

Plastic Pollution in Virginia: Solutions to Marine Debris



Laura McKay,
CZM Program Manager

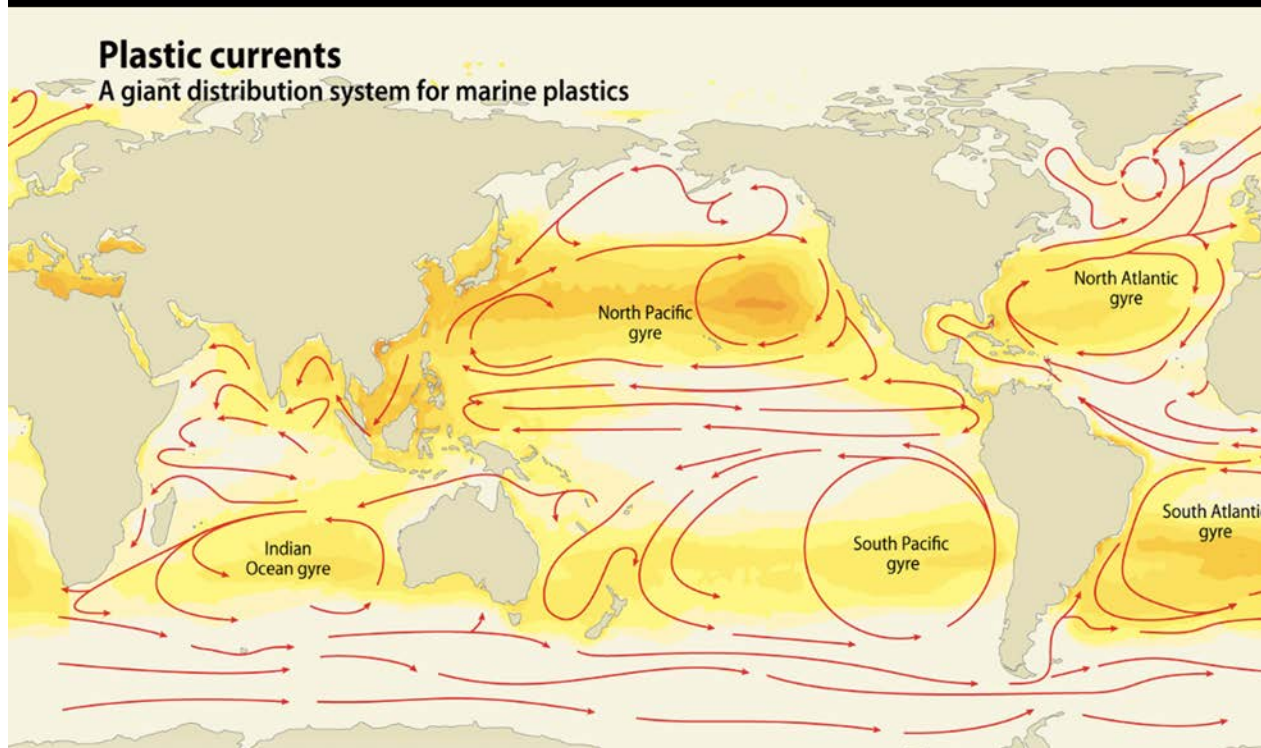


Of Longwood University
Katie Register,
Executive Director

With Funding from



Growing Awareness and Concern

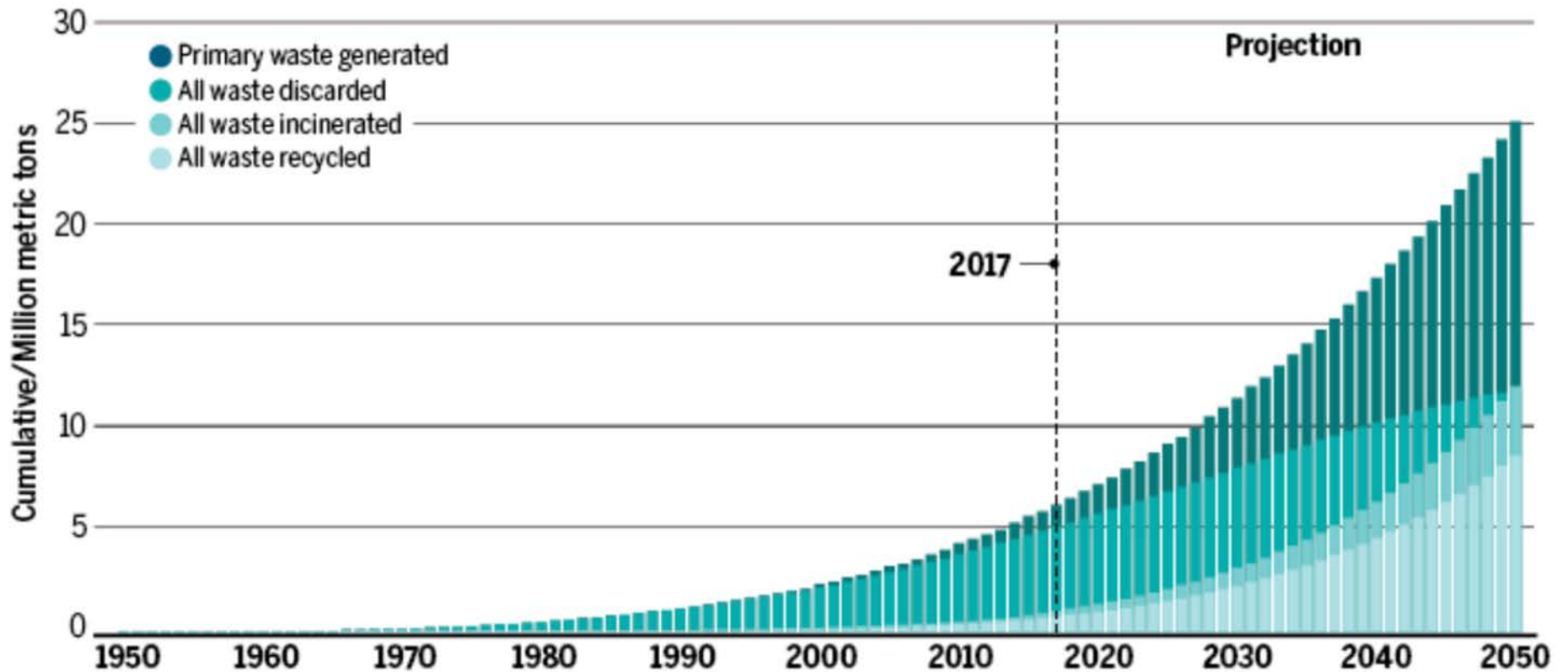


Cooperative Institute for Meteorological Satellite Studies



Viewed using the Spillhaus Projection,
planet Earth has one connected ocean

The Challenge: 4 times more plastic in the next 30 years



CREDITS: (GRAPHIC) G. GRULLÓN/SCIENCE; (DATA) GEYER ET AL., SCIENCE ADVANCES



76 million pounds of plastic packaging created by US companies **every day**.

Only 9% recycled

