Beverage Containers and Plastic Pollution in Rhode Island

Jed Thorp, RI State Director

Clean Water Action

CLEAN WATER ACTION

Rhode Island Zero Waste Coalition

Presentation Overview…

- What we know about the problem
  - What ISN’T being captured or reflected in the numbers
- Existing laws and programs in RI
- Why a “bottle bill”?
  - What it can accomplish
  - Some thoughts as we examine other states

The Problem

Narragansett Bay Estuary Program

2022 Science Event

Macro to Microplastic in Narragansett Bay

October 2022

Roger Williams University

Comprehensive look at plastic pollution in Narragansett Bay

https://www.nbep.org/nbep-plastics-event-2022

Beverage containers clog storm drains and exacerbate flooding

https://www.youtube.com/watch?v=g8Na65o5mWE&t=3070s

Photos: Narragansett Bay Commission

ONE DAY OF CLEANING PROVIDENCE PLACE MALL SIPHON INLET STRUCTURE

Clean-up Data

Beverage containers are consistently one of the most commonly found items during neighborhood and shoreline cleanups

During the 2022 International Coastal Cleanup, over 33,000 beverage containers and beverage container pieces were collected from *one-day cleanups covering just 1/3 of Rhode Island's shoreline*

ALL TRASH ITEMS COLLECTED

Cigarette Butts	28,976	25.21%
Plastic/Foam Pieces	16,873	14.68%
Food Wrappers (candy, chips, etc.)	8,421	7.33%
Bottle Caps (plastic)	7,194	6.26%
Beverage Bottles (plastic)	6,711	5.84%
Other Plastic Waste	5,270	4.59%
Beverage Cans	3,908	3.40%
Beverage Bottles (glass)	3,596	3.13%
Straws, Stirrers (plastic)	3,332	2.90%
Bottle Caps (metal)	2,833	2.47%
Other Bags (plastic)	2,809	2.44%
Foam Packaging	2,316	2.02%
Fishing Lines, Nets, Traps, Rope, etc.	2,314	2.01%
Other Waste (metal, paper, etc.)	2,170	1.89%
Grocery Bags (plastic)	1,802	1.57%
Lids (plastic)	1,616	1.41%
Cups, Plates (plastic)	1,543	1.34%
Tobacco Products (lighters, cigar tips, etc.)	1,280	1.11%
Food Containers (plastic)	1,184	1.03%
Cups, Plates (paper)	1,150	1.00%
Cups, Plates (foam)	1,139	0.99%
Construction Materials	984	0.86%
Utensils (plastic)	943	0.82%

