup> *Plastic & Health*, 51

<sup>13</sup> 6 Wearden, G. (January 19, 2016). More plastic than fish in the sea by 2050, says Ellen MacArthur, *The Guardian*, <https://www.theguardian.com/business/2016/jan/19/more-plastic-than-fish-in-the-sea-by-2050-warns-ellenmacarthur>.

<sup>14</sup> *Plastic & Health*, 51.

contaminants into the environment.<sup>15</sup> And “extensive evidence demonstrates the harmful short- and long-term effects” of burning plastic and other trash.<sup>16</sup> These plants emit toxic air emissions, generate dangerous ash that must be disposed of, and threaten the health of workers and nearby communities.<sup>17</sup> Landfills and incinerators, along with refineries and plastic manufacturers, are often located in “communities of color and low-income and marginalized communities. As such, they are generally viewed as areas of least resistance, where it is likely that people will not have the ability and resources to challenge industry, even when those industries are likely to negatively impact their environment and health.”<sup>18</sup> Incineration and landfilling are the least preferable waste management solutions under New Hampshire law and the only viable solutions for addressing the steady stream of polystyrene products disposed of throughout the state.<sup>19</sup>

#### **IV. Conclusion**

HB 618 follows the regional and national trend of banning polystyrene to better protect public health and the environment. Banning polystyrene advances New Hampshire’s important prioritization of waste *reduction* over waste *disposal* and will decrease the amount of plastic burned and buried in New Hampshire every year. Therefore, CLF urges the Commerce and Consumer Affairs Committee to support HB 618 and vote *ought to pass*.

Respectfully submitted,

*Peter W. Blair Jr*

Peter Blair, Esq.  
Staff Attorney  
Conservation Law Foundation

---

<sup>15</sup> Kirstie Pecci. (July 23, 2018). All Landfills Leak, and Our Health and Environment Pay the Toxic Price, Conservation Law Foundation, <https://www.clf.org/blog/all-landfills-leak-and-our-health-and-environment-pay-the-toxic-price/>. 22 Plastic & Heal

<sup>16</sup> Plastic & Health, 44.

<sup>17</sup> Id. at 45-47

<sup>18</sup> Id. at 17

<sup>19</sup> R.S.A. 149-M:3



A TEKNI-PLEX BUSINESS

Chairman John Hunt and Members of the House Commerce and Consumer Affairs Committee:  
February 16, 2021

Chairman Hunt,

I am writing this testimony to express concerns regarding proposed House Bill 618, relative to the sale and distribution of *polystyrene food service products*.

Raw eggs, raw meat, and raw produce (apples and pears) have a more complex supply chain as they move to the supermarket shelf than takeout containers. A takeout container is filled and handed across the counter to the customer. Raw eggs, raw meat products, and raw produce are often packed in large centralized facilities, for reasons of cost and food safety, with equipment and processes dedicated to the type of packaging that they are using. Changing to an alternative package is complicated and expensive. This is one of the reasons that polystyrene foam ban language in HB 618 provides an exemption for containers packaged before being received by the retail location. Other states that allow for a pre-packaged exemptions include new statewide bans in Maine, Vermont, and Maryland.

In order to treat all egg and produce production similarly, I propose an amendment (page 2) to permit the use of egg containers and produce trays no matter where the food originates. The proper disposal of solid waste and the environment impacts of litter are important issues in municipalities and states. But polystyrene foam egg cartons, trays for various types of meat, and apple flats are not normally found in litter. No one buys an egg carton, eats the eggs on the way home, and tosses the carton out the window.

Additionally, adherence to interstate commerce regulations can cause different rules for in state and out of state centralized facilities. These differences can lead to in state farmers and/or packers being put at a disadvantage. We are seeing this now in Maryland, where Maryland reversed the ban on egg cartons through a legislative amendment adding egg cartons to the list of exemptions when they realized they were putting in state packers at a disadvantage.

For these reasons, we respectfully request that you consider a similar amendment that passed the House last year when this issue was addressed. The bill eventually stalled due to the pandemic but it served to explicitly exempt polystyrene foam packaging for all types of raw eggs. Further and for the reasons cited above, we ask the amendment to include produce trays (apple and pear flats).

Respectfully,

George D. Braddon III

**PROPOSED AMENDMENT – Section 2 of HB 618**

2 New Subdivision; Prohibition of Single-use Polystyrene Foam Food Service Products. Amend RSA 149-M by inserting after section 23 the following new subdivision:

**Prohibition of Polystyrene Foam Food Service Products**

149-M:23-a Definitions. In this subdivision:

I. "Disposable food service product" means food containers designed for one-time use. "Disposable food service container" includes service ware for beverages, trays, take-out foods, packaged meat, eggs, bakery products, and leftovers from partially consumed meals prepared by food vendors.

II. "Food service business" means a business that sells or provides food for consumption on or off the premises, and includes, but is not limited to, any restaurant, cafe, delicatessen, coffee shop, supermarket or grocery store, vending truck or cart, food truck, movie theater, school, business, or institutional cafeteria, including those operated by or on behalf of the state. "Food service business" does not include health care facilities or Meals on Wheels programs.

III. "Polystyrene foam" means blown polystyrene and expanded or extruded foams using a styrene polymer.

IV. "Service product" means a food container, bowl, plate, tray, carton, hot and cold beverage cup, lid, or other item designed to be used for foods or beverages.

149-M:23-b Prohibition on Single-Use Polystyrene Foam Food Service Products.

I. Beginning January 1, 2022, no food service business shall sell or distribute in the state a disposable food service product for foods or beverages that is composed in whole or in part of polystyrene foam.

II. The following items are exempt from the prohibition in this section:

(a) Factory-sealed, aseptically-packaged shelf-stable foods.

(b) Uncooked meat, fish, poultry, or seafood for off-premises preparation and consumption.

(c) Food or beverages that have been packaged in expanded polystyrene outside the state before receipt by a food service business.

**(d) eggs and raw produce.**

III This section shall not prohibit a person from re-using polystyrene packaging received with products distributed from out of state.

IV. A food service business shall not be in violation of a prohibition under this subdivision if the food service business:

(a) Purchased the polystyrene foam food service product prior to January, 2022; and

(b) Provides the polystyrene food service product to a consumer on or before July 1, 2022.

149-M:23-c Municipalities shall have the sole authority under this subdivision to regulate, implement, and enforce the prohibition on polystyrene foam food service products.

**Archived:** Wednesday, April 14, 2021 1:26:20 PM

**From:** [Peter Blair](#)

**Sent:** Tuesday, February 16, 2021 8:51:47 PM

**To:** ~[House Commerce Committee](#)

**Subject:** Testimony on HB 618, An Act Relative to the Sale and Distribution of Polystyrene Food Service Products.

**Importance:** Normal

**Attachments:**

2021-2-15 CLF Testimony on H. 618 - Polystyrene Food Container Ban.pdf ;

---

Dear Chairman Hunt and Honorable Committee Members:

My name is Peter Blair. I am a Staff Attorney with Conservation Law Foundation. Attached is testimony written in support of HB 618. Thank you for your time and consideration of this testimony. I would be happy to answer any questions you may have regarding the bill and the proposed ban on polystyrene food service products.

Respectfully submitted,  
Peter Blair

**Peter Blair, Esq.**

Staff Attorney, Zero Waste Project

Conservation Law Foundation

*Pronouns: he/him/his*

53 Exchange St. #200

Portland, ME 04101

P: 207-210-6439 x.5017

E: [pblair@clf.org](mailto:pblair@clf.org)

[www.clf.org](http://www.clf.org)

For a thriving New England



[Facebook](#) | [Twitter](#) | [LinkedIn](#)

**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** Judith Spang

**Sent:** Tuesday, February 16, 2021 9:29:58 AM

**To:** ~House Commerce Committee

**Subject:** Fwd: Testimony on HB 618

**Importance:** Normal

**Attachments:**

TESTIMONY ON foam HB 618.docx 

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Begin forwarded message:

**From:** Judith Spang <[judith@kestrelnet.net](mailto:judith@kestrelnet.net)>

**Subject:** Testimony on HB 618

**Date:** February 15, 2021 at 6:09:12 PM EST


**To:** [houseCommerceandConsumerAffairs@leg.state.nh.us](mailto:houseCommerceandConsumerAffairs@leg.state.nh.us)

Dear Chair Hunt and Committee,

I will be introducing this bill on polystyrene food containers to the Committee at 10:30 tomorrow, the 16th.

My testimony is attached.

Regards, Rep. Judith Spang

**Archived:** Wednesday, April 14, 2021 1:26:21 PM  
**From:** [Jodi Grimbilas](#)  
**Sent:** Tuesday, February 16, 2021 6:12:08 AM  
**To:** [~House Commerce Committee](#)  
**Subject:** HB 618 testimony of Omar Terrie from the American Chemistry Council  
**Importance:** Normal  
**Attachments:**  
[New Hampshire HB618 - ACC Oppose.pdf](#) 

---

Good Morning Mr. Chairman and Honorable Members of the Committee:

On behalf of the American Chemistry Council, I have attached a copy of Mr. Omar Terrie's testimony in opposition to HB 618 which will be heard later this morning.

Thanks and have a great day!

Jodi

***Jodi Grimbilas, President***  
**J Grimbilas Strategic Solutions LLC**  
(Office) 4 Park Street, Suite 101, Concord  
(Mail) PO Box 233, Northwood, NH 03261  
(Cell) 603-496-2638  
[jodi@jgstrategies.com](mailto:jodi@jgstrategies.com)



**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** [Tim Morgan](#)

**Sent:** Tuesday, February 16, 2021 2:18:30 AM

**To:** [~House Commerce Committee](#)

**Subject:** HB 618 Testimony

**Importance:** Normal

**Attachments:** [T. Morgan HB 618 Testimony.docx](#) ;

---

Attached. Thank you.

Tim Morgan  
603-724-3612

**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** [Brian Moran](#)

**Sent:** Monday, February 15, 2021 10:21:01 PM

**To:** ~House Commerce Committee

**Cc:** [Jon Shaer](#)

**Subject:** HB 618 Testimony by NECSEMA

**Importance:** Normal

**Attachments:**

NH HB 618 Polystyrene Ban NECSEMA 2-16-21.pdf ;

---

Please find attached testimony opposing HB 618 by the New England Convenience Store & Energy Marketers Association. Please let me know if you have any questions.

Best Regards

Brian

**Brian P. Moran, Director of Government Affairs**

New England Convenience Store & Energy Marketers Association, Inc. (NECSEMA)

1044 Central Street, Suite 203, Stoughton, MA 02072

Mobile: 617-233-2428 | Office: 781-297-9600 ext. 5 | Fax: 781-297-9601

[brian@necsema.net](mailto:brian@necsema.net) | [www.necsema.net](http://www.necsema.net) | [Join NECSEMA](#)



**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** Carol Foss

**Sent:** Monday, February 15, 2021 9:34:26 PM

**To:** ~House Commerce Committee

**Subject:** testimony for HB 618

**Importance:** Normal

**Attachments:**

[HB618 polystyrene containers.docx.pdf](#) 

---

Dear Committee Members,

Attached please find testimony on behalf of New Hampshire Audubon in support of HB 618.

Sincerely,  
Carol Foss

Carol R. Foss, Ph.D.  
Senior Advisor for Science and Policy

New Hampshire Audubon  
84 Silk Farm Road  
Concord, NH 03301

603-224-9909 x331

**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** [Bruce Berke](#)

**Sent:** Monday, February 15, 2021 3:45:32 PM


**To:** [John Hunt](#); [~House Commerce Committee](#)

**Cc:** [Simon P. Thomson](#)

**Subject:** HB 618 testimony 02-16-21 (002)

**Importance:** Normal

**Attachments:**

[HB 618 testimony 02-16-21 \(002\).docx](#) 

---

Mr Chairman and Members of the House Commerce Committee,

Please find attached, testimony from George Braddon on HB 618.

For returning Members, you may recall a similar bill last year that passed the House in an amended form.

In Mr. Braddon's letter, he asks that if this Committee is likely to pass this bill again that it have a similar amendment ensuring that eggs and produce are able to use the form of packaging that HB 618 would ban.

I will briefly testify tomorrow in support of the language attached in this email and will attempt to address any questions you may have about the proposal.

Bruce

***Bruce Berke***

***Sheehan Phinney Capitol Group***

***603-496-8092***



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**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** judi lindsey

**Sent:** Saturday, February 13, 2021 8:36:25 PM

**To:** ~House Commerce Committee

**Subject:** Judi - public comment HB 618

**Importance:** Normal

**Attachments:**

[\\_1 HB 618 foam free nh.pdf](#) 

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Attached please find my letter of comment. It is also included in the body of this email.