24 billion pounds enters the oceans **every year**, killing over a million marine animals.

Marine Debris Reduction Plan Goals and Actions – How can we get there?

Sources

- **Consumer Debris**



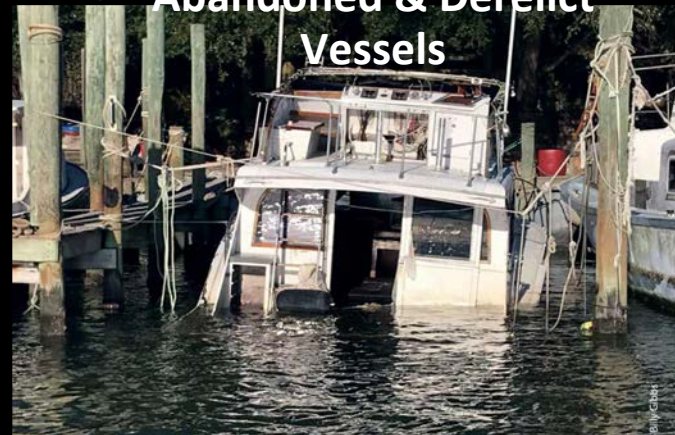
- **Derelict Fishing Gear**



- **Microplastics**



- **Abandoned & Derelict Vessels**



Top 10 Items recorded by volunteers International Coastal Cleanup in Virginia

Yellow = Plastic

1. Cigarette Filters
2. Beverage Bottles (Plastic)
3. Bags
4. Cups, Plates, Forks, Knives, Spoons
5. Food Wrappers/Containers
6. Beverage Cans
7. Caps & Lids
8. Beverage Bottles (Glass)
9. Straws, Stirrers
10. Building Materials

