

Current State of U.S. Plastic Recycling

DOE – Circular Economy for Plastics Workshop

June 8, 2023

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Harmonizing Human Behavior with the Natural World



STINA™

Research company with tools to support transparency in the plastic recycling value chain



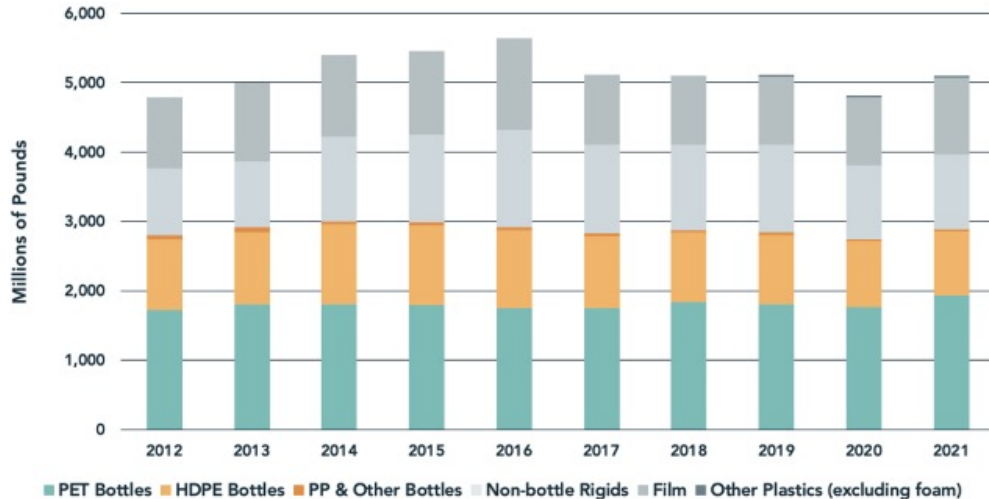
Stina strives to provide data for better decision-making, fosters collaborative problem-solving, and raises awareness through web-based tools.

Latest Figures: Up but Growth in Recycling needed across All categories, especially material suitable for food grade

5.1 Billion lbs. Bottles, Non-bottle Rigid Plastics, Film and Other Plastics (excluding foam)	PET Bottles 1,931.5 Millions of pounds	HDPE Bottles 927.2 Millions of pounds	PP & Other Bottles 28.1 Millions of pounds
	Non-bottle Rigid 1,071.0 Millions of pounds	Film 1,106.2 Millions of pounds	Other Plastics (excluding foam) 20.2 Millions of pounds

The full report with more detail by category can be accessed digitally at www.CircularityinAction.com/2021PlasticRecyclingData or by scanning the QR code to the right.

U.S. Sourced Post-consumer Plastic Recovered for Recycling by Category (2012-2021)



In 2021, 5,084.1 million pounds of post-consumer plastic material sourced in the U.S. was recovered for recycling in the categories of Bottles, Non-bottle Rigid, Film, and Other Plastics (excluding foam).

5.8% Increase Overall ↑

The categories of Bottles, Non-bottle Rigid and Film, tracked in previous years, increased by a 280.3 million pounds in 2021, or 5.8%.