Thank you for considering all comments.

Judi Lindsey

822 North Road

Candia 03034

Feb. 13, 2021

Good day Chairman Hunt and distinguished Members of the House Committee on Commerce and Consumer Affairs,

I am Judi Lindsey from Candia where I am a volunteer on my town Planning Board and Conservation Commission.

I support HB 618 Foam Free NH and am asking that you do, too. This bill is an important step in reducing and eliminating the use of polystyrene foam food-ware.

This foam based material can not be recycled due to food contamination. Our local recycling center does not recycle it and it becomes garbage - and a tax on the townspeople.

The chemicals in it are toxic. They can leach out when it is heated and poison our food, our bodies, and our environment.

And I am personally affected by this wasteful and harmful material when I am out kayaking on the quiet ponds and see the trash up close - caught in the blueberry bushes along the shore, and stuffed in the cattails and lily pads. And most disgustingly, I have seen animals attracted by the food scraps in the containers and choked to death.

I see no reason to continue using a product that is shown to be destructive, lethal and wasteful. There are safer, more economically sound alternatives - and they are being used now in towns, cities and other states - proving it can be done.

Thank you for listening to the public comments.

**Archived:** Wednesday, April 14, 2021 1:26:21 PM  
**From:** Bruce Berke  
**Sent:** Monday, March 1, 2021 7:12:51 PM  
**To:** ~House Commerce Committee  
**Subject:** HB 618 - please vote to find ITL  
**Importance:** Normal

---

Good evening Members of the House Commerce Committee,

This is the second email I am sending to you tonight in opposition to House 618, relative to banning polystyrene containers in NH. The first email I sent was on behalf of the 1100+ NFIB NH members I represent before the Legislature.

This second email is on behalf of Tekni-Plex, a manufacturer of egg cartons and fruit trays. Prior to the hearing on February 16<sup>th</sup>, I had emailed you a letter from George Braddon, a representative from Tekni-Plex, which is a division of Dolco Packaging. Dolco Packaging is the leading manufacturer of polystyrene foam egg cartons in the United States. They also make meat, poultry, apple, pear and food service trays.

During the hearing, I offered an amendment that would have permitted the use of foam trays for eggs and raw produce but in conversation, the sponsor rejected it. There are other concerns with the bill that I mentioned that day and likely warrant finding the bill inexpedient to legislate.

These concerns include:

- The way the bill was structured, it favors out-of-state suppliers over in-state suppliers;
- Last year's similar bill, sponsored by Rep. Balch (D)-Wilton, clearly permitted egg cartons to be used in NH no matter where the carton or egg came from; this year's bill does not;
  - Tekni-Plex supported the bill last year;
- It was stated at the hearing that this material cannot be recycled but that was not accurate; clean polystyrene can be recycled and "dirty" polystyrene has already made strides towards being able to be recycled;
- States where a similar ban has been considered have either made an exception for egg cartons and produce or the bans have not passed into law;
- Before being stalled by the pandemic, last year's bill also had a significant fiscal note attached to it and somewhat surprisingly, this bill does despite being essentially the same.
  - Just for staff, costs would be \$50,000 per year and unfortunately last year's bill did not have dollar totals what it would cost to carry out the intent of the bill as well as the state and local jurisdictions incurring greater costs for their own new supplies of packaging.

Thank you for your time this evening. I know you have a lot of bills in front of you tomorrow and I believe this is the last one on the list. Based upon my comments at the hearing, those in this email and others you heard at the hearing, I urge you and your colleagues to find HB 618 to be ITL.

Sincerely,

Bruce Berke

For our client, *Tekni-Plex*

***Bruce Berke***

***603-496-8092, mobile***

[www.spcapitolgroup.com](http://www.spcapitolgroup.com)



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**Archived:** Wednesday, April 14, 2021 1:26:21 PM  
**From:** Bruce Berke  
**Sent:** Monday, March 1, 2021 6:08:01 PM  
**To:** ~House Commerce Committee  
**Subject:** NFIB-NH Opposes House Bill 618  
**Importance:** Normal

---

Dear Members of the House Commerce Committee,

As you and your colleagues deliberate over legislation the next two days in Executive Session, on behalf of the 1100+ New Hampshire members of the National Federation of Independent Business, **I ask you to find House Bill 618 inexpedient to legislate.**

As NFIB New Hampshire's State Director, I have watched the hardships suffered over the past year by our statewide and diverse membership. But perhaps no other sector has been hit harder than our local restaurants and hospitality community. The COVID-19 pandemic has not only upended our way of life, but also jeopardizes the livelihoods of so many workers in the restaurant business, through no fault of their own.

Food services, including restaurants in our own backyard, have seen closures throughout the State, and some of them possibly for good. The Legislature's consideration of a "polystyrene ban" adds damage to an already damaged sector of NH's business community. The scope of this ban would be wide-ranging and costly as it extends beyond our restaurant members: from academic institutions to community non-profits and of course NFIB's members, brick and mortar small businesses. During this past year, more restaurant and food service industries would have gone out of business (along with accompanying jobs) without a robust take out program. In many cases, restaurants use polystyrene products to ensure safety and hygiene for customers. As such, many of our members and their employees in this sector are only still working because of the option for take-out service.

The replacement products of polystyrene can be up to four times as expensive for businesses to buy and replace their current stock. To now mandate that new and more expensive materials be purchased without polystyrene would jeopardize their viability in the community and potentially greater unemployment among our members.

While I appreciate this Committee's attention and concern to balance many priorities, a polystyrene ban would enact new, costly, and burdensome mandates on the backs of the most vulnerable workers and small businesses in our state.

I ask you to oppose HB 618. Thank you.

Sincerely,

Bruce Berke  
State Director  
National Federation of Independent Business - NH

-

**Bruce Berke**  
**603-496-8092, mobile**



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**Archived:** Wednesday, April 14, 2021 1:26:21 PM  
**From:** [sarah doucette](#)  
**Sent:** Tuesday, February 16, 2021 7:40:47 AM  
**To:** ~House Commerce Committee  
**Subject:** HB 618 - Ought to Pass  
**Importance:** Normal

---

Greetings Chairman Hunt and House Commerce and Consumer Affairs Committee Members,

Even as we apologize for writing to you just before your hearing on HB 618, we **thank you for taking testimony** about banning polystyrene foam food packaging statewide in NH. We **must all work to reduce our waste** as a society and this is a hopeful step.

**Comprehensive reform is desperately needed** to develop contemporary and effective waste management standards in NH. This bill is a heartening proposal in our move toward source reduction, effective reuse and recycling, and composting protocols — and away from **the incalculable cost of landfills** to our environment, public health and community life.

It is with great hope that we encourage your support of HB 618, following the **foam ban bills passed in Maine, Vermont and Maryland** in 2019, and as multiple states across the nation have polystyrene foam ban legislation before them this year.

It is **unconscionable to continue to desecrate New Hampshire's landscapes and waterways with mountains of non-degradable trash** — and to squander our precious landfill space with throwaway packaging. We have the creativity and innovation at hand to develop better products and systems and need only **the will to commit to a sustainable future** for waste management. **This beautiful state is in our care.** HB 618 is a commitment we can make immediately to safeguard a healthy environment for generations to come.

**Please step into stewardship with a YES vote** to move HB 618 forward. What a hopeful statement of intent and will, if you advance this bill and advocate for it through the House, the Senate and on to the Governor's desk.

With **sincere thanks** for your consideration and for your work on behalf of our exceptional state,

Sarah Doucette  
Roger Doucette

Whitefield, NH  
603.960.4268

**Archived:** Wednesday, April 14, 2021 1:26:21 PM  
**From:** [nancy morrison](#)  
**Sent:** Monday, February 15, 2021 8:18:21 PM  
**To:** ~House Commerce Committee  
**Subject:** HB618...Good Night, Styrene  
**Importance:** Normal

---

Dear Chairman John Hunt and fellow Committee Members,

My husband and I are from Mont Vernon and Whitefield, NH. We are hoping you will carefully consider and pass HB 618, moving it forward to the Full House.

We understand that NH solid waste management is presently being scrutinized, and that an updated working plan is sorely needed to responsibly and sustainably minimize what we thoughtlessly toss into and onto our precious land.

Styrene and polystyrene products, such as Styrofoam, account for 30% of landfill space - 30%! And as it takes hundreds of years for these products to degrade, when more trouble occurs, they sit there taking up space. Which means we need more landfill space. Which means more mountains of unnecessary trash desecrating our NH land and skylines, and polluting the waters of our precious state.

There are viable alternatives. Recycled paper, lined paper, molded fiber, are a few. What we need in our state is the will to act!

Styrene products are cheaper up front, but the full high cost of containment, transportation and eventual NH pollution on the other end is an economic and environmental premium hidden from view.

Dear Committee Members, please take the time to consider what passing HB618 would mean to our landfills at this crucial time of updating our solid waste plan. I urge you to pass this bill.

Sincerely and Respectfully,  
Nancy Morrison  
Wayne Morrison  
Mont Vernon, NH  
603-930-8809

**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** [gail page](#)

**Sent:** Sunday, February 14, 2021 3:40:01 PM

**To:** ~House Commerce Committee

**Subject:** hb 618 testimony for Feb 16

**Importance:** Normal

---

To the House Commerce Committee

Re: HB 618 relative to the sale and distribution of polystyrene food service products

My name is Gail Page. I live in Concord and volunteer on Concord's Trails Subcommittee, part of the Conservation Commission although I am not representing either of these city entities today. Rather, I am here on behalf of myself as a concerned citizen of NH and a consumer.

I want to say that I am pleased that this bill has been introduced in NH and am in favor of its passage.

I am a member and supporter of several environmental organizations. As such I have become more and more alarmed at what harm is being done to the planet by our use of single-use, artificial products made of petroleum. These products have proliferated in human society to such an extent that finding a non-plastic version of what we seek is becoming impossible. Thinking of giving a party and avoiding dirty dishes? See the supply of paper products compared to the plastic or styrene ones on the shelves. There's no contest. The petroleum and plastics industries are reveling in the profits and want this to continue and grow.

HB 618 concerns polystyrene food containers and servers. According to a National Geographic article, water tested from the ocean off of the US, Europe, India, Japan and other locations, ALL contained derivatives of polystyrene, leached from the styrene dumped and floated into the oceans. This is not a naturally occurring substance. Another National Geographic article states that 80% of the ocean litter is made of plastic. Most of you have undoubtedly seen photos of sea birds, fish and sea animals that have mistaken this material for food or gotten entangled in it, leading to their death. We have to take this in the opposite direction and eliminate these hazardous materials. This bill is a good start.

As a volunteer city trail steward, I collect trash that has been left by the trails. 98% of it is plastic cups, plastic straws, plastic wrappers, foam trays, foam cups, and foam containers. Unsightly and, even if collected, part of the environment for millennia.

Polystyrene is relatively cheap to buy and use by grocers and restaurants but the cost to all of us earth residents, grocers and cooks included, is too high. Creation of them is polluting and clean-up of these discarded containers is costly. There are other, safer products available that handle the liquids well. The internet is loaded with alternatives.

The average shopper doesn't think about the tray his/her meat or food comes in but if polystyrene is replaced with a more environmentally friendly product, I believe people will notice and be proud of their grocer/restaurant for doing the right thing. As with most things, there is a savings in volume. The more these less harmful products are purchased, the more they will be produced and the lower the cost will become.

I fervently hope this committee will support this bill. Thank you.

**Archived:** Wednesday, April 14, 2021 1:26:21 PM

**From:** [John Tuthill](#)

**Sent:** Friday, February 12, 2021 10:21:00 AM

**To:** [~House Commerce Committee](#)

**Subject:** HB 618 / Styrofoam bill / Hearing on Tuesday, Feb. 16 10:30am / Draft letter to committee

**Importance:** Normal

---

Signed in to support on Friday, 2/12/21

**Archived:** Wednesday, April 14, 2021 1:37:12 PM

**From:** Jonathan Blakeslee

**Sent:** Monday, February 15, 2021 3:54:16 PM

**To:** ~House Commerce Committee

**Subject:** NH Bill HB618

**Importance:** Normal

**Attachments:**

[White Heron Letter\\_NH Bill HB618\\_2.15.21.jpg](#) 

---

Good afternoon Chairman Hunt and Distinguished Members of the House Committee on Commerce and Consumer Affairs,

Please see my attached testimony in support of HB618. Thank you again for taking time out of your busy schedule!! I really appreciate it.