TOP TRASH COLLECTED

15% Tiny Trash

16,873
Plastic and foam pieces less than 2.5 cm

10% Eating

11,176
Food wrappers
Plates
Plastic utensils
Take-out containers

27% Smoking

30,575
Cigarette butts
Wrappers
Cigar tips
E-cigarettes

29% Drinking

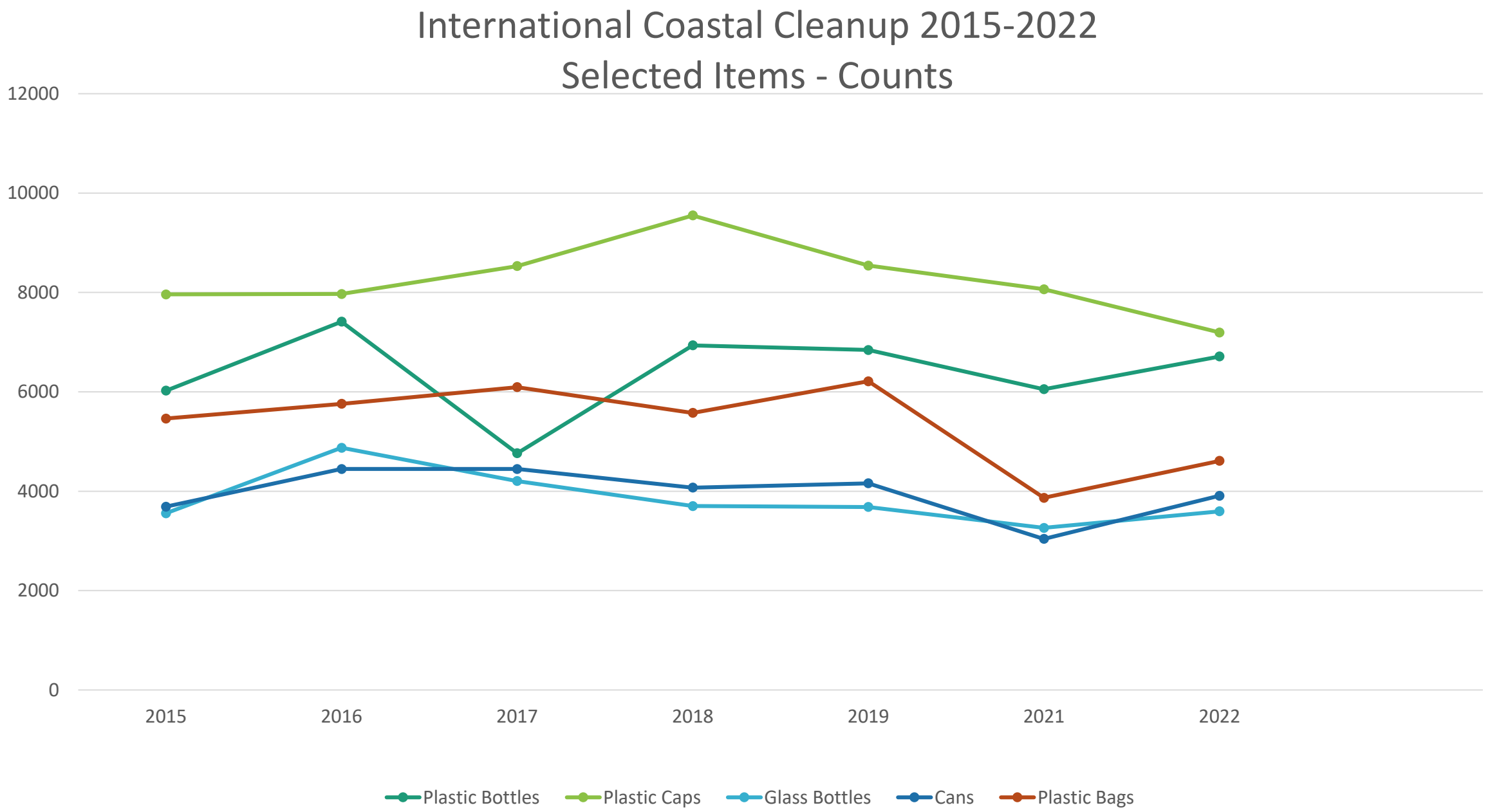
33,526
Plastic bottles
Glass bottles
Cans
Caps
Straws, stirrers

2% Fishing

2,317
Line
Nets
Ropes
Traps
Buoys

18% Other

20,452
See list at right.