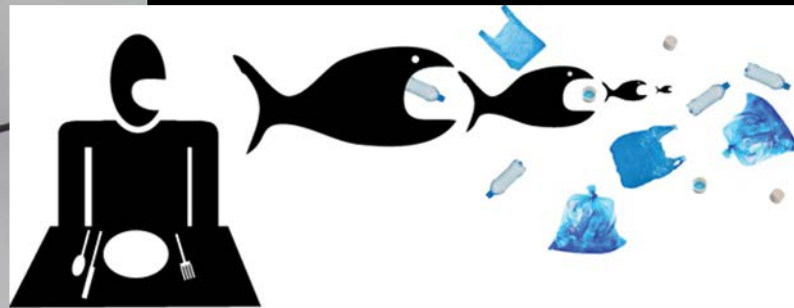
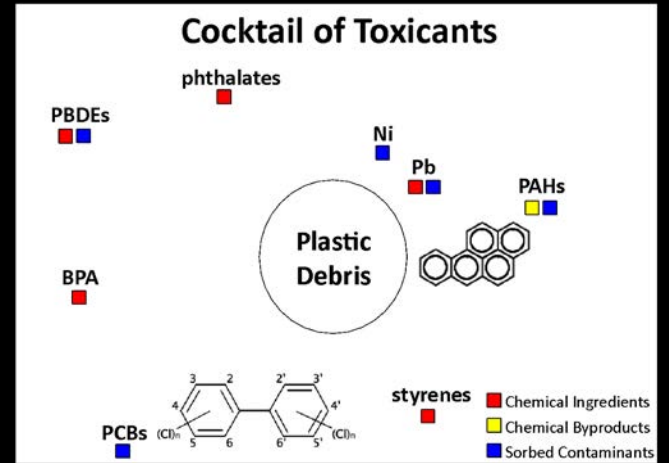
Mostly from
land-based
sources & 83%
is plastic.



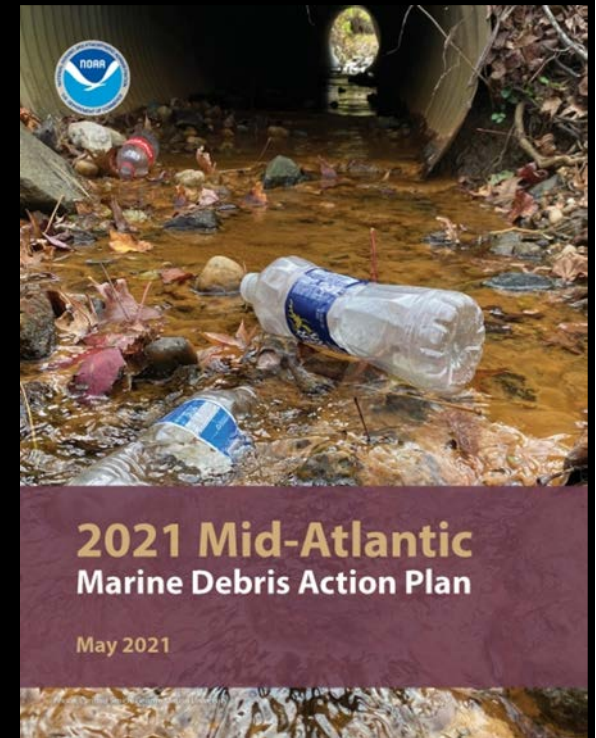
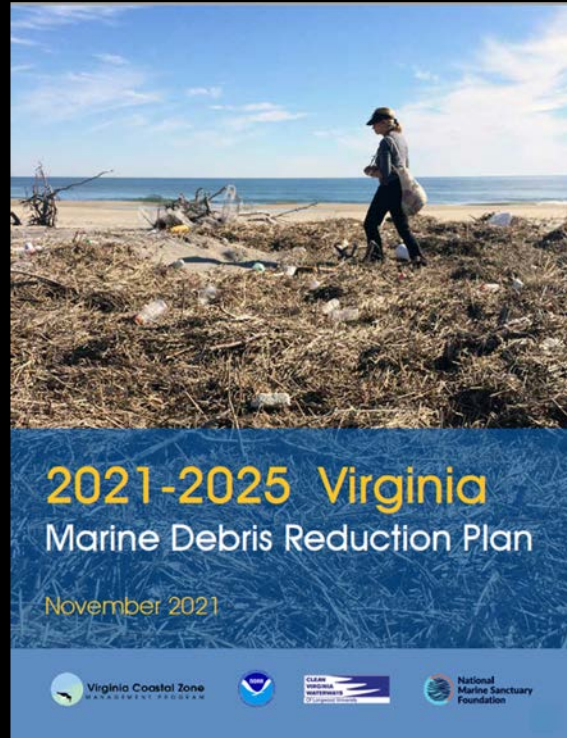
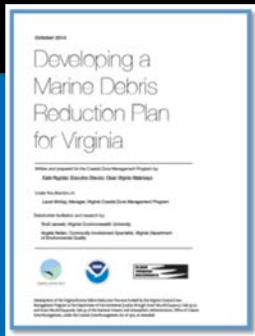
Photo by Clean VA Waterways