Sincerely,

Jonathan Blakeslee

Owner / Cell 603-702-1581

 <https://www.whiteherontea.com>

[www.whiteherontea.com](https://www.whiteherontea.com)

**Archived:** Wednesday, April 14, 2021 1:37:12 PM  
**From:** [Christina Dubin](#)  
**Sent:** Monday, February 15, 2021 6:55:15 AM  
**To:** [~House Commerce Committee](#)  
**Subject:** HB618 testimony  
**Importance:** Normal

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Good Day, Chairman Hunt and Distinguished Members of the House Committee on Commerce and Consumer Affairs,

My name is Christina Dubin. I am a resident of Portsmouth, a graduate student at the University of New Hampshire, and a volunteer with Surfrider Foundation's NH Chapter. I am offering testimony in support of HB618.

I'll begin by briefly sharing a personal experience. Late this past summer, I spent a foggy afternoon at the beach with my daughter, chasing tiny lightweight balls of polystyrene foam flowing out of a tide pool and toward the ocean. She was so distressed that these microplastic fragments might be washed out to sea to be eaten by birds, fish or other animals, that we spent our time chasing them, instead of enjoying ourselves.

Styrene is classified as a "probable carcinogen" by the World Health Organization<sup>1</sup>. The heat from your coffee, or greasiness of takeout, can cause the foam container to leach styrene which poses a risk to your health. Expanded polystyrene (EPS) foam is toxic to produce and its chemical components bioaccumulate once in the body. Due to either food contamination or economics, EPS foodware is not recycled and easily fragments into tiny light-weight pieces, which are impossible to contain and will not biodegrade. All of these facts add up to a high social cost that is currently not factored in. Therefore EPS containers are cheap and typically thrown out after a single-use.<sup>2</sup>

New Hampshire would not be alone in taking action on this public and environmental health threat. Five other states have passed or enacted legislation banning the use of polystyrene foam foodware, even in the face of the pandemic. I'm proud to say that Portsmouth, my city of residence, has joined many other municipalities throughout the country by enacting a polystyrene foam foodware ban as of December 31, 2020.

This is not just a public and environmental health issue. New Hampshire's landfills are nearing capacity and both tipping and transport fees increasingly weigh on municipal budgets. The need for source reduction has never been greater and aptly sits at the top of our state's "Waste Management Hierarchy". Section 2 of 149-M states, "The general court declares its concern that there are environmental and economic issues pertaining to the disposal of solid waste in landfills and incinerators. It is important to reserve landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted". Under 149-M, municipalities are currently allowed to regulate solid waste without explicitly, laboriously or needlessly listing every waste

item. Polystyrene is an item we can reduce where any net impact is offset both by societal and waste disposal costs.

This is a small, common sense step in the right direction. I appreciate your time and consideration to favorably vote this bill out of committee.

Thank you,  
Christina Dubin

#### References

1. International Agency for Research on Cancer (IARC), Agents Classified by the IARC Monographs, Volumes 1–123. <https://monographs.iarc.fr/agents-classified-by-the-iarc/>, World Health Organization, Lyon, 2018.
2. Chandra, M., Kohn, C., Pawlitz, J. & Powell, G. (2016). Real Cost of Styrofoam. [https://greendiningalliance.org/wp-content/uploads/2016/12/real-cost-of-styrofoam\\_written-report.pdf](https://greendiningalliance.org/wp-content/uploads/2016/12/real-cost-of-styrofoam_written-report.pdf)



**Archived:** Wednesday, April 14, 2021 1:37:12 PM  
**From:** Susan Wiley  
**Sent:** Tuesday, February 16, 2021 12:15:53 PM  
**To:** ~House Commerce Committee  
**Subject:** HB618 Plastic Food Containers  
**Importance:** Normal

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Dear Honorable Representatives;

You have likely heard most of my points (and perhaps you have heard these) **EXCEPT** -

There are many children who do not have necessary education re. what can and can't go in the microwave. These children, often unsupervised, see adults eating from these containers and assume they can put them in the microwave - they do. There are also elderly folks who are often without fully functioning decision-making skills and do the same. You know the rest of the story! Poison is poison.

I live on the edge of the White Mountain National Forest. My road, Diamond Ledge Road in Sandwich, leads to the Forest. Most often when folks are coming out of the forest they see the end of the dirt road and there is a "let's get rid of this trash" some how seems to flash in front of their eyes. Any season of the year, this occurs. We would welcome you - should you wish to help us with our "clean up green up" days.

This TRASH cannot be re-cycled or re-used (tho' I do households who attempt to re-use against every health protection and safe food advice) and therefore the pollutions goes into the air with a stop in my lungs and your lungs.

Thank you for all you do for all of us. I appreciate your serious consideration of this Bill.

Sincerely,

Susan E. Wiley - 222 Diamond Ledge Road -Sandwich, NH 03227

**Archived:** Wednesday, April 14, 2021 1:25:01 PM

**From:** Jodi Grimbilas

**Sent:** Tuesday, February 16, 2021 6:12:08 AM

**To:** ~House Commerce Committee

**Subject:** HB 618 testimony of Omar Terrie from the American Chemistry Council

**Importance:** Normal

**Attachments:**

[New Hampshire HB618 - ACC Oppose.pdf](#) 

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Good Morning Mr. Chairman and Honorable Members of the Committee:

On behalf of the American Chemistry Council, I have attached a copy of Mr. Omar Terrie's testimony in opposition to HB 618 which will be heard later this morning.

Thanks and have a great day!

Jodi

***Jodi Grimbilas, President***

**J Grimbilas Strategic Solutions LLC**

(Office) 4 Park Street, Suite 101, Concord

(Mail) PO Box 233, Northwood, NH 03261

(Cell) 603-496-2638

[jodi@jgstrategies.com](mailto:jodi@jgstrategies.com)

**Archived:** Wednesday, April 14, 2021 1:25:01 PM

**From:** Carol Foss

**Sent:** Monday, February 15, 2021 9:34:26 PM

**To:** ~House Commerce Committee

**Subject:** testimony for HB 618

**Importance:** Normal

**Attachments:**

[HB618 polystyrene containers.docx.pdf](#) 

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Dear Committee Members,

Attached please find testimony on behalf of New Hampshire Audubon in support of HB 618.

Sincerely,  
Carol Foss

Carol R. Foss, Ph.D.  
Senior Advisor for Science and Policy

New Hampshire Audubon  
84 Silk Farm Road  
Concord, NH 03301

603-224-9909 x331

**Archived:** Wednesday, April 14, 2021 1:25:01 PM

**From:** Jonathan Blakeslee

**Sent:** Monday, February 15, 2021 3:54:16 PM

**To:** ~House Commerce Committee

**Subject:** NH Bill HB618

**Importance:** Normal

**Attachments:**

[White Heron Letter\\_NH Bill HB618\\_2.15.21.jpg](#) 

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Good afternoon Chairman Hunt and Distinguished Members of the House Committee on Commerce and Consumer Affairs,

Please see my attached testimony in support of HB618. Thank you again for taking time out of your busy schedule!! I really appreciate it.

Sincerely,

Jonathan Blakeslee

Owner / Cell 603-702-1581

 <https://www.whiteherontea.com>

[www.whiteherontea.com](https://www.whiteherontea.com)

**Archived:** Wednesday, April 14, 2021 1:25:01 PM

**From:** [Melissa Gates](#)

**Sent:** Saturday, February 13, 2021 12:19:03 PM

**To:** ~House Commerce Committee

**Subject:** Testimony in Support of HB618, AN ACT relative to the sale and distribution of polystyrene food service products

**Importance:** Normal

**Attachments:**

[HB618 Foam-Free NH House Testimony\\_SurfriderNH\\_Feb 2021.pdf](#) 

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Chairman Hunt, Vice Chairman Potucek, and Members of the House Commerce and Consumer Affairs Committee:

Please accept the attached testimony in support of HB618, an act relative to the sale and distribution of polystyrene food service products.

I look forward to speaking with you on this issue during the public hearing on Tuesday.

Thank you,  
Melissa

Melissa Gates | Northeast Regional Manager | [Surfrider Foundation](#) | 207.706.6378 | [mgates@surfrider.org](mailto:mgates@surfrider.org)  
[Pronouns](#): she · her · hers

*[I acknowledge](#) that I live and work within the stolen ancestral lands of past, present, and future [Abenaki](#) and [Wabanaki Confederacy](#) peoples. I am grateful for the place-based knowledge and ongoing stewardship of these lands and waters by Indigenous people and [will do all within my power](#) to be an effective ally in pursuits to equitably resolve issues related to water and territorial rights, sovereignty, and continued encroachment upon sacred sites. [Whose land are you on?](#)*

**Archived:** Wednesday, April 14, 2021 1:25:01 PM  
**From:** Susan Wiley  
**Sent:** Tuesday, February 16, 2021 12:15:53 PM  
**To:** ~House Commerce Committee  
**Subject:** HB618 Plastic Food Containers  
**Importance:** Normal

---

Dear Honorable Representatives;

You have likely heard most of my points (and perhaps you have heard these) **EXCEPT** -

There are many children who do not have necessary education re. what can and can't go in the microwave. These children, often unsupervised, see adults eating from these containers and assume they can put them in the microwave - they do. There are also elderly folks who are often without fully functioning decision-making skills and do the same. You know the rest of the story! Poison is poison.

I live on the edge of the White Mountain National Forest. My road, Diamond Ledge Road in Sandwich, leads to the Forest. Most often when folks are coming out of the forest they see the end of the dirt road and there is a "let's get rid of this trash" some how seems to flash in front of their eyes. Any season of the year, this occurs. We would welcome you - should you wish to help us with our "clean up green up" days.

This TRASH cannot be re-cycled or re-used (tho' I do households who attempt to re-use against every health protection and safe food advice) and therefore the pollutions goes into the air with a stop in my lungs and your lungs.

Thank you for all you do for all of us. I appreciate your serious consideration of this Bill.

Sincerely,

Susan E. Wiley - 222 Diamond Ledge Road -Sandwich, NH 03227

**Archived:** Wednesday, April 14, 2021 1:25:02 PM  
**From:** [nancy morrison](#)  
**Sent:** Monday, February 15, 2021 8:18:21 PM  
**To:** ~House Commerce Committee  
**Subject:** HB618...Good Night, Styrene  
**Importance:** Normal

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Dear Chairman John Hunt and fellow Committee Members,

My husband and I are from Mont Vernon and Whitefield, NH. We are hoping you will carefully consider and pass HB 618, moving it forward to the Full House.

We understand that NH solid waste management is presently being scrutinized, and that an updated working plan is sorely needed to responsibly and sustainably minimize what we thoughtlessly toss into and onto our precious land.

Styrene and polystyrene products, such as Styrofoam, account for 30% of landfill space - 30%! And as it takes hundreds of years for these products to degrade, when more trouble occurs, they sit there taking up space. Which means we need more landfill space. Which means more mountains of unnecessary trash desecrating our NH land and skylines, and polluting the waters of our precious state.

There are viable alternatives. Recycled paper, lined paper, molded fiber, are a few. What we need in our state is the will to act!

Styrene products are cheaper up front, but the full high cost of containment, transportation and eventual NH pollution on the other end is an economic and environmental premium hidden from view.

Dear Committee Members, please take the time to consider what passing HB618 would mean to our landfills at this crucial time of updating our solid waste plan. I urge you to pass this bill.

Sincerely and Respectfully,  
Nancy Morrison  
Wayne Morrison  
Mont Vernon, NH  
603-930-8809

**Archived:** Wednesday, April 14, 2021 1:25:02 PM  
**From:** [Christina Dubin](#)  
**Sent:** Monday, February 15, 2021 6:55:15 AM  
**To:** [~House Commerce Committee](#)  
**Subject:** HB618 testimony  
**Importance:** Normal

---

Good Day, Chairman Hunt and Distinguished Members of the House Committee on Commerce and Consumer Affairs,

My name is Christina Dubin. I am a resident of Portsmouth, a graduate student at the University of New Hampshire, and a volunteer with Surfrider Foundation's NH Chapter. I am offering testimony in support of HB618.

I'll begin by briefly sharing a personal experience. Late this past summer, I spent a foggy afternoon at the beach with my daughter, chasing tiny lightweight balls of polystyrene foam flowing out of a tide pool and toward the ocean. She was so distressed that these microplastic fragments might be washed out to sea to be eaten by birds, fish or other animals, that we spent our time chasing them, instead of enjoying ourselves.

Styrene is classified as a "probable carcinogen" by the World Health Organization<sup>1</sup>. The heat from your coffee, or greasiness of takeout, can cause the foam container to leach styrene which poses a risk to your health. Expanded polystyrene (EPS) foam is toxic to produce and its chemical components bioaccumulate once in the body. Due to either food contamination or economics, EPS foodware is not recycled and easily fragments into tiny light-weight pieces, which are impossible to contain and will not biodegrade. All of these facts add up to a high social cost that is currently not factored in. Therefore EPS containers are cheap and typically thrown out after a single-use.<sup>2</sup>

New Hampshire would not be alone in taking action on this public and environmental health threat. Five other states have passed or enacted legislation banning the use of polystyrene foam foodware, even in the face of the pandemic. I'm proud to say that Portsmouth, my city of residence, has joined many other municipalities throughout the country by enacting a polystyrene foam foodware ban as of December 31, 2020.