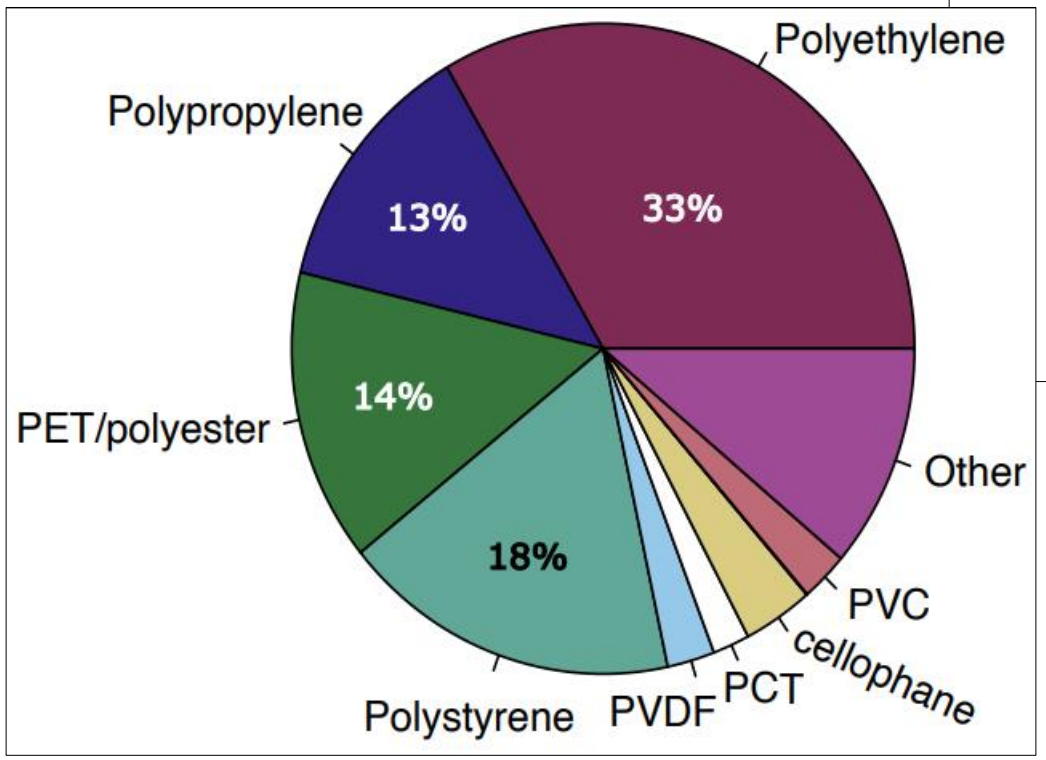

International Coastal Cleanup 2015-2022
Selected Items - Counts
12000
10000
8000
6000
4000
2000
0
2015
2016
2017
2018
2019
2021
2022
Plastic Bottles
Plastic Caps
Glass Bottles
Cans
Plastic Bags

Note: Researchers estimate that anywhere from 40-60% of litter is “accidental” or unintentional

“Nips”

Over 85,000 collected last year in just a few months

URI study on microplastics in Narragansett Bay



www.nature.com/scientificreports

scientific reports

Check for updates

OPEN

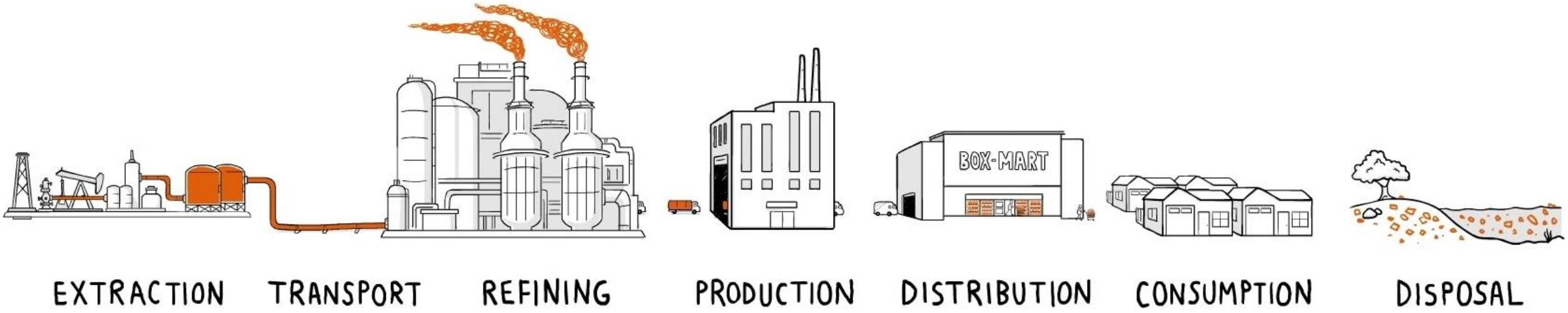
Extensive estuarine sedimentary storage of plastics from city to sea: Narragansett Bay, Rhode Island, USA

Victoria M. Fulfer[1,2]✉ & J. P. Walsh[1,2]

Plastics are an important new component of the global sedimentary system, and much concern exists about their transport, fate and impact. This study presents the first system-scale assessment of sedimentary storage of microplastic for an estuary, Narragansett Bay, RI (USA), and the measurements of shoreline and seabed sediments add to the growing body of literature demonstrating high coastal concentrations. Microplastic concentrations in sediments ranged from 396 to over 13,000 MP particles kg^{-1} dry sediment (DW), comparable to other shoreline and seafloor sites located near urban centers. As previously reported for fine sediment and other pollutants, estuarine plastic storage is extensive in Narragansett Bay, especially within the upper urbanized reaches. Over 16 trillion pieces of plastic weighing near 1000 tonnes is calculated to be stored in surface sediments

"Over 16 trillion pieces of plastic weighing nearly 1,000 tonnes is calculated to be stored in surface sediments of the Bay…"

Plastic has environmental impacts even before it leaves the store…



No “Silver Bullet” Solutions


REUSE
REDUCE
RECYCLE


REDUCE
REUSE
RECYCLE
LANDFILL
ENVIRONMENT

Title 44
Taxation

Chapter 44
Taxation of Beverage Containers, Hard-To-Dispose Material and Litter Control Participation Permittee

R.I. Gen. Laws § 44-44-3

§ 44-44-3. Imposition of tax on beverage containers.