Largest Increase - 9.3% ↑

PET Bottles
163.8 Million lbs. ↑

Largest Decrease - 1.7% ↓

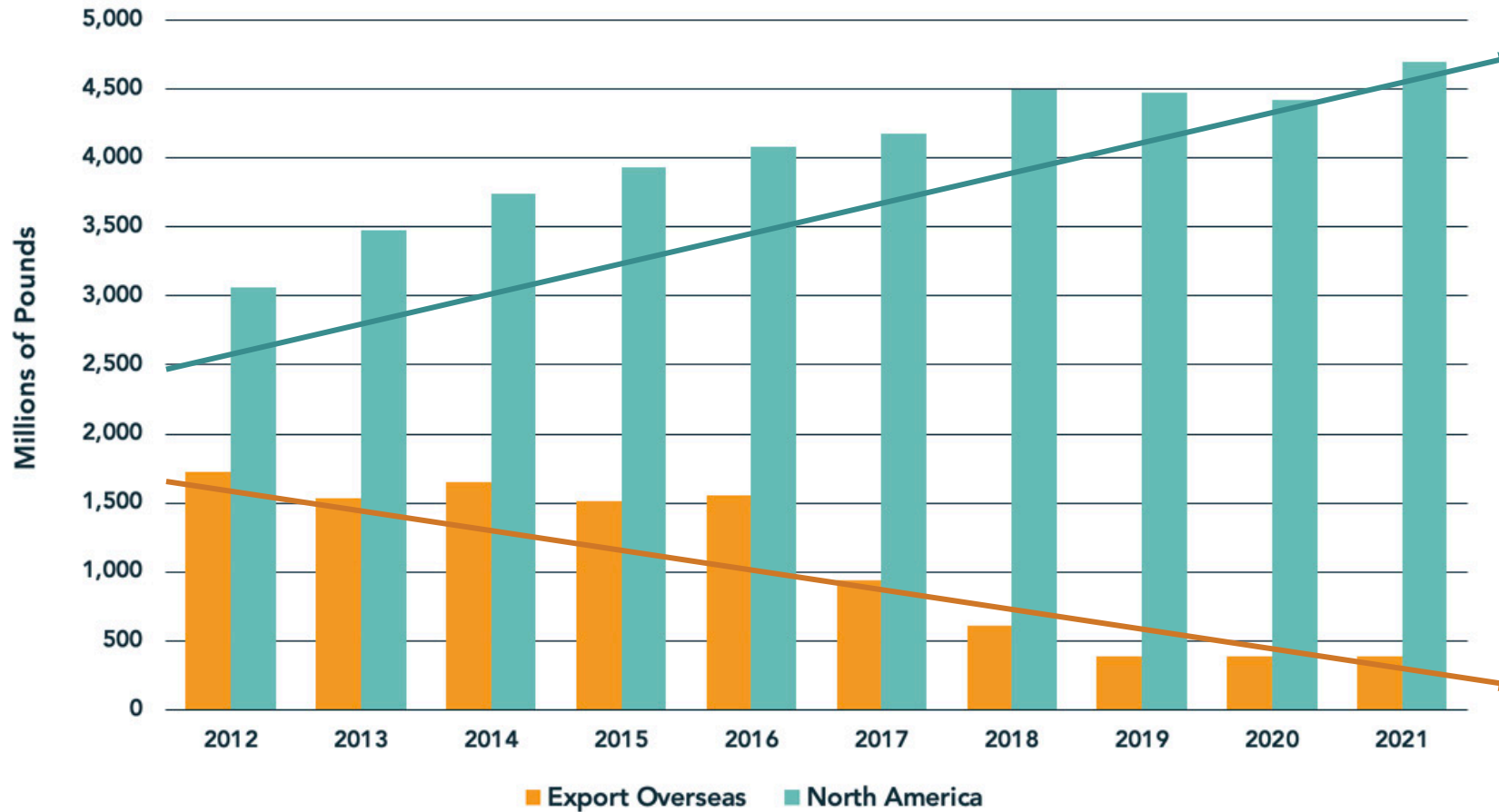
HDPE Bottles
16.0 Million lbs. ↓



The Association of Plastic Recyclers



U.S. Sourced Post-consumer Plastic Recovered for Recycling by Destination



Decades Change

2012

35.9%

Export
Overseas

61.4%

North
America

2021

7.7%


Export
Overseas

92.3%

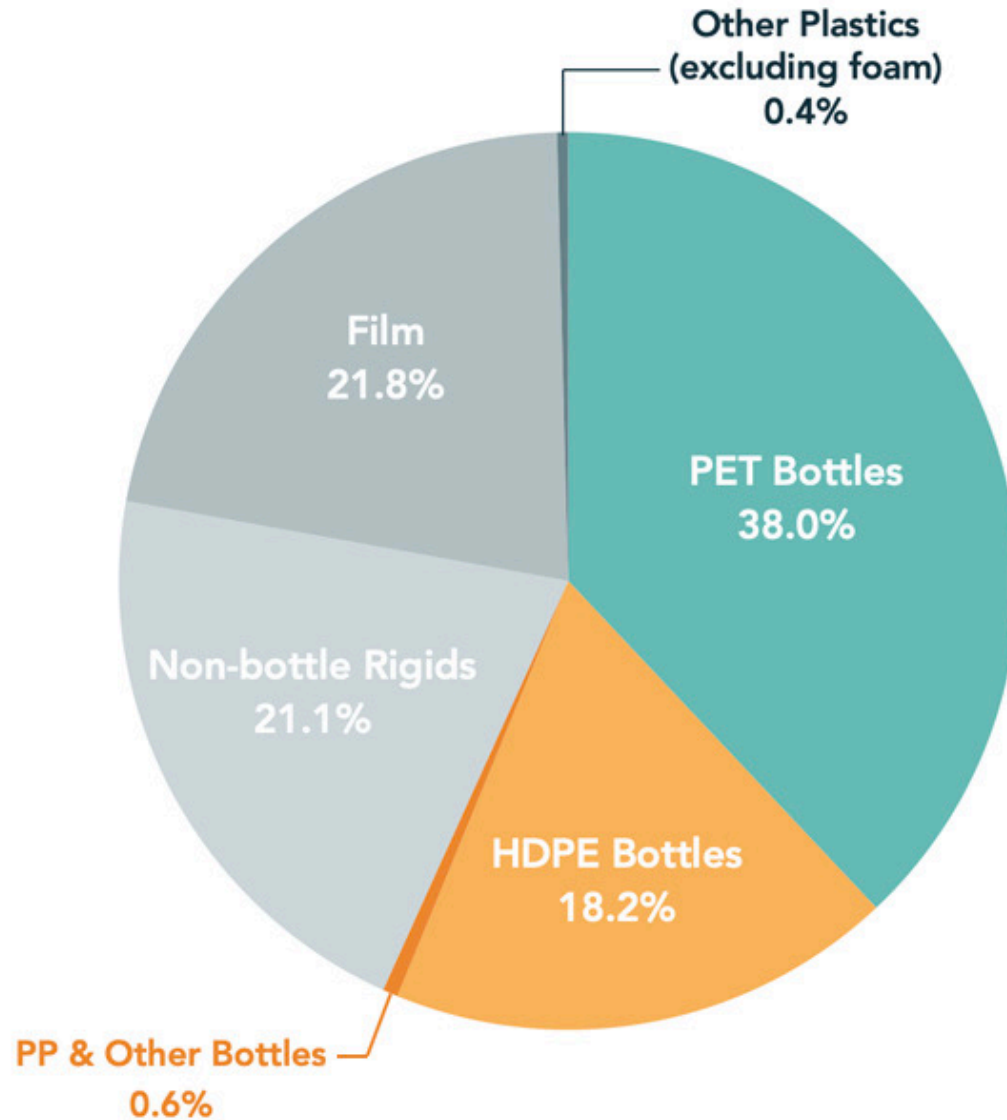
North
America

U.S. Sourced Post-consumer Plastic Recovered for Recycling by Category

Plastic Category	Total Recovered for Recycling in 2021 (Millions of Pounds)	Total Percent Change Since 2020	% Acquired by North American Reclaimers
PET Bottles	1,931.5	9.3%	96.9%
HDPE Bottles	927.2	-1.7%	99.2%
PP & Other Bottles	28.1	-15.8%	96.9%
Non-bottle Rigid	1,071.0	1.3%	88.5%
Film	1,106.2	12.2%	83.1%
Other Plastics (excluding foam)	20.2	22.4%	37.2%
Total	5,084.1	5.8%	92.3%