This is not just a public and environmental health issue. New Hampshire's landfills are nearing capacity and both tipping and transport fees increasingly weigh on municipal budgets. The need for source reduction has never been greater and aptly sits at the top of our state's "Waste Management Hierarchy". Section 2 of 149-M states, "The general court declares its concern that there are environmental and economic issues pertaining to the disposal of solid waste in landfills and incinerators. It is important to reserve landfill and incinerator capacity for solid wastes which cannot be reduced, reused, recycled or composted". Under 149-M, municipalities are currently allowed to regulate solid waste without explicitly, laboriously or needlessly listing every waste



item. Polystyrene is an item we can reduce where any net impact is offset both by societal and waste disposal costs.

This is a small, common sense step in the right direction. I appreciate your time and consideration to favorably vote this bill out of committee.

Thank you,  
Christina Dubin

#### References

1. International Agency for Research on Cancer (IARC), Agents Classified by the IARC Monographs, Volumes 1–123. <https://monographs.iarc.fr/agents-classified-by-the-iarc/>, World Health Organization, Lyon, 2018.
2. Chandra, M., Kohn, C., Pawlitz, J. & Powell, G. (2016). Real Cost of Styrofoam. [https://greendiningalliance.org/wp-content/uploads/2016/12/real-cost-of-styrofoam\\_written-report.pdf](https://greendiningalliance.org/wp-content/uploads/2016/12/real-cost-of-styrofoam_written-report.pdf)

**Archived:** Wednesday, April 14, 2021 1:25:02 PM  
**From:** [Save Forest Lake](#)  
**Sent:** Saturday, January 30, 2021 7:25:10 AM  
**To:** ~[House Commerce Committee](#)  
**Subject:** Please Support HB618  
**Importance:** Normal

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Good Morning NH House Commerce and Consumer Affairs Committee Members:

I am writing to request that you support HB618, which calls for the end of the use of polystyrene food packaging products in NH by 2022. Let's face it, NH has a solid waste problem, and I would certainly know in that as I am helping in the effort to stop the proposed landfill development next to Forest Lake State Park in Dalton, NH. Hopefully you have read the 2019 Legislative Report on Waste and Recycling. In that report, landfill capacity was highlighted, confirming that NH has plenty of existing capacity for NH-generated waste. However, we need to reduce the amount of waste we generate as a society. Polystyrene foam packaging is not recyclable, thus, it is another product destined to take up precious landfill capacity. We have failed miserably as a state relative to the waste-reduction goals set forth in the 2003 Solid Waste Plan, and eliminating polystyrene foam packaging from the waste stream would be a positive step in the right direction. We cannot continue to kick the can down the road.

As a veteran and common-sense, non-party affiliated conservative, I strongly feel that a bill like this should be embraced by both sides of the aisle as we need to develop commonsense strategies to protect our state's natural resources, which would include landfill capacity. I hope you will support this bill in committee and I hope you will support HB177, which calls for a 2-mile setback for the siting of a landfill next to a NH State Park. Who in their right mind would ever think such a thing could possibly happen? Well, it is in the North Country and it could happen elsewhere as well. We need to protect our state parks, a most-valuable economic driver for the state economy and tourism industry.

Thank You!

Jon Swan  
25 Cashman Rd  
Dalton, NH 03598  
(603) 991-2078  
Founder, [Save Forest Lake](#)  
[#StopNorthernTrash!](#)

*Do not allow this proposed development to scar the beautiful landscape of the North Country for generations to come*



February 16, 2021

Chairman Hunt, Vice Chairman Potucek, and Distinguished Members of the House Commerce and Consumer Affairs Committee:

The Surfrider Foundation New Hampshire Chapter offers this testimony in strong support of HB618 to ban polystyrene foam foodware in New Hampshire.

While styrene is naturally occurring and safe for consumption in modest amounts, polystyrene (PS) is a type of plastic manufactured from fossil fuels and synthetic chemicals that is created by chemically linking high concentrations of molecules of the compound styrene into long chains. PS is commercially available as both a rigid form and after it has been expanded into a foam by the addition of gas bubbles. Colloquially, such expanded polystyrene (EPS) is often referred to as Styrofoam, which like Kleenex, is a company brand name that has been applied to inclusively describe all products made using EPS.

Most human health concerns around the use of PS and EPS in food service items stem from its manufacture and worker safety, and the ingestion of residual components that remain in finished materials via toxic transfer into food or drink to which it comes into contact.<sup>1-4</sup>

Styrene concentrations detected in food are generally below values that would cause acute health effects. However, significant concern remains regarding long-term, low-level exposures. Styrene is "reasonably anticipated to be a human carcinogen" by the US National Toxicology Program.<sup>5</sup> In 2018, the World Health Organization's International Agency for Research on Cancer (IARC) reclassified styrene from Group 2B "possibly carcinogenic" to Group 2A "probably carcinogenic."<sup>6</sup> These and similar assessments are based on extensive reviews of available scientific research and are regularly updated in response to new evidence.

Additionally, the World Health Organization has established a guideline value of 0.02 parts per million (ppm) for styrene in drinking water.<sup>7</sup> The US EPA has set a somewhat higher maximum contaminant level (MCL) for styrene in public water systems, which is enforceable to a standard at 0.1 ppm.<sup>8</sup> These values are reasonable starting benchmarks for considering what might be "safe" concentrations for repeated, long-term exposures for human populations.

The analytical methods for detecting styrene are well-established and highly sensitive. From published reports, it is clear that "food grade" PS contains readily quantifiable amounts of styrene and that this styrene can be leached into food products.<sup>3</sup> The amount of residual styrene in PS varies widely depending on the quality and source of the material, but is limited to less than 5000 ppm by current federal regulations.<sup>9</sup> Similarly, the amount of styrene extracted into contained food or drink depends on several factors and appears to be maximized by high temperatures, food or drink with high fat content, increasing contact times, and containers with large surface area relative to volume.<sup>10, 11</sup>

A number of surveys on commercial food products packaged in PS have consistently shown maximum styrene levels on the order of 0.1 to 0.2 ppm, which are greater than the EPA limits

for public drinking water.<sup>3, 12</sup> It should be noted that most samples analyzed had significantly lower values. For instance, in a 1983 UK study, only 23% of foods sampled had styrene levels above 0.01 ppm.<sup>12</sup>

However, another study showed that 200 mL of boiling water poured into certain 250 mL EPS cups and allowed to sit capped for 60 minutes extracted an average of 0.017 ppm of styrene, approaching the WHO guidance level.<sup>11</sup> This situation is analogous to the dispensing of a hot beverage such as tea or coffee into a disposable EPS takeout cup. Therefore, we know that under reasonable use conditions, it is possible for PS containers to transfer enough styrene into food or drink to exceed the regulatory limits and/or safety guidance for drinking water. Uncertainty in assessing the risks of low-dose, long-duration chemical exposures is cause for a degree of conservatism to protect human health.

We also know that the amount of plastic debris in the ocean is truly staggering. A 2015 study published by the international journal *Science* estimates that *17 billion pounds* of plastic marine debris enters the ocean annually at the hands of only 192 countries with coastal access.<sup>13</sup>

Abigail Barrows, microplastics principal investigator for Adventure Scientists, reported that a “randomly taken 1 liter of surface water sample from Maine marine or freshwater environments average 3 pieces of microplastics.”<sup>14</sup> She notes what we know and science categorically backs-up: source reduction for this type of pollution is key in addressing the health of our waters.

Because it is lightweight and buoyant, we know that EPS waste is a huge environmental detriment, as it breaks apart with little provocation and is easily swept from streets, through storm drains, and into the waterways. Foam packaging quickly becomes microplastic and embeds itself in soils and waters where comprehensive cleanup is impossible.

We know that EPS degrades water quality with toxins and injures, kills and contaminates sea life; often mistaken for food, plastics that are ingested cause significant health detriments to marine creatures, often leading to death.<sup>15</sup> For humans who eat sea life, significant health risks are imposed from plastic particulates inherent in those animals that are then subsequently ingested.

We also know that plastic debris litters our environment, beaches and waters, not only wreaking havoc on the species who rely upon a clean environment to live but also reducing its appeal to residents and tourists and requiring continual and costly “cosmetic” cleanup, a process which often exacerbates the problem of breaking down EPS into tiny particulates.

Recreation and tourism is one of the largest contributing sectors to New Hampshire’s ocean economy;<sup>16</sup> therefore we know that a healthy ocean and coastal ecosystem is vital for the health of our environment, our quality of life, and our economy. HB618 offers New



Hampshire the opportunity to take action now – just like Vermont, Maine, Maryland, New York, New Jersey, and all the counties of Hawaii have done. Multiple municipalities ban EPS foodware, and several states are considering legislation this session to mitigate this needless yet pervasive, highly toxic material.

A common concern of legislators when considering a ban on cheap, disposable products is the fiscal impact to potentially affected business owners. Fortunately, we have seen no harmful long term impacts to businesses in Freeport or Portland, Maine, and food service establishments there can attest to the fact that where bans on this toxic foodware have been in effect for some time, banning EPS has not bankrupted them nor been causative of significant negative financial stress.

To truly change consumer behaviors and generate less waste, we know we must move away from single-use items, and fortunately, more sustainable and less risky alternatives to disposable EPS food service wares in the way of reusable goods are readily available and already widely in use, at equitable cost and inventory availability to EPS foam foodware.<sup>17</sup>

We also know that reusable foodware is as COVID-safe or more safe than single-use plastic and EPS foam foodware, which more than 100 of the world's leading health practitioners and scientists have confirmed.<sup>18</sup>

**We also know that EPS food containers are not readily recyclable, and regardless, that used food containers cannot be recycled at all, anywhere, because they are too tainted with food waste to be processed.**<sup>19</sup> Therefore, we know that recycling is not the answer.

We also know that the petrochemical plants needed to produce toxic chemicals and EPS foam foodware are disproportionately impacting black communities and communities of color. In fact, **race and not economic status or site-specific suitability is the number one indicator for the siting of these plants, rendering marginalized communities in the United States as ground zero for bearing the brunt of the most toxic pollution from EPS** and single-use plastic production while other communities, like those in New Hampshire, can maintain the status quo rather than shifting away from toxic single-use foodware and toward more sustainable options that are readily available.<sup>20</sup>

From EPS, straw, and checkout bag bans to fee regulations for single-use items, the consumer paradigm is shifting across the globe toward reuse, and communities all across the world are rising to the occasion to demand a shift in laws, products used and extended producer responsibility for manufacturers and businesses who distribute those toxic, environmentally detrimental goods to customers.

Indeed, our New Hampshire city of Portsmouth has advanced a citywide ban of foam foodware that took effect on 12/31/20, and multiple New Hampshire municipalities are considering following suit. HB618 is our opportunity to provide standardization of business practices by banning EPS foam foodware statewide, protecting the health and safety of our citizens, tourists, wildlife, waters, and environment.

For our health, for environmental justice, for the ocean, waves & beaches, and for the environment – the Surfrider Foundation New Hampshire Chapter urges you to advance this bill favorably.

Thank you for your consideration.