Data from the International Coastal Cleanup in Virginia, Clean VA Waterways

What's the Harm? Impacts on wildlife, habitat, human health & economics



What's the Solution? Start with planning



<https://www.deq.virginia.gov/coasts/marine-debris>

VA CZM funded first 5 year strategy with \$313k and is funding 2021-25 with \$810k



2021-2025 Virginia Marine Debris Reduction Plan

November 2021



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Each of the GOALS for each of the four sources of debris all have the same strategies

Strategy 1.1.: *Prevention, Behavior Change, Education, Outreach*

Strategy 1.2.: *Research and Monitoring*

Strategy 1.3.: *Proper Disposal, Interception, and Infrastructure*

Strategy 1.4.: *Removal*

Strategy 1.5.: *Policy, Management, Legislation and Enforcement*



Goal 1: Understand, Prevent, and Mitigate the Impacts of Consumer Debris (Mainly Single-use Plastic)

Consumer Debris consists of ubiquitous human-made materials and is dominated by single-use plastics. In Virginia, common debris items include single-use bags and bottles, polystyrene cups, balloons, cigarettes, food containers, straws, as well as larger debris, such as tires, large appliances, and other consumer products.

Goal Performance Metric: Reduction in marine debris from consumer items.

Strategy 1.1.: Prevention, Behavior Change, Education, Outreach

Objective 1.1.1.: By the end of 2025, promote information-sharing and support outreach, educational and social marketing campaigns targeted at consumer debris items to raise public awareness of available science, data collection, research, laws, and regulations as steps leading to long-term changes to behavior and improve efforts to address marine debris.

<p>Factor: Lack of outreach to the public (Knowledge/Information)</p>	<p>Action 1.1.1.1.: By the end of 2025, collaborate with Mid-Atlantic partners to create or adapt and disseminate at least five (5) outreach products on consumer debris, that is relevant or could be replicated across the region, including fact sheets, public displays, infographics, one pagers, tool kits, templates, and manuals of best practices about consumer debris items, and make them available online for diverse audiences.</p> <p><i>This Action aligns with the Mid-Atlantic Marine Debris Action Plan, Action 1.1.1.1.</i></p>	<p>Lead(s) and Partner(s): Keep Virginia Beautiful, Clean Virginia Waterways in collaboration with the Virginia Coastal Zone Management Program, Elizabeth River Project, Fairfax County Stormwater Planning Division, NOAA Marine Debris Program, Northern Virginia Regional Commission, Ocean Conservancy, PlanRVA, Prince William County, Public Works Department, Prince William Soil and Water Conservation District</p>
<p>Factor: Lack of coordination and communication (Knowledge/Information)</p>	<p>Action 1.1.1.2.: Continue to foster coordination, cooperation, and communication among government agencies (federal, state, and local), nonprofit organizations, research institutions, industry, and consumers through monthly announcements and monthly meetings of the Virginia Plastic Pollution Prevention Network, as well as the VPPPN Facebook page, online forums and websites.</p>	<p>Lead(s) and Partner(s) Clean Virginia Waterways in collaboration with the Virginia Coastal Zone Management Program, Chesapeake Bay Foundation (Clean the Bay Day), Eco Maniac Company, Northern Virginia Regional Commission, Ocean Conservancy, PlanRVA, Virginia Plastic Pollution Prevention Network</p>
<p>Factor: Lack of communication about projects, practices and research (Knowledge/Information)</p>	<p>Action 1.1.1.3.: Maintain and expand the inventory of litter-prevention and marine debris projects, best practices, social marketing campaigns, webinars, summits and research that are underway within Virginia to address marine debris from consumer sources, sharing through using the Mid-Atlantic Marine Debris Collaboration Portal and the Virginia Plastic Pollution Prevention Network website.</p>	<p>Lead(s) and Partner(s): Clean Virginia Waterways in collaboration with the Virginia Coastal Zone Management Program, Northern Virginia Regional Commission, Ocean Conservancy, PlanRVA, Virginia Plastic Pollution Prevention Network</p>