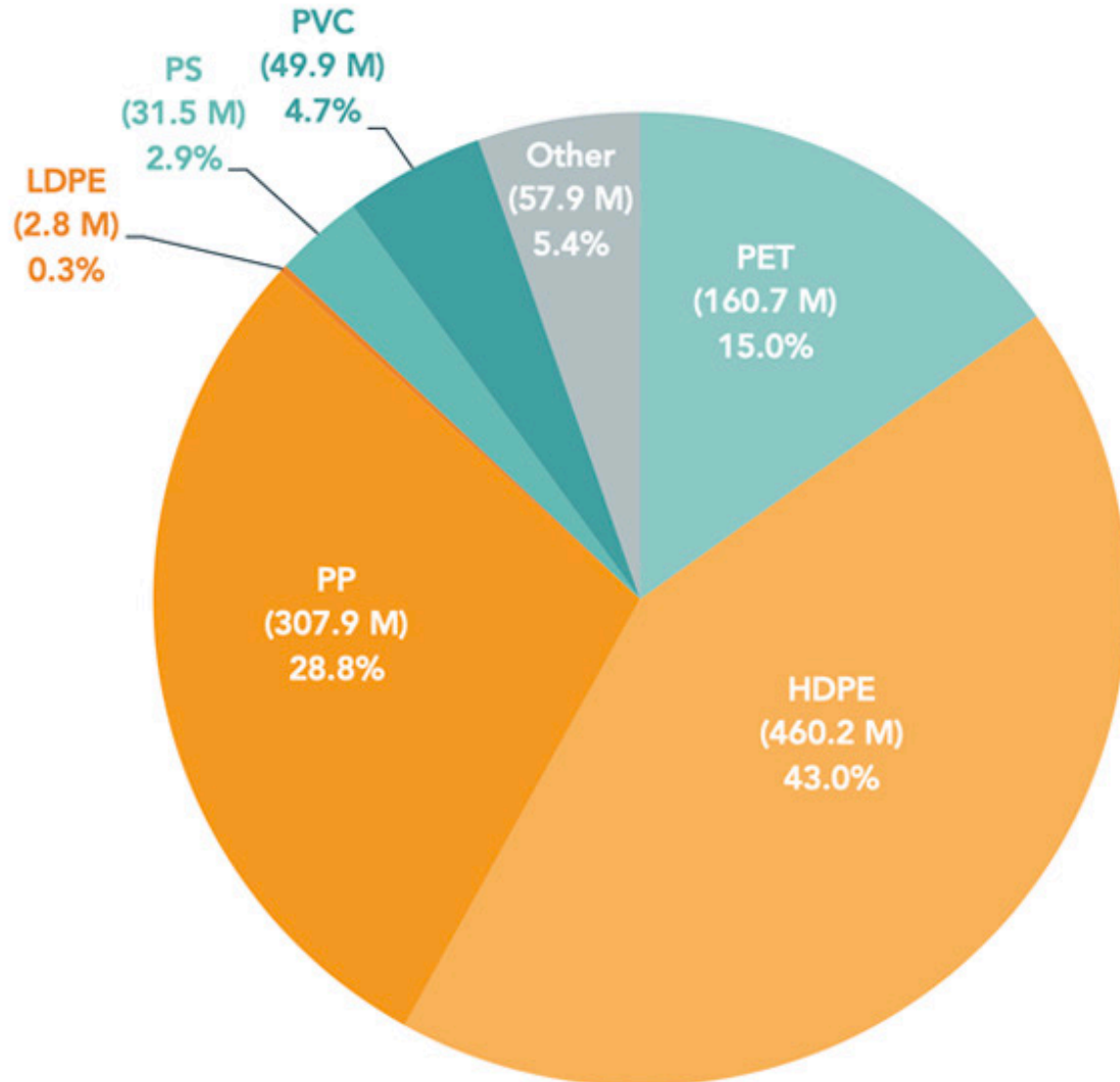
**5.8%
Increase
Overall** 

U.S. Sourced Post-consumer Plastic Recovered for Recycling by Category



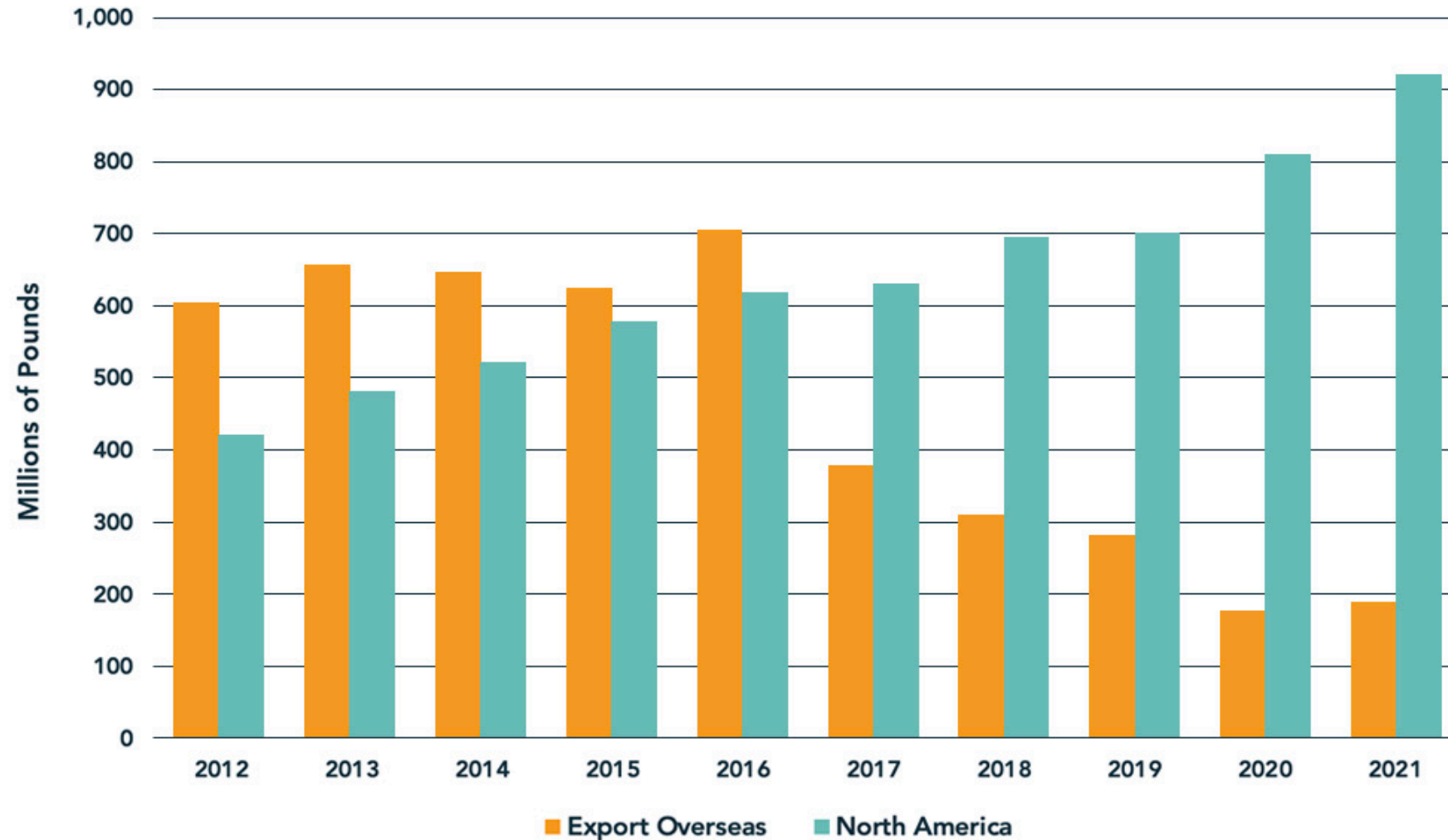
- 56.8 % of Total Post-consumer Plastic Recovered for Recycling is Bottles
- Film surpassed Non-bottle Rigid as the second largest overall category at 21.8% with Non-bottle Rigid following at 21.1%

U.S. Post-consumer Non-bottle Rigid Plastic Recovered for Recycling by Resin



- HDPE and PP make up the majority of Non-bottle Rigid plastics at 71.6% combined
- PET makes up 15.1% of Non-bottle Rigid plastics
- Other resins (PVC, PS, LDPE and mixed resin/unknown) make up the remaining 13.3% of Non-bottle Rigid plastics