Sincerely,



Melissa Gates  
Northeast Regional Manager  
Surfrider Foundation

#### REFERENCES

1. W. Tang, I. Hemm and G. Eisenbrand, *Toxicology*, 2000, 144, 39-50.
2. M. J. Holmes, A. Hart, P. Northing, P. K. T. Oldring, L. Castle, D. Stott, G. Smith and O. Wardman, *Food Addit. Contam.*, 2005, 22, 907-919.
3. J. R. Withey, *Environ. Health Perspect.*, 1976, 17, 125-133.
4. Agency for Toxic Substances and Disease Registry (ATSDR), *Toxicological Profile for Styrene*, US Department of Health and Human Services, Atlanta, GA, 2010.
5. National Toxicology Program (NTP), *Report on Carcinogens, Fourteenth Edition*. <https://ntp.niehs.nih.gov/go/roc14/>, U.S. Department of Health and Human Services, Public Health Service, Research Park Triangle, NC, 2016.
6. International Agency for Research on Cancer (IARC), *Agents Classified by the IARC Monographs, Volumes 1–123*. <https://monographs.iarc.fr/agents-classified-by-the-iarc/>, World Health Organization, Lyon, 2018.
7. *Guidelines for drinking-water quality: fourth edition incorporating the first addendum*, World Health Organization (WHO), Geneva, 2017.
8. *National Primary Drinking Water Regulations* [https://www.epa.gov/sites/production/files/2016-06/documents/npwdr\\_complete\\_table.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf), EPA 816-F-09-004, Environmental Protection Agency (EPA);, Washington, DC, May 2009.
9. *Polystyrene and rubber-modified polystyrene*. 21 C.F.R. § 177.1640, Government Publishing Office, 2018.
10. M. Khaksar and M. Ghazi-Khansari, *Toxicol. Mech. Method.*, 2009, 19, 257-261.
11. M. Ahmad and A. S. Bajahlan, *J. Environ. Sci.*, 2007, 19, 421-426
12. J. Gilbert and J. R. Startin, *J. Sci. Food Agric.*, 1983, 34, 647-652.
13. Jenna R. Jambeck, Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, and Kara Lavender Law, "Plastic Waste Inputs from Land Into Water." *Science* 13 Feb. 2015: 768-771.
14. Report to be published in 2017; for more information, email: [abby@adventurescientists.org](mailto:abby@adventurescientists.org)



15. *The EPA National Human Adipose Tissue Survey for 1986 identified styrene residues in 100% of all samples of human fat tissue taken in 1982 in the US. A 1988 survey published by the Foundation for Advancements in Science and Education also found styrene in human fatty tissue with a frequency of 100%*

16. <http://www.oceaneconomics.org/market/ocean/oceanecon.asp>

17. See Maryland's Fiscal Analysis:

[http://mgaleg.maryland.gov/2019RS/fnotes/bil\\_0005/sb0285.pdf](http://mgaleg.maryland.gov/2019RS/fnotes/bil_0005/sb0285.pdf)

18. <https://storage.googleapis.com/planet4-international-stateless/2020/06/26618dd6-health-expert-statement-reusables-safety.pdf>

19. [https://www1.nyc.gov/assets/dsny/docs/2017-05-12FoamDetermination\\_FINAL.pdf](https://www1.nyc.gov/assets/dsny/docs/2017-05-12FoamDetermination_FINAL.pdf)

20. <https://www.nrc.gov/docs/ML1310/ML13109A339.pdf>



February 16, 2021

The Honorable John Hunt  
House Commerce and Consumer Affairs Committee  
Room 302, Legislative Office Building  
Concord, NH 03301

#### STATEWIDE OFFICES

84 Silk Farm Road  
Concord, N.H. 03301  
PHONE 603-224-9909  
FAX 603-226-0902  
nha@nhaudubon.org  
www.nhaudubon.org

#### REGIONAL CENTERS

##### MASSABESIC CENTER

26 Audubon Way  
Auburn, N.H. 03032  
PHONE 603-668-2045  
FAX 603-668-3796

##### MCLANE CENTER

84 Silk Farm Road  
Concord, N.H. 03301  
PHONE 603-224-9909  
FAX 603-226-0902

##### NEWFOUND CENTER

50 North Shore Road  
P.O. Box 142  
Hebron, N.H. 03241  
PHONE 603-744-3516  
FAX 603-744-1090

**Re: Support for House Bill 618 relative to the sale and distribution of polystyrene food service products.**

Dear Chair Hunt and Members of the House Commerce and Consumer Affairs Committee:

Thank you for this opportunity to provide testimony regarding HB 618 on behalf of NH Audubon. We are a statewide conservation organization dedicated to protecting New Hampshire's environment for wildlife and for people. We support this bill, which would ban the sale and distribution of polystyrene food service products.

Unlike other materials used to manufacture food service products, polystyrene, popularly known as "styrofoam," cannot be recycled by municipal curb-side recycling programs. As a result, food containers made of this material either wind up in landfills as contamination in recycling bins. Since other materials, including cardboard products and recyclable plastics, are available for the same purposes, the benefits of banning polystyrene containers far outweigh any costs.

Further, we strongly encourage the Committee to amend this bill to include bait containers. For decades, polystyrene bait containers have been discarded by both freshwater and saltwater fisherfolk, littering New Hampshire's streams, rivers, lakes, and coastal shorelines. As is the case with food service products, alternative, fiber-based containers are readily available as substitutes, and would soon decompose if left in the environment.

We urge you to add bait containers to the ban and vote HB 618 Ought to Pass.

Sincerely,

Carol R. Foss  
Senior Advisor for Science and Policy



## Sunlight Converts Polystyrene to Carbon Dioxide and Dissolved Organic Carbon

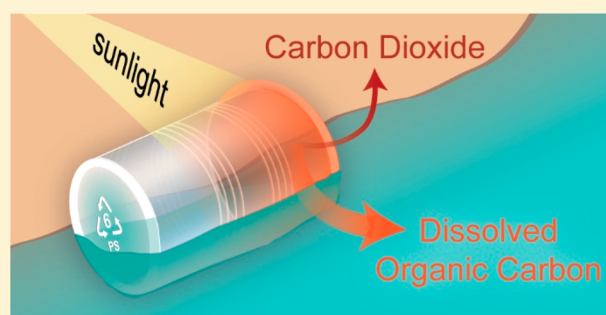
Collin P. Ward,<sup>\*,†</sup> Cassia J. Armstrong,<sup>†</sup> Anna N. Walsh,<sup>†,‡</sup> Julia H. Jackson,<sup>†</sup> and Christopher M. Reddy<sup>†</sup>

<sup>†</sup>Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543, United States

<sup>‡</sup>Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, United States

### S Supporting Information

**ABSTRACT:** Numerous international governmental agencies that steer policy assume that polystyrene persists in the environment for millennia. Here, we show that polystyrene is completely photochemically oxidized to carbon dioxide and partially photochemically oxidized to dissolved organic carbon. Lifetimes of complete and partial photochemical oxidation are estimated to occur on centennial and decadal time scales, respectively. These lifetimes are orders of magnitude faster than biological respiration of polystyrene and thus challenge the prevailing assumption that polystyrene persists in the environment for millennia. Additives disproportionately altered the relative susceptibility to complete and partial photochemical oxidation of polystyrene and accelerated breakdown by shifting light absorbance and reactivity to longer wavelengths. Polystyrene photochemical oxidation increased approximately 25% with a 10 °C increase in temperature, indicating that temperature is unlikely to be a primary driver of photochemical oxidation rates. Collectively, sunlight exposure appears to be a governing control of the environmental persistence of polystyrene, and thus, photochemical loss terms need to be included in mass balance studies on the environmental fate of polystyrene. The experimental framework presented herein should be applied to a diverse array of polymers and formulations to establish how general these results are for other plastics in the environment.



### INTRODUCTION

Polystyrene (PS) was the first synthetic polymer detected in the euphotic zone of the ocean in the 1970s,<sup>1</sup> and it is routinely detected in the environment today.<sup>2,3</sup> Tens of millions of tonnes are produced per year, accounting for 6% of the current global plastic market share.<sup>4</sup> PS is used in a variety of consumer and industrial products, including food containers, protective packaging, and building materials. Despite widespread use of PS-based goods and detection of PS in the environment, environmental lifetimes of PS are poorly constrained.

The common assumption by leading international governmental agencies that guide policy is that polystyrene persists in the environment for millennia.<sup>4–8</sup> For example, a 2018 United Nations Environment Programme report states that PS “can take up to thousands of years to decompose”.<sup>7</sup> Presumably, the scientific basis for the stated lifespan is the resistance of PS to microbial respiration.<sup>7</sup> Recalcitrance of PS to microbial respiration is due largely to its energetically unfavorable aromatic backbone (75% aromatic carbon by mass) and high molecular weight (tens to hundreds of thousands of Daltons).<sup>9–11</sup> For example, in one study that used the most sensitive approach available (i.e., <sup>14</sup>C-labeled PS), microbial

respiration of PS was too slow to quantify throughout month-long incubations, leading the authors to conclude that “numerous heterogeneous microbial communities failed to affect biodegradation of the plastic tested”.<sup>6</sup>

While the aromatic backbone of PS hinders microbial attack, it absorbs natural sunlight, resulting in a suite of photochemical oxidation pathways.<sup>12–21</sup> Previous work has focused on changes to the physical properties of PS, demonstrating that sunlight exposure promotes fragmentation into smaller particles.<sup>12–18</sup> Others have reported that sunlight partially oxidizes PS, yielding oxygenated breakdown products that are distinct from parent compounds.<sup>12,13,16–21</sup> However, the rates and controls of partial photo-oxidation of PS are poorly characterized. Although complete photochemical oxidation of organic carbon to carbon dioxide (CO<sub>2</sub>) is a well-documented pathway,<sup>22,23</sup> most reports assume that only microbes are capable of completely oxidizing PS to CO<sub>2</sub>,<sup>4–8</sup> and the

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susceptibility of PS in sunlit environments to conversion to CO<sub>2</sub> is unknown.

Here, we determined how the optical properties, relative susceptibility to complete and partial photo-oxidation, and wavelength and temperature dependence of photo-oxidation vary for five PS samples. Our results demonstrate that sunlight can completely oxidize PS to CO<sub>2</sub> and partially oxidize PS to dissolved organic carbon (DOC). Time scales of these photo-oxidation pathways are orders of magnitude faster (decadal to centennial) than microbial respiration (millennia), indicating that sunlight exposure is likely a governing factor for the environmental fate of PS.

## MATERIALS AND METHODS

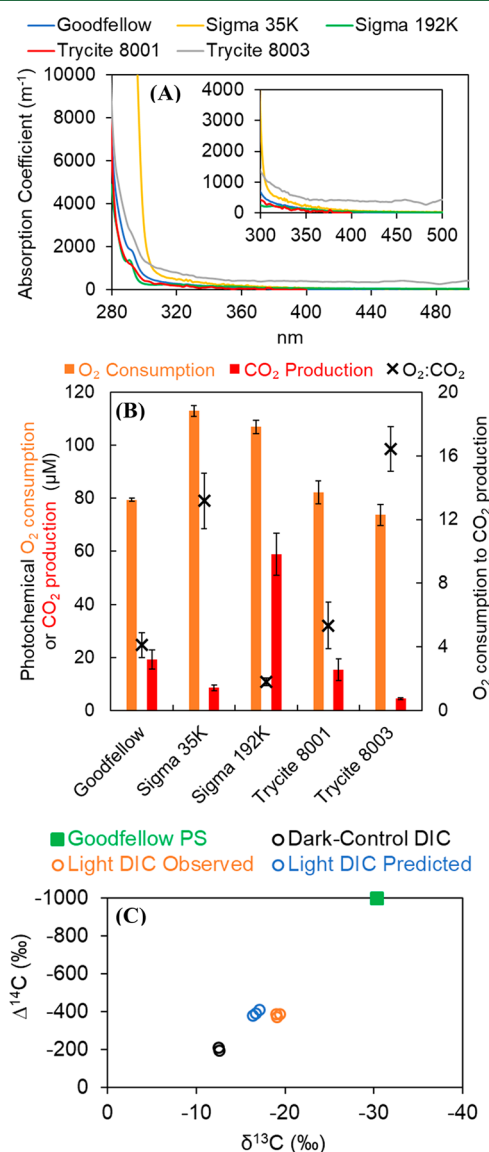
Five PS samples were used in this study: Goodfellow, Sigma 35 K, Sigma 192 K, Trycite 8001, and Trycite 8003 (Table S1). All samples are commercially available, vary in their physical and chemical properties (e.g., morphology, thickness, additive content), and are described in detail in the Supporting Information, Section 1.1.

**Experimental Approach.** Ultraviolet and visible light absorbance by the PS samples was measured using a PerkinElmer Lambda 650s spectrophotometer equipped with a 150 mm integrating sphere (Supporting Information, Section 1.2). Complete and partial photochemical oxidation of PS was quantified following previously described approaches (Supporting Information, Section 1.3).<sup>24–26</sup> Briefly, all experiments were conducted in an Atlas XLS+ solar simulator equipped with a long-arc Xe lamp and a daylight filter (Ametek Inc.). Irradiance was quantified using a NIST-calibrated spectral radiometer (StellarNet, Inc.). On average, simulated sunlight was 3- to 10-fold greater than natural sunlight at 0° and 50° N, respectively. These latitudes were chosen for reference because they encompass the mouths of the 10 rivers that are currently estimated to export 90% of the plastic waste to the oceans (Figure S1, Table S2).<sup>27</sup>

**Analysis.** Photochemical CO<sub>2</sub> production was quantified as the light minus dark difference in dissolved inorganic carbon concentration (AS-C3 DIC analyzer; Apollo SciTech, Inc.). Oxygen consumption was quantified as the dark minus light difference in dissolved oxygen concentration using membrane inlet mass spectrometry (Bay Instruments, Inc.). DOC was operationally defined as organic carbon that passes through a precombusted GF/F filter (nominal 0.7 μm pore size, Whatman) and quantified as CO<sub>2</sub> after high-temperature combustion using a Shimadzu 5000A TOC analyzer.<sup>28</sup> Calculations for half-lives of complete and partial photo-oxidation are described in the Supporting Information, Section 1.4. For simplicity, half-lives are referred to as lifetimes or lifespans. Natural abundance <sup>14</sup>C and <sup>13</sup>C measurements were conducted at the National Ocean Sciences Accelerator Mass Spectrometry facility (NOSAMS; Supporting Information, Section 1.5). Wavelength dependence was determined using a Xe-KiloArc system equipped with a monochromator for waveband tuning (Horiba Scientific, Inc.; Supporting Information, Section 1.6). Elemental analysis for C, H, N, O, and S of PS was conducted by Midwest Laboratories (Supporting Information, Section 1.7). Uncertainty of all measurements is described in the figure captions.