There shall be levied and imposed a tax of eight cents ($0.08) on each case of beverage containers sold by a beverage wholesaler to a beverage retailer or consumer within this state. The tax shall be collected by the beverage wholesaler. The tax provided for in this section shall not be levied, imposed, or collected on reusable and refillable beverage containers.

History of Section.
P.L. 1984, ch. 251, § 4; P.L. 1988, ch. 241, § 2; P.L. 1998, ch. 86, § 1; P.L. 1998, ch. 377, § 1; P.L. 2019, ch. 88, art. 5, § 15.

Chapter 44
Taxation of Beverage Containers, Hard-To-Dispose Material and Litter Control Participation Permittee

R.I. Gen. Laws § 44-44-1

§ 44-44-1. Purpose.

This chapter is enacted to provide funding for the litter reduction and recycling program, created pursuant to chapter 15.1 of title 37, and the hard-to-dispose material — control and recycling program, created pursuant to chapter 15.1 of title 37.

History of Section.
P.L. 1984, ch. 251, § 4; P.L. 1989, ch. 514, § 3.

R.I. Gen. Laws § 44-44-3.1

§ 44-44-3.1. Permit required.

Commencing August 1, 1988, every person engaging in, or desiring to engage in activities described in § 44-44-2(20), shall annually file an application with the tax administrator for a litter control participation permit, hereinafter called a "permit", for each place of business in Rhode Island. In those cases where the only qualifying activity is the operation of vending machines, the person shall either obtain a Class A permit for each vending machine or obtain a permit based on total gross receipts. All applications shall be in a form, including information and bearing signatures that the tax administrator may require. At the time of making an application, the applicant shall pay the tax administrator a permit fee based as follows:

(1) For the applicant whose gross receipts for the prior calendar year measured less than fifty thousand dollars ($50,000), a fee of twenty-five dollars ($25.00);

(2) For the applicant whose gross receipts for the prior calendar year measured at least fifty thousand dollars ($50,000), but less than one hundred thousand dollars ($100,000), a fee of thirty-five dollars ($35.00);

(3) For the applicant whose gross receipts for the calendar year measured at least one hundred thousand dollars ($100,000), but less than four hundred thousand dollars ($400,000), a fee of seventy-five dollars ($75.00);

(4) For the applicant whose gross receipts for the prior calendar year measured at least four hundred thousand dollars ($400,000), but less than one million dollars ($1,000,000), a fee of one hundred dollars ($100); and

Permit fee eliminated in 2023 state budget (H5200)

2010 Rhode Island Code
Title 23 Health and Safety
CHAPTER 23-18.12 Beverage Container Recyclability
§ 23-18.12-1 Legislative purpose.

§ 23-18.12-1 Legislative purpose. – The general assembly has determined that the packaging of beverages in non-recyclable containers is a significant source of waste within the state and is, therefore, a necessary concern of the effort to reduce the filling of the state central landfill as well as to reduce the economic and environmental costs of waste management for the citizens of the state.

History of Section.
(P.L. 1989, ch. 515, § 1.)

§ 23-18.12-3 Beverage container recyclability requirements. – (a) Every beverage distributor located and/or doing business in the state shall sell or convey beverages only in containers for beverages which:

(1) Shall have obtained a fifty percent (50%) recycling rate by 1992, as determined by the department pursuant to provisions of this chapter; and

(2) Are free of any design components which make it less recyclable than a container of the same volume, whose body is composed of the same material; and

(3) Are free of design components added to or substituted for existing recyclable containers, which would adversely affect the recyclability of the recyclable containers.

(b) To determine if a container meets the standards of recyclability of this chapter the department shall monitor the recycling rate, costs, and technical efficiency and feasibility of collecting and recycling all containers.

History of Section.

(P.L. 1989, ch. 515, § 1.)