U.S. Sourced Post-consumer Film Recovered for Recycling by Destination

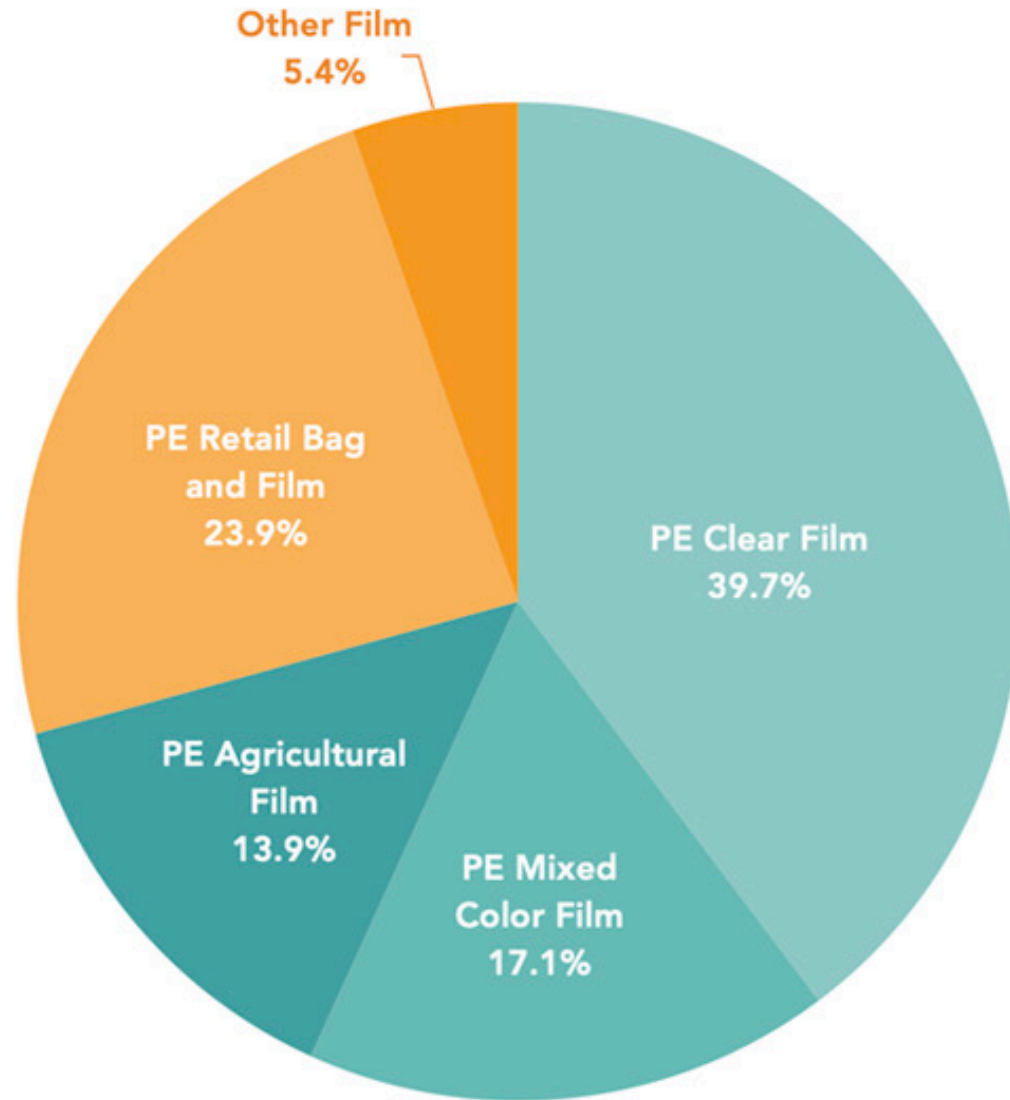


Film:

83.1%
North
America

16.9%
Export
Overseas

Percentage of Pounds of U.S. Sourced Post-consumer Film Recovered for Recycling by Category



- PE Clear Film- Largest Category at 39.7%
- PE Retail Bag and Film – Second Largest at 23.9%
- PE Mixed Color Film-Third Largest at 17.1%