## RESULTS AND DISCUSSION

**Light Absorption by Polystyrene.** Three PS samples (Goodfellow, Sigma 192 K, and Trycite 8001) shared absorption spectra characteristics of "pure" PS,<sup>29</sup> light absorption decayed exponentially across the UV-B and UV-A region and was undetectable in the visible region (Figure 1A). Sigma 35 K, a product marketed as a "pure" material, had a distinct UV-B absorbance profile indicating that it contains an additive (Figure 1A). The composition and concentration of the additive is unknown, but it is common for commercially



**Figure 1.** (A) UV–visible absorbance spectrum of five PS samples. Inset shows appreciable absorbance at visible wavelengths (>400 nm) by Trycite 8003, high-impact grade PS that contains black rubber additives. (B) Photochemical O<sub>2</sub> consumption and CO<sub>2</sub> production measurements for the five PS samples. The “x” symbol represents the ratio of O<sub>2</sub> consumption to CO<sub>2</sub> production. (C) Natural abundance radiocarbon (Δ<sup>14</sup>C) and stable carbon (δ<sup>13</sup>C) isotope composition of dissolved inorganic carbon (DIC) in dark-control and light-exposed treatments. Initial isotopic composition of PS is presented as filled green squares (N = 3). Predicted values were calculated using measured DIC photoproduction and the initial isotopic composition of PS.

available plastics to contain additives that can alter optical and photochemical properties.<sup>16</sup> In contrast to Sigma 35 K, in which the additive was undisclosed, the distinct visible light absorption by Trycite 8003 is due to black rubber particles that are intentionally added to yield a more durable, high-impact grade PS (Figure 1A). The presence of black rubber additives is further evidenced by the 2-fold higher bulk sulfur content in Trycite 8003 relative to Trycite 8001, a difference likely attributed to the vulcanization process during rubber manufacturing (Table S3; Trycite 8003 =  $0.6 \pm 0.1\%$  S; Trycite 8001 =  $0.3 \pm <0.1\%$  S;  $\pm 1\text{SE}$ ,  $N = 3$ ; two-tailed, unpaired  $t$  test,  $P = 0.02$ ). The impact of additives on the photochemical properties of PS, including susceptibility to complete and partial oxidation and wavelength and temperature dependence, is unknown and the subject of the following sections.

**Complete Photochemical Oxidation of Polystyrene to CO<sub>2</sub>.** Complete photochemical oxidation of PS to CO<sub>2</sub> has previously been reported at 254 nm,<sup>30</sup> a waveband that does not reach Earth's surface due to attenuation by stratospheric ozone. In 1980, complete oxidation of PS by solar wavebands (i.e., greater than  $\sim 280$  nm) was initially hypothesized.<sup>20</sup> In the current study, we report the first direct evidence of complete oxidation of PS to CO<sub>2</sub> by solar wavebands. All five PS samples were converted to CO<sub>2</sub> by sunlight (Figure 1B). For example, when exposing PS to increasing durations of simulated sunlight (up to 72 h), DIC increased (Figure S2), indicating that PS was completely photo-oxidized to CO<sub>2</sub>.

Given that PS is produced using petroleum carbon (C) sources, complete oxidation of PS should shift the natural abundance <sup>14</sup>C content of DIC toward a petroleum-C signature (e.g.,  $\Delta^{14}\text{C} = -1000\%$ ,  $\delta^{13}\text{C} = -30$  to  $-20\%$ ). We validated this hypothesis experimentally. Consistent with a petroleum-C source, PS had a  $\Delta^{14}\text{C}$  of  $-1000 \pm <1\%$  and  $\delta^{13}\text{C}$  of  $-30.3 \pm <0.1\%$  (Figure 1C; Table S4;  $\pm 1\text{SE}$ ,  $N = 3$ ). As expected, DIC in dark-controls equilibrated with laboratory air was more modern and enriched in <sup>13</sup>C compared to PS (Figure 1C; Table S4; DIC  $\Delta^{14}\text{C} = -202 \pm 8\%$ , DIC  $\delta^{13}\text{C} = -12.6 \pm <0.1\%$ ,  $\pm 1\text{SE}$ ,  $N = 2$ ). Exposure to simulated sunlight increased DIC concentration by 32% and shifted DIC isotopic composition to values that were consistent with complete oxidation of PS (Figure 1C). Based on the measured DIC photoproduction and the isotopic composition of PS, we predicted the DIC  $\Delta^{14}\text{C}$  in the light-exposed treatment to be  $-394 \pm 10\%$ , statistically similar to observed values of  $-381 \pm 5\%$  ( $\pm 1\text{SE}$ ,  $N = 3$ , two-tailed, unpaired  $t$  test,  $P = 0.29$ ). This result confirms that PS in sunlit surface waters is completely oxidized to CO<sub>2</sub>.

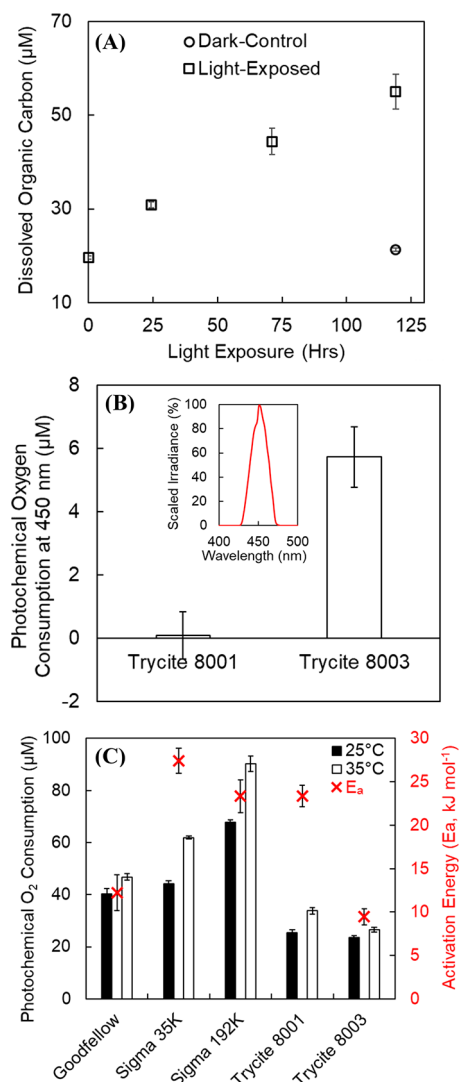
Unlike DIC  $\Delta^{14}\text{C}$ , our predicted and observed DIC  $\delta^{13}\text{C}$  values did not overlap (Figure 1C). We predicted a DIC  $\delta^{13}\text{C}$  value of  $-16.8 \pm 0.2\%$  but observed a significantly depleted value of  $-19.2 \pm 0.1\%$  ( $P = <0.001$ ). There are two plausible explanations for this discrepancy. First, the differences between predicted and observed could result from kinetic fractionation of  $\delta^{13}\text{C}$  during complete photo-oxidation. Such isotope effects have never been reported for any plastic but have been reported for other organic pollutants.<sup>31,32</sup> The photochemical  $\delta^{13}\text{C}$  isotope effect required to account for the difference between predicted and observed DIC  $\delta^{13}\text{C}$  values in the light-exposed treatment is  $-3.3 \pm 1.0\%$  ( $\pm 1\text{SE}$ ,  $N = 3$ ). A second interpretation is that PS has different intramolecular <sup>13</sup>C values. That is, the aromatic C in the PS backbone could be preferentially photo-oxidized to CO<sub>2</sub>, and the  $\delta^{13}\text{C}$  signature of

aromatic C could be more depleted compared to the  $\delta^{13}\text{C}$  signature of aliphatic C in the PS backbone.<sup>33</sup> However, the reactants in the PS production mechanism, kinetic fractionation of C during production, and resulting isotopic homogeneity across C positions of PS is unknown. Irrespective of the precise cause, the photochemical production of depleted DIC  $\delta^{13}\text{C}$  may explain field observations that "aged" plastics are more enriched in <sup>13</sup>C compared to unweathered plastics.<sup>34</sup>

**Partial Photochemical Oxidation of Polystyrene.** All five PS samples were partially oxidized by sunlight, an environmental process where oxygen is added to the C backbone to form distinct transformation products.<sup>24–26</sup> In all cases, photochemical O<sub>2</sub> consumption exceeded CO<sub>2</sub> production, yielding O<sub>2</sub>:CO<sub>2</sub> ratios greater than 1 (range 2–16; Figure 1B). Conservatively assuming 1 mol of O<sub>2</sub> is required per mol of CO<sub>2</sub> produced,<sup>25,26</sup> the excess O<sub>2</sub> consumed is presumably chemically incorporated into PS. Given that oxygenation often increases aqueous solubility,<sup>35,36</sup> we expected the DOC concentration to increase with irradiation of PS. Consistent with our hypothesis, DOC concentration nearly tripled after five days of simulated light exposure (Figure 2A). Similarly, previous studies have reported that irradiation of PS results in a complex array of lower molecular weight, water-soluble, partially photo-oxidized products.<sup>17,18</sup>

The relative importance of complete and partial photo-oxidation is influenced by the presence of additives in the polymer formulation. The three presumably "pure" PS samples, as determined by optical spectroscopy (Figure 1A; Goodfellow, Sigma 192 K, and Trycite 8001), exhibited relatively low photochemical O<sub>2</sub>:CO<sub>2</sub> molar ratios ranging from 2 to 5 (Figure 1B). In contrast, the additive-containing PS samples (Figure 1A; Sigma 35 K and Trycite 8003) had appreciably higher photochemical O<sub>2</sub>:CO<sub>2</sub> ratios ranging from 13 to 16 (Figure 1B). This finding indicates that additives have disproportionate effects on photochemical oxidation pathways. That is, two products made from the same base polymer likely have considerably different photochemical fates depending on their formulations (Table S5), adding to the complexity of determining the fate of plastics in the environment.

**Wavelength and Temperature Dependence of Polystyrene Photochemical Oxidation.** Given that additives shifted the PS absorption spectrum beyond the UV and into the visible region (Figure 1A), we tested the hypothesis that the wavelength dependence of PS photochemical oxidation shifted. Consistent with our hypothesis, oxidation at  $450 \pm 26$  nm was only detected for Trycite 8003 (Figure 2B; Trycite 8003 =  $5.7 \pm 0.6 \mu\text{M O}_2$ ; Trycite 8001 =  $0.1 \pm 0.4 \mu\text{M O}_2$ ;  $\pm 1\text{SE}$ ,  $N = 3$ ). This expansion of photochemical reactivity into the visible region has critical implications for photo-oxidation rates. Incident visible irradiance (400–700 nm) at Earth's surface is an order-of-magnitude higher than UV irradiance (280–400 nm). Furthermore, blue light at approximately 450 nm penetrates an order-of-magnitude deeper into the water column than UV light because it escapes absorption by chromophoric DOC. Together, additives will have disproportionate impacts on the rates of PS photo-oxidation at Earth's surface and at depth in the water column. This result suggests that environmental lifetimes of consumer and industrial plastics can be controlled by manipulating the additive content; a factor to be explored in the development of next-generation materials.



**Figure 2.** (A) Photochemical conversion of PS to operationally defined dissolved organic carbon (DOC). Error bars represent standard error from the mean ( $N = 2$ ). (B) Photochemical O<sub>2</sub> consumption of PS at 450  $\pm$  26 nm for Trycite 8001 versus Trycite 8003 ( $\pm$  full width at half-maximum). Error bars represent standard error from the mean ( $N = 3$ ). (C) Photochemical O<sub>2</sub> consumption at 25 and 35 °C under broadband light. Activation energy ( $\text{kJ mol}^{-1}$ ) was calculated from the Arrhenius equation. Error bars represent one standard error from the mean ( $N = 3$ ).