Each Strategy Has Actions

- 22 actions for consumer debris
- 17 actions for derelict fishing gear
- 13 actions for microplastics & microfibers
- 8 actions for abandoned and derelict vessels
- **Partnerships are key to accomplishing all of this!**

Solutions: Behavior Change (social marketing campaigns)

DEADLIEST OCEAN TRASH

TO: 

- 1 Fishing gear 
- 2 Plastic bags & utensils 
- 3 Balloons 
- 4 Cigarette butts 
- 5 Bottle caps 





CELEBRATE JOYFUL MOMENTS
WITH THE **UPLIFTING**
POWER OF **BUBBLES.**



THIS HORSE DIDN'T KNOW
THAT THERE WAS
A **BALLOON**
IN THE GRASS THAT
SHE WAS EATING.

RELEASED BALLOONS CAN HARM WILDLIFE.



Prevent Balloon Litter.org | MARCO | VIRGINIA AQUARIUM

Pledge Not to Release Balloons! 

Released Balloons Harm Wildlife.



Prevent Balloon Litter.org

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WATERMARK KEY LINES REPRESENT THE FINAL TEMPLATE. ALL TEXT PRINTS.

REMEMBER
A LOVED ONE
WITH A
**LASTING
MEMORIAL.**

**PLANT A TREE
INSTEAD OF
RELEASING
BALLOONS.**



Pledge Not to Release Balloons! 

Prevent Balloon Litter.org | MARCO | VIRGINIA AQUARIUM

THIS SEA TURTLE
THOUGHT SHE
SWALLOWED
FOOD
NOT A
BALLOON.

RELEASED BALLOONS CAN HARM WILDLIFE.



PLEDGE NOT TO RELEASE BALLOONS! 

Prevent Balloon Litter.org | MARCO | VIRGINIA AQUARIUM

 **Prevent Balloon Litter.org**
Inspirational, colorful, litter-free ideas to celebrate, to remember
and to honor the people who impact our lives.

VA Campaign spread to Mid-Atlantic via
Mid-Atlantic Marine Debris Work Group

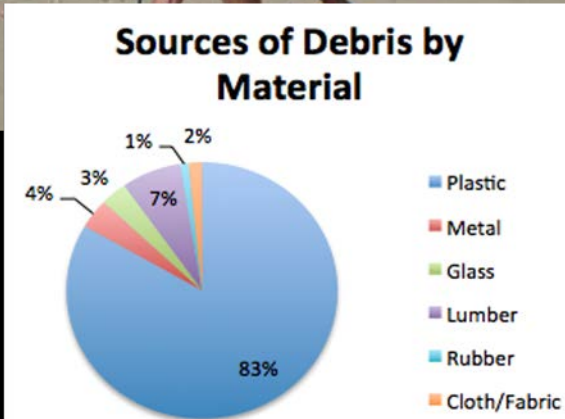
Solutions: Monitoring & Research

Monitoring Marine Debris
in VA's Coastal Zone 2014-2019

FY13 and 16 NOAA Grants



2022 Survey of attitudes
re: plastic pollution &
willingness to act



TRASH COLLECTED

Citizen scientist: Pick up all trash and record all items you find below. No matter how small the items, the data you collect are important for Trash Free Seas.®

Please DO NOT use words or check marks. Only numbers are useful data.