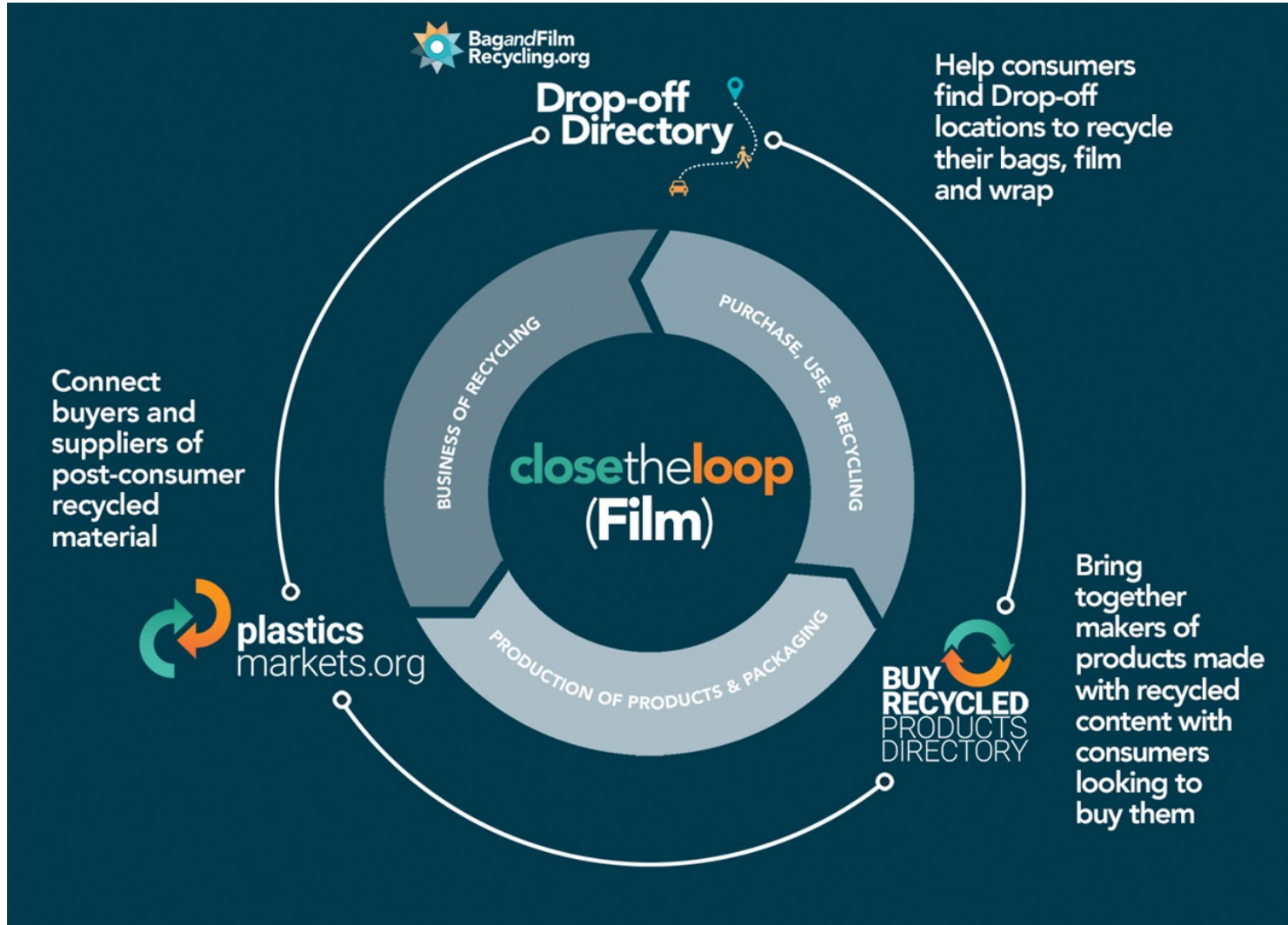
U.S. Sourced Post-consumer Film Recovered for Recycling by Category

Film Category	Total Recovered for Recycling in 2021 (Millions of Pounds)	Total Percent Change Since 2020	% Acquired by North American Reclaimers
PE Clear Film	439.5	4.6%	84.0%
PE Mixed Color Film	188.8	48.2%	79.8%
PE Agricultural Film	154.2	-1.3%	89.5%
PE Retail Bags & Film	264.2	7.9%	88.8%
Other Film	59.5	60.9%	44.9%
Total	1,106.2	12.2%	83.1%

**12.2%
Increase
Overall**



Connect with Us



Connect with Us if you want to help Close the Loop.





STINA™

Harmonizing Human Behavior with the Natural World

"The potential for innovation through inspiration from nature is as great as the risk we face by ignoring nature's signals. We want to help unlock that innovation."

Nina Butler

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Publications



Reckoning with the U.S.
Role in Global Ocean
Plastic Waste



Plastic Justice



GCSE 2022 Plastic Legal
Summary: Comparative Law
Analysis and Recommendations
Regarding Plastic Waste: France
and the United States.



The Emergence of
Microplastics: Charting the Path
from Research to Regulations



Minderoo-Monaco
Commission on Plastics
and Human Health Report



Outside the Safe Operating
Space of the Planetary
Boundary for Novel Entities



Plastics and the Limits of U.S.
Environmental Law



Food Additives and
Child Health



Global Human-made Mass
Exceeds All Living Biomass



The CLARITY-BPA Core
Study: A Perinatal and
Chronic Extended-Dose-
Range Study of Bisphenol A
in Rats



An Overview of Chemical
Additives Present in Plastics:
Migration, Release, Fate and
Environmental Impact During
Their Use, Disposal and
Recycling

<https://www.icgn.org/biodiversity-systemic-risk-10-game-changers-board-directors-and-stewardship-teams>

<https://vimeo.com/810601876/d21b39dee1>