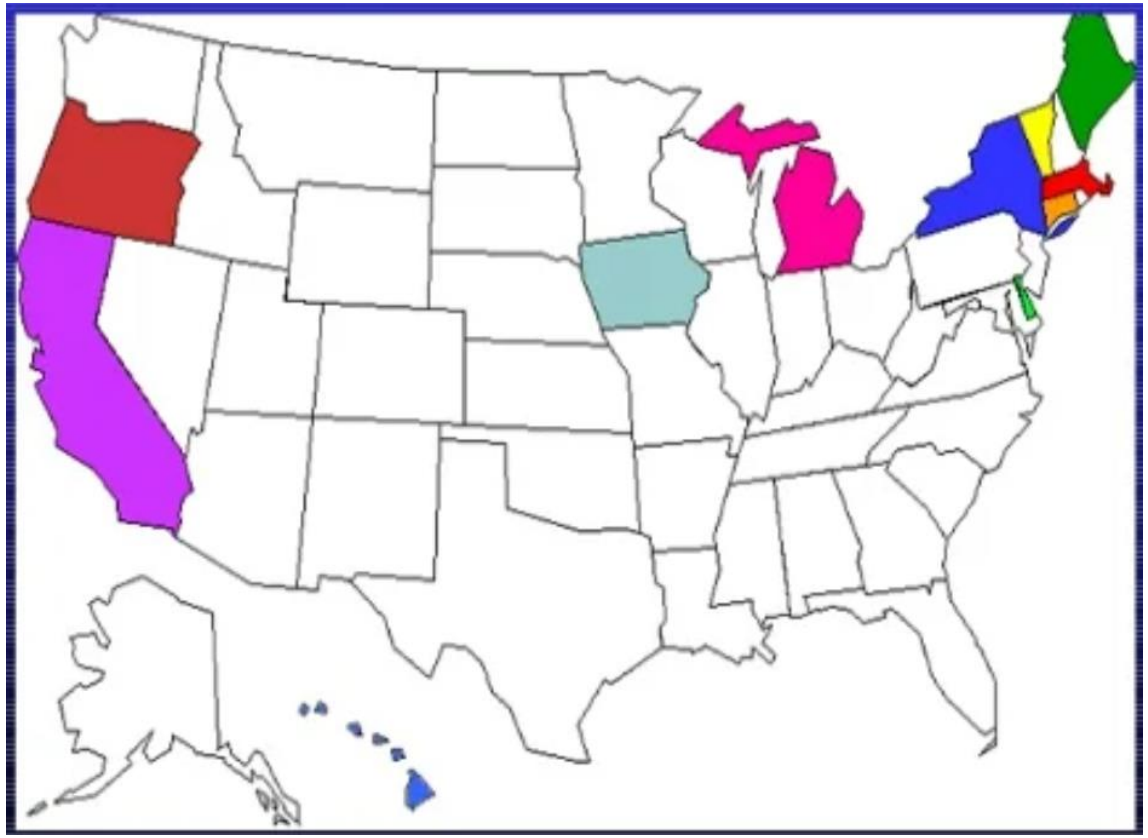
Deposit Return Systems (aka Bottle Bills)

Reduce litter

- A study by the Container Recycling Institute of the effects of “bottle bills” when first adopted in the U.S. showed a consistent **70-84% reduction in beverage container litter** and a **34-47% reduction in total litter.**

Improve Recycling

- States with a “bottle bill” have **recycling rates that are, on average, 2.5 times better** than states without bottle bills.
- Materials captured by DRS are more likely to be *effectively* recycled.



Bottle Bills reduce litter…

- States with Bottle Bills reported 40% less beverage container litter in coastal cleanup surveys than states without Bottle Bills (2018)
- States with Bottle Bills reported a higher ratio of caps to bottles (2018)