Temperature has previously been reported to be a determining factor in the photochemical degradation of plastics in the ocean, based on indirect lines of evidence.<sup>12</sup> This conclusion is surprising because photochemical reactions generally have weak temperature dependences, especially when compared to biological activity.<sup>37</sup> Therefore, we directly tested the temperature dependence of the five PS samples by quantifying photochemical O<sub>2</sub> consumption at 25 and 35 °C. For all PS samples, photochemical O<sub>2</sub> consumption was significantly higher at 35 °C compared to 25 °C (two-tailed, paired  $t$  test,  $P = <0.05$ ), with an average increase of  $27\% \pm 5\%$  (Figure 2B;  $\pm 1\text{SE}$ ,  $N = 5$ ). The mechanism of this temperature dependence is unknown. It is plausible that the reaction of photochemically generated reactive oxygen species with PS is slightly dependent on temperature, as has been reported for dissolved organic carbon.<sup>38,39</sup> Independent of the mechanism,

this weak temperature dependence is consistent with previous studies of organic carbon photochemical oxidation.<sup>37–39</sup> Moreover, biodegradation rates of synthetic polymers have been reported to increase by greater than 100%–300% when increasing temperature by 10 °C.<sup>40</sup> Consequently, temperature is unlikely to be a determining factor for the photochemical oxidation of PS; however, in cases where biological degradation is appreciable, temperature may be a determining factor.

**Environmental Implications.** When accounting for complete and partial photo-oxidation, the environmental lifetimes of PS are notably shorter than previously reported.<sup>4–8</sup> Assuming first-order kinetics and accounting for differences between simulated and natural irradiance from 0° to 50°N, average lifetimes of complete photochemical oxidation of Goodfellow and Trycite 8003 are on the order of centennial time scales (Table S5; Goodfellow  $t_{1/2} = \sim 300$  years, Trycite 8003  $t_{1/2} = \sim 450$  years). Using the same approach, average lifetimes of partial photochemical oxidation of Goodfellow and Trycite 8003 are on the order of decadal time scales (Table S5; Goodfellow  $t_{1/2} = \sim 50$  years, Trycite 8003  $t_{1/2} = \sim 10$  years). These decadal and centennial photochemical lifetimes challenge the commonly held assumption that PS persists in the environment for millennia,<sup>4–8</sup> an assumption presumably based on the recalcitrance of PS to microbial attack.<sup>9</sup> Consequently, sunlight exposure, rather than recalcitrance to microbial degradation, is the governing control of the environmental lifetime of PS.

Multiple variables are not considered in these lifetime calculations that could shift our estimates to be shorter or longer. For example, it is unknown how the light absorption properties of PS change with increasing time in the environment (e.g., yellowing or fouling by organics and biofilms) or how the residence time of PS in sunlight environments varies. Accounting for these variables presumably could lead to longer lifetimes. Alternatively, the amount of PS completely oxidized to CO<sub>2</sub> may be underestimated. Given that organic carbon must be dissolved to be respired by microbes,<sup>41</sup> we hypothesize that the DOC produced from the partial photo-oxidation of PS is more labile to microbial respiration than unweathered PS. Such coupled photochemical and biological breakdown of PS has been reported to occur in terrestrial ecosystems,<sup>10,11</sup> but the viability of this mineralization pathway in aquatic ecosystems is unknown.

Nevertheless, these initial environmental lifetime estimates suggest that PS does not persist in the environment for millennia, an assumption commonly made by leading international governmental agencies that steer policy.<sup>4–8</sup> Future work should expand the experimental framework presented herein to a diverse array of polymer types<sup>17,42</sup> and formulations to establish how general these results are for other plastics in the environment. Consequently, photochemical loss terms should be incorporated into global fate models, which we expect will (i) refine estimates of the environmental lifetime of plastics, (ii) improve our understanding of the amount of plastics on land and in the ocean,<sup>43</sup> (iii) inform assessments of the risks associated with plastic pollution, and (iv) help frame evidence-based policy.

## ■ ASSOCIATED CONTENT

### 5 Supporting Information

The Supporting Information is available free of charge on the ACS Publications website at DOI: [10.1021/acs.estlett.9b00532](https://doi.org/10.1021/acs.estlett.9b00532).

Descriptions of PS samples, optical properties of PS, characterization of the complete and partial photo-oxidation of PS, calculations of half-lives of complete and partial photo-oxidation, radiocarbon and stable carbon isotope experiments, wavelength dependence experiments, and elemental analysis of PS. Figures of incident irradiance and complete photo-oxidation time-series. Tables of complete and partial photo-oxidation of PS, incident irradiance, elemental composition of PS,  $^{14}\text{C}$  and  $^{13}\text{C}$  experimental results, and lifetime calculations. (PDF)

## ■ AUTHOR INFORMATION

### Corresponding Author

\*Tel: 508-289-2931. E-mail: [cward@whoi.edu](mailto:cward@whoi.edu).

### ORCID

Collin P. Ward: [0000-0003-2979-0280](https://orcid.org/0000-0003-2979-0280)

Christopher M. Reddy: [0000-0002-7814-2071](https://orcid.org/0000-0002-7814-2071)

### Notes

The authors declare no competing financial interest.

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**New Hampshire –COMMERCE AND CONSUMER AFFAIRS COMMITTEE– February 16,  
2021****1. HB618. Relative to the sale and distribution of polystyrene food service products–  
Oppose**

The American Chemistry Council's (ACC) Plastics Foodservice Packaging Group (PFPG) respectfully opposes HB618 which would prohibit the sale and use of polystyrene foam foodservice containers. ACC and its members strongly support efforts to reduce litter and marine debris; however, this legislation falsely assumes that alternatives to foam foodservice containers are environmentally preferable and could be recycled or composted. Before New Hampshire passes this legislation, it should carefully consider and analyze the impacts of alternatives, including increases in energy use and greenhouse gas emissions. New Hampshire should also establish recycling or composting for the alternatives or reject this legislation.

**Plastic Makers Are Working to Reduce Marine Litter and Reduce Waste**

ACC and its members take seriously the issue of litter and marine debris. To that end, ACC is working domestically and internationally with government officials, retailers, anti-litter groups and consumers to develop solutions to prevent litter and marine debris.

ACC and its members have committed to reusing, recycling or recovering all plastic packaging by 2040 and making all plastic packaging reusable, recyclable or recoverable by 2030. We have also announced Guiding Principles for Eliminating Plastic Waste<sup>1</sup> and Roadmap to Reuse<sup>2</sup> that include policies and practices to achieve our goals of 100% plastic reuse, recycling or recovery.

**Alternative Litter Will Increase More than Plastics Decline**

Thus, we strongly support reduction in marine litter and waste, but this legislation will not accomplish that objective because it fails to recognize that litter and improper waste management are independent of material type. New policies and practices should ensure that no waste, plastic or otherwise, ends up having a negative impact on the environment. A ban on the sale and use of polystyrene foam is unlikely to be effective in addressing litter. In fact, litter studies conducted following the enactment of bans have shown an increase in the litter of alternative materials that is greater than the decline in the banned material. This was a primary reason why the California Water Board rejected the use of bans as a compliance mechanism for waterborne trash reduction.<sup>3</sup>

**Alternatives Likely to Increase Environmental Impacts**

In addition to not accomplishing the goal of reducing litter, this legislation could increase greenhouse gas emissions, energy use and waste. All packaging leaves an environmental footprint regardless of the material type. Polystyrene foodservice packaging uses less

<sup>1</sup> <https://www.reuseplastics.org/advocacy/guiding-principles/>

<sup>2</sup> <https://www.reuseplastics.org/advocacy/the-roadmap-to-reuse/>

<sup>3</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/trash\\_control/docs/trash\\_sr\\_040715.pdf](http://www.waterboards.ca.gov/water_issues/programs/trash_control/docs/trash_sr_040715.pdf)

energy and resources to manufacture than comparable paper-based products, leaving a lighter footprint. For example, a polystyrene foam cup requires about 50% less energy to produce – and creates significantly fewer greenhouse gas emissions – than a similar coated paper-based cup with its corrugated sleeve.<sup>4</sup> Furthermore, these paper alternatives are generally not collected in community recycling programs. Thus, this legislation, through the switch to alternatives, is likely to increase environmental impacts.

### **Compostable Packaging Does Not Reduce Litter and Composting Infrastructure is Lacking**

It is also important to note that most compostable foodservice containers only “degrade” in a controlled composting environment – essentially a large industrial facility where temperatures can exceed 140 degrees. These composting facilities and collection of foodservice packaging are not readily available in New Hampshire, so these alternative products will likely end up in a landfill providing no environmental benefit. Therefore, so-called “biodegradable” containers do not degrade if littered alongside the road or deposited into a trash can, nor will they degrade if they make their way into a storm drain or other water body. Furthermore, the Oregon Department of Environmental Quality has found that compostable food service ware often has a larger (life time) environmental footprint than non-compostable items.<sup>5</sup> For example, compostable materials may require more fossil energy use and release more greenhouse gases than their non-compostable counterparts.

The Biodegradable Products Institute (BPI), a not-for-profit association of key individuals and groups from government, industry, and academia, seeks to educate manufacturers, legislators and consumers about the importance of scientifically-based standards for compostable materials which biodegrade in large composting facilities. BPI’s “Myths of Biodegradation” states:

**Myth:** Biodegradable products are the preferred environmental solution because waste simply biodegrades in the landfill.

**Reality:** Nothing biodegrades in a landfill because nothing is supposed to.<sup>6</sup>

ACC is helping develop new and innovative recycling programs nationwide; promoting industry-wide practices to contain plastic pellets; partnering with governments and conservationists to encourage recycling and discourage litter; working to educate children on the link between litter and marine health; working with the National Oceanic and Atmospheric Administration to advance scientific understanding of marine debris; and continuing to innovate and develop smaller, lighter packaging. More information about our activities to help reduce marine debris can be found at:

<http://www.marinedebrissolutions.com>.

### **Improved Recycling and Recovery Not Bans is the Answer**

ACC believes that reducing landfill disposal, marine debris and litter requires the implementation of a variety of tools. In addition to efforts that seek to increase recycling

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<sup>4</sup> [https://www.plasticfoodservicefacts.com/wp-content/uploads/2017/12/Peer\\_Reviewed\\_Foodservice\\_LCA\\_Study-2011.pdf](https://www.plasticfoodservicefacts.com/wp-content/uploads/2017/12/Peer_Reviewed_Foodservice_LCA_Study-2011.pdf)

<sup>5</sup> See <https://www.oregon.gov/deq/FilterDocs/compostable.pdf>

<sup>6</sup> See <http://www.bpiworld.org/Default.aspx?pageId=190439>



and improve solid waste collection infrastructure, opportunities to recover non-recycled plastics may be an option as well. An emerging set of technologies is allowing governments and businesses to convert non-recycled plastics into energy, fuels, and feed stocks, or raw materials for new manufacturing. A range of recovery technologies is being used to complement recycling in helping to divert more valuable post-use materials from landfills. For example, polystyrene foam can be converted back to raw materials for new polystyrene products. This technology is growing rapidly in the US.

ACC supports the goals of increased funding for recycling infrastructure and more efficient collection and sortation of material. ACC encourages the State of New Hampshire to consider promoting advanced recycling to further its recycling goals. Over the last three years, more than \$5 billion in investments have been announced to develop new plastics recycling facilities, including mechanical and advanced recycling. This new investment has the potential to serve new markets in coming months and years, and these facilities are expected to recycle up to 9 billion pounds of material per year.<sup>7</sup> Advanced Recycling Legislation has passed in Florida, Wisconsin, Georgia, Iowa, Tennessee, Texas, Ohio, Illinois, and most recently Pennsylvania.

Experts emphasize that improving waste management is the key to addressing marine debris. We would welcome an opportunity to work with you on those goals. Thank you in advance for considering our views.

For more information please contact Margaret Gorman at 518.432.7835 or [Margaret Gorman@americanchemistry.com](mailto:Margaret.Gorman@americanchemistry.com).

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<sup>7</sup> <https://www.reuseplastics.org/news/do-new-recycling-technologies-improve-plastics-sustainability>



February 16, 2021

Testimony of Brian Moran

Director of Government Affairs, New England Convenience Store & Energy Marketers Association

New Hampshire General Court

House Commerce and Consumer Affairs Committee

**HB 618 – An Act relative to the sale or distribution of polystyrene food service products.**

Chairman Hunt, Vice Chair Potucek, and Members of the Committee:

The New England Convenience Store & Energy Marketers Association (NECSEMA) represents convenience store and gasoline retailers, independent transportation fuel distributors, and the businesses which supply them. According to the National Association of Convenience Stores, there are almost 900 convenience stores in New Hampshire (655 of which sell motor fuels) that employ over 14,000 people.