***https://www.bottlebill.org/index.php/benefits-of-bottle-bills/litter-studies-in-bottle-bill-states**

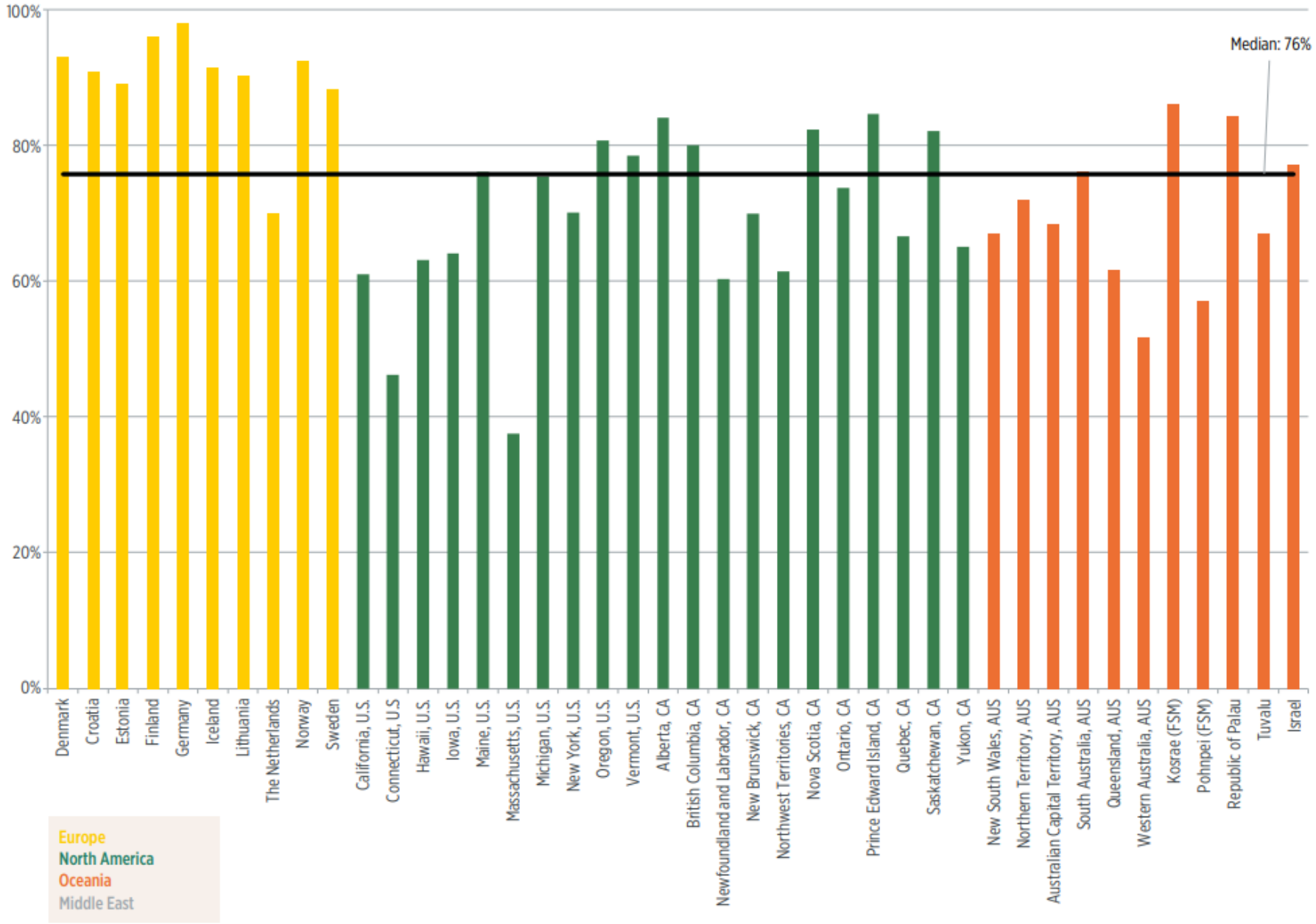
Redemption Container Recycled Estimate	Tons
PET Beverage	3,638
HDPE Beverage	390
Glass Bottles	17,170
Aluminum Cans	1,842
Total	23,041

Redemption Container Landfilled Estimate	Tons
PET Beverage	3,771
HDPE Beverage	1,257
Glass Bottles and Jars	7,542
Aluminum Cans	838
Total	13,408

What is the REAL beverage container recycling rate?

- 63% (above estimate)
- 30% (minus glass, which isn't actually recycled)
- "Recycled" can mean different things (Recycling vs "Down-cycling")
- What about commercial recycling?? Bars, restaurants, hotels, schools?
- Well under 30% (???) once we factor in what ISN'T captured at all

Latest Return Rates in Global Deposit Return Systems for Single-Use Drinks Containers



As We Examine Bottle Bill Systems…

- “Redemption Rate” vs “Recycling Rate”
- Correlation does not equal causation
- Every state and country is unique

Some things that are important to us…

- Sufficient motivation: deposit value
- Sufficient convenience: number and location of redemption points
  - Equity
- Reinvestment of unclaimed deposits back into system
- Oversight, system integrity and public confidence in data

What matters at the end of the day is what works

Thank you

jthorp@cleanwater.org