As proposed, HB. 618 would prohibit by January 1, 2022 a food service business from selling or distributing a disposable food service product composed in whole or in part of polystyrene foam, unless specifically exempted.

**NECSEMA opposes HB 618.** As the convenience channel of retail has evolved toward more modern offerings, many c-stores have invested significantly in prepared and fresh foods. These investments include re-purposing their stores, buying expensive storage and food preparation equipment and complying with important health department and food safety requirements. According to the most recent National Association of Convenience Stores (NACS) *State of the Industry Report*, approximately 165 million customers go to c-stores each day and 83 percent of the items purchased are consumed within the first hour of purchase. Almost 25% being in the food category.

The ability to offer foam takeaway products to our customers is the safest alternative for them to consume many of our hot food service products. As mentioned above, 83% of the items bought in our stores are consumed within the first hour of purchase, and frequently done so in cars during a commute. Foam provides a safe container for them to enjoy our products.

Lacking foam, the alternative will create a dramatic increase in the use of plastic-lined paper cups, cardboard sleeves, and other less desirable practices such as double-cupping, or using a padding of napkins, to safely handle our products. Based on our significant investments in our stores to meet the needs of our customers who are “on the go”, and to provide quality products that consumers want in a manner they can safely enjoy it, we cannot support this ban.

Secondly, the proposed legislation requires every city and town to regulate, implement, and enforce these requirements. Thereby creating a patchwork of similar but likely different

1044 Central Street, Suite 203  
Stoughton, MA 02072  
(781) 297 – 9600

requirements, procedures, fines, and penalties associated with this prohibition. Complying with these differing requirements will be incredibly frustrating for retailers who operate businesses in multiple jurisdictions.

Lastly, the legislation exempts one of the largest uses of foam products, which appears to contradict the necessity for prohibiting these products. If the ban is necessary, should it not extend to all uses of these products? Otherwise, the expansive exceptions become inequitable and favor one use or industry over another.

Thank you for your thoughtful consideration of our positions on this matter.

Respectfully,

A handwritten signature in blue ink that reads "Brian P. Mu" followed by a horizontal line.

Director Government Affairs  
brian@necsema.net | 781-297-9600 x5

February 14, 2021

Dear Chairman Hunt and Distinguished Members of the House Committee on Commerce and Consumer Affairs,

My name is Tim Morgan and I'm a non-profit volunteer with the Surfrider Foundation New Hampshire Chapter residing in Grantham, NH. I'm submitting testimony in support of HB 618 *An Act relative to the sale and distribution of polystyrene food service products*.

Polystyrene food service products, or expanded polystyrene (EPS) foam, while very cheap to produce, is one of the more common types of trash found out in the environment. What makes it much worse than other litter is that it's very difficult to recycle, it absorbs other pollutants in the environment, and breaks down easily. Polystyrene is considered a possible carcinogen if ingested and releases toxins when burned, like a landfill. One small coffee cup can disintegrate into hundreds or thousands of small pieces and then end up in the ocean for small animals to ingest, potentially poisoning them and impacting the food chain all the way up to what we eat.

As a person who loves the ocean, surfing, paddle boarding, and boating, it's depressing how often I see a foam clamshell container or coffee cup on the beach, pushed up against the seawall at the boat ramp, or blowing across the parking lot and road. Enacting an EPS ban would be a small yet impactful step forward in becoming more sustainably focused and thinking about our future.

One of the biggest counter arguments against banning EPS would be the cost savings, especially in the economic downturn the pandemic brought on the restaurant industry. However, studies have shown replacing EPS with biodegradable/recyclable containers would only increase costs around eight cents. In a survey of 59 local restaurants by the Surfrider San Diego Chapter, only 17 said they use EPS, and only three percent of those said a ban would present an extreme hardship to their business.

Yes, EPS is very cheap and attractive to a struggling restaurant industry, but from a fiscal standpoint, there is increasing evidence that significant taxpayer dollars have been spent cleaning up EPS foam from the waterways, making the ban much more practical. Maine, Maryland and Vermont have already passed legislation banning EPS foam food service products as well as municipalities around the country including Portsmouth, and they are all showing promising results.

Please consider supporting this bill and being part of a small step forward making this our state and planet we live on a better place. Thank you for your time and effort.

Sincerely,

Tim Morgan  
44 Butternut Road  
Grantham, NH 03753

Chairman John Hunt and the Commerce and Consumer Affairs Committee  
Testimony of Rep. Judith Spang  
February 16, 2016  
**HB 618 Polystyrene Foam**

You have probably heard that we should never heat up food in a styrofoam container because toxins will be released into the food. Yet we buy hot beverages and hot prepared food in these containers routinely. After all, that's a principle reason why Styrofoam is used--- it retains heat and cold.

Styrene, the toxin from which Styrofoam is made, has indeed been found to leech into food. Foam cups lose weight each time they are used, as we ingest the styrene. Volatile styrene monomers are found in shells of eggs stored for two weeks in polystyrene containers, and dishes cooked with these eggs contain seven times more ethyl benzene and styrene than those not packed in these containers.

The manufacturing of polystyrene is the 5<sup>th</sup> largest creator of hazardous waste, both liquid and solid.

Styrofoam products comprise an obnoxious amount of the litter we see along roadways and beaches. Others who will be testifying will tell you about the widespread styrofoam debris that so readily breaks into smaller wind -and water-carried pieces, and how these cause cancer and digestive problems for wildlife. It can't be readily composted or recycled ...and if burned, it releases 57 chemical byproducts.

In 2017 New York City released its "Determination on the Recyclability of Food Service Foam"

Its Summary said:

"For 30 years, attempts to recycle Food-Service Foam—both subsidized and non-subsidized attempts—have failed at each step of the recycling process. The municipalities and programs that DSNY researched tell a very clear story: Food-Service Foam is not capable of being recycled in an environmentally effective or an economically feasible manner.

The municipalities found that Food-Service Foam compacts in collection trucks, breaks into bits, and becomes covered in food residue, making it worthless when it arrives at the material recovery facility ("MRF"). It then blows throughout the MRF, is missed by manual sorters, mistakenly moves with the paper material and contaminates other valuable recycling streams, namely paper, which can be the most consistently valuable commodity in a recycling program. Food-Service Foam is too costly to clean and process compared to virgin material. "

Stores and food service businesses are already using paper products to replace styrofoam. It's doable. We need to pass this legislation to take a first, very achievable step toward eliminating polystyrene from NH and beyond.



601 Islington Street  
Portsmouth, NH 03801

2/15/2021

To Whom It May Concern,

I am writing as the owner of White Heron Tea & Coffee in Portsmouth, NH and as a concerned citizen regarding NH Bill HB618 addressing the distribution and use of polystyrene food service products. White Heron Tea LLC was established in 2005 as a wholesaler of organic teas and began selling direct to customers at Seacoast farmers markets in 2006. When we began selling at markets, we opted to avoid styrofoam containers due to short and long term concerns about the environmental impact of their use. Instead, we chose to use biodegradable disposables, which also extended to bowls, plates, soup containers and utensils.

While biodegradable/compostable packaging does cost more than polystyrene or plastic, customers have applauded our efforts. In general, they don't mind paying just a touch more for food and drinks served in biodegradable packaging. Many customers have said that they specifically choose White Heron due to our use of more sustainable packaging.

We would encourage you to stop the distribution and sale of polystyrene foodservice disposables in the state of New Hampshire for the long term health of our citizens, to leave a cleaner, greener New Hampshire behind for our children and grandchildren.

Thanks for your time and consideration,

A handwritten signature in blue ink, appearing to read "Jonathan Blakeslee", is written over a horizontal line that extends across the page.

Jonathan Blakeslee  
Owner / Managing Member  
White Heron Tea LLC

Feb. 13, 2021

Good day Chairman Hunt and distinguished Members of the House Committee on Commerce and Consumer Affairs,

I am Judi Lindsey from Candia where I am a volunteer on my town Planning Board and Conservation Commission.

I support HB 618 Foam Free NH and am asking that you do, too. This bill is an important step in reducing and eliminating the use of polystyrene foam food-ware.

This foam based material can not be recycled due to food contamination. Our local recycling center does not recycle it and it becomes garbage - and a tax on the townspeople.

The chemicals in it are toxic. They can leach out when it is heated and poison our food, our bodies, and our environment.

And I am personally affected by this wasteful and harmful material when I am out kayaking on the quiet ponds and see the trash up close - caught in the blueberry bushes along the shore, and stuffed in the cattails and lily pads. And most disgustingly, I have seen animals attracted by the food scraps in the containers and choked to death.

I see no reason to continue using a product that is shown to be destructive, lethal and wasteful. There are safer, more economically sound alternatives - and they are being used now in towns, cities and other states - proving it can be done.

Thank you for listening to the public comments.



Bill as  
Introduced

HB 618 - AS INTRODUCED

2021 SESSION

21-0741

08/06

HOUSE BILL            **618**

AN ACT                relative to the sale and distribution of polystyrene food service products.

SPONSORS:            Rep. Spang, Straf. 6; Sen. Whitley, Dist 15; Sen. Perkins Kwoka, Dist 21; Sen. Watters, Dist 4

COMMITTEE:          Commerce and Consumer Affairs

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ANALYSIS

This bill prohibits the sale or distribution of polystyrene foam in food service businesses.

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Explanation:        Matter added to current law appears in ***bold italics***.  
Matter removed from current law appears ~~[in brackets and struckthrough.]~~  
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

STATE OF NEW HAMPSHIRE

*In the Year of Our Lord Two Thousand Twenty One*

AN ACT relative to the sale and distribution of polystyrene food service products.

*Be it Enacted by the Senate and House of Representatives in General Court convened:*

1 1 Purpose. It is the purpose of this act to:

2 I. Achieve source reduction pursuant to RSA 149-M:3 to mitigate the harmful effects of  
3 polystyrene foam food service products on New Hampshire's municipalities and natural resources.

4 II. Relieve the pressure on municipal and county landfills to manage the disposition of  
5 single- use polystyrene food service products.

6 III. Implement source reduction, the first goal in the hierarchy of solid waste management  
7 solutions in Section 149-M:3.

8 2 New Subdivision; Prohibition of Single-use Polystyrene Foam Food Service Products. Amend  
9 RSA 149-M by inserting after section 23 the following new subdivision:

10 Prohibition of Polystyrene Foam Food Service Products

11 149-M:23-a Definitions. In this subdivision:

12 I. "Disposable food service product" means food containers designed for one-time use.  
13 "Disposable food service container" includes service ware for beverages, trays, take-out foods,  
14 packaged meat, eggs, bakery products, and leftovers from partially consumed meals prepared by food  
15 vendors.

16 II. "Food service business" means a business that sells or provides food for consumption on  
17 or off the premises, and includes, but is not limited to, any restaurant, cafe, delicatessen, coffee shop,  
18 supermarket or grocery store, vending truck or cart, food truck, movie theater, school, business, or  
19 institutional cafeteria, including those operated by or on behalf of the state. "Food service business"  
20 does not include health care facilities or Meals on Wheels programs.

21 III. "Polystyrene foam" means blown polystyrene and expanded or extruded foams using a  
22 styrene polymer.

23 IV. "Service product" means a food container, bowl, plate, tray, carton, hot and cold beverage  
24 cup, lid, or other item designed to be used for foods or beverages.

25 149-M:23-b Prohibition on Single-Use Polystyrene Foam Food Service Products.

26 I. Beginning January 1, 2022, no food service business shall sell or distribute in the state a  
27 disposable food service product for foods or beverages that is composed in whole or in part of  
28 polystyrene foam.

29 II. The following items are exempt from the prohibition in this section:

30 (a) Factory-sealed, aseptically-packaged shelf-stable foods.

**HB 618 - AS INTRODUCED**

**- Page 2 -**

1           (b) Uncooked meat, fish, poultry, or seafood for off-premises preparation and  
2 consumption.

3           (c) Food or beverages that have been packaged in expanded polystyrene outside the state  
4 before receipt by a food service business.

5           III This section shall not prohibit a person from re-using polystyrene packaging received  
6 with products distributed from out of state.

7           IV. A food service business shall not be in violation of a prohibition under this subdivision if  
8 the food service business:

9           (a) Purchased the polystyrene foam food service product prior to January, 2022; and

10           (b) Provides the polystyrene food service product to a consumer on or before July 1, 2022.

11           149-M:23-c Municipalities shall have the sole authority under this subdivision to regulate,  
12 implement, and enforce the prohibition on polystyrene foam food service products.

13           3 Effective Date. This act shall take effect January 1, 2022.