EXAMPLE:
Plastic Bags: ||||| IIII = 8

MOST LIKELY TO FIND ITEMS:

- Cigarette Butts: TOTAL #
- Food Wrappers (candy, chips, etc.):
- Take Out/Away Containers (Plastic):
- Take Out/Away Containers (Foam):
- Bottle Caps (Plastic):
- Bottle Caps (Metal):
- Lids (Plastic):
- Straws/Stirrers:
- Forks, Knives, Spoons:

FISHING GEAR:

- Fishing Buoys, Pots & Traps: TOTAL #
- Fishing Net & Pieces:
- Fishing Line (1 yard/meter = 1 piece):
- Rope (1 yard/meter = 1 piece):

OTHER TRASH:

- Appliances (refrigerators, washers, etc.): TOTAL #
- Balloons:
- Cigar Tips:
- Cigarette Lighters:
- Construction Materials:
- Fireworks:
- Tires:

TINY TRASH LESS THAN 2.5CM:

- Foam Pieces:
- Glass Pieces:
- Plastic Pieces:
- DEAD/INJURED ANIMALS:
- ITEMS OF INTEREST:
- CLEANUP SPOTS:
- Number of Trash

PACKAGING MATERIALS:

- 6-Pack Holders: TOTAL #
- Other Plastic/Foam Packaging:
- Other Plastic Bottles (incl. bleach, etc.):
- Strapping Bands:
- Tobacco Packaging/Wrap:

PERSONAL HYGIENE:

- Condoms: TOTAL #
- Diapers:
- Syringes:
- Tampons/Tampon Applicators:
- Gloves & masks (PPE):

DOWNLOAD

GET IT ON Google play Available on iTunes

Solutions: Recent Legislation



- Intentional balloon releases are illegal in VA as of July 1, 2021
- Polystyrene food containers must be phased out
- Localities can adopt 5-cent fee on plastic bags. Funds support local litter prevention
www.longwood.edu/cleanva/bags.html
- Litter tax raised after 44 years from \$10 to \$20 per business.



Solutions: Collaboration

VA Plastic Pollution Prevention Network

- 115 members from 75 organizations
- Non-profits, state and local government, businesses, universities
- Monthly meetings since August 2020



Fishing Line
Recycling, VA Beach



Lynnhaven River NOW's Pearl
Programs

Solutions: Collaboration

VA Abandoned & Derelict Vessel Work Group

- Leading to recommendations to build a comprehensive program

VA Shellfish Growers & State Agency Derelict Clam Net Removal Strategy

- MOU signed by MRC, Shellfish Growers, CZM and CVW



Strategy for Derelict Clam Net Removal on Virginia's Eastern Shore

Background

Virginia leads the nation in hard clam (*Myrcenaria mercenaria*) production and the Eastern Shore of Virginia is host to that vital industry. According to the latest Virginia Shellfish Aquaculture Situation and Outlook Report from August 2019, in 2018 clam growers brought \$38.8 million in farm gate value and about 175 jobs to Virginia's Eastern Shore.

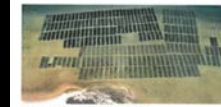
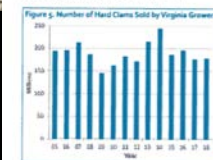


Photo by Virginia Institute of Marine Science

Photo by Virginia Institute of Marine Science

Virginia's hard clam aquaculture occurs on the Seaside of Virginia's Eastern Shore and the lower BaySide where salinity is sufficient to support clams. Clams are spawned in hatcheries and when they reach sufficient size are "planted" on subaqueous leases. Clams use a strong muscular "foot" to burrow into the sediment. Clam growers cover their clams with plastic mesh netting, which is essential to prevent predators such as whelks, rays and crabs from consuming them. Sometimes these nets can be re-used but they do become fouled with organisms. The nets are made of white or black, UV stabilized, polypropylene plastic and are 12, 14 or 17 feet in width and several dozen feet in length.

Solutions: Collaboration

Stormwater & Litter Workshops (4 so far)

- What types of trash interception devices work the best?
- What regulations do we need to reduce the flow of litter, especially plastics, into our waterways?



alamy

Image ID: JCT1994
www.alamy.com

Near Term Actions for Consumer Debris

1. **Legislation and policies: provide recommendations to support waste minimization**
2. **Facilitate implementation of Virginia's new laws and policies**
3. **Measure public support for new laws and policies that will reduce the sources of marine debris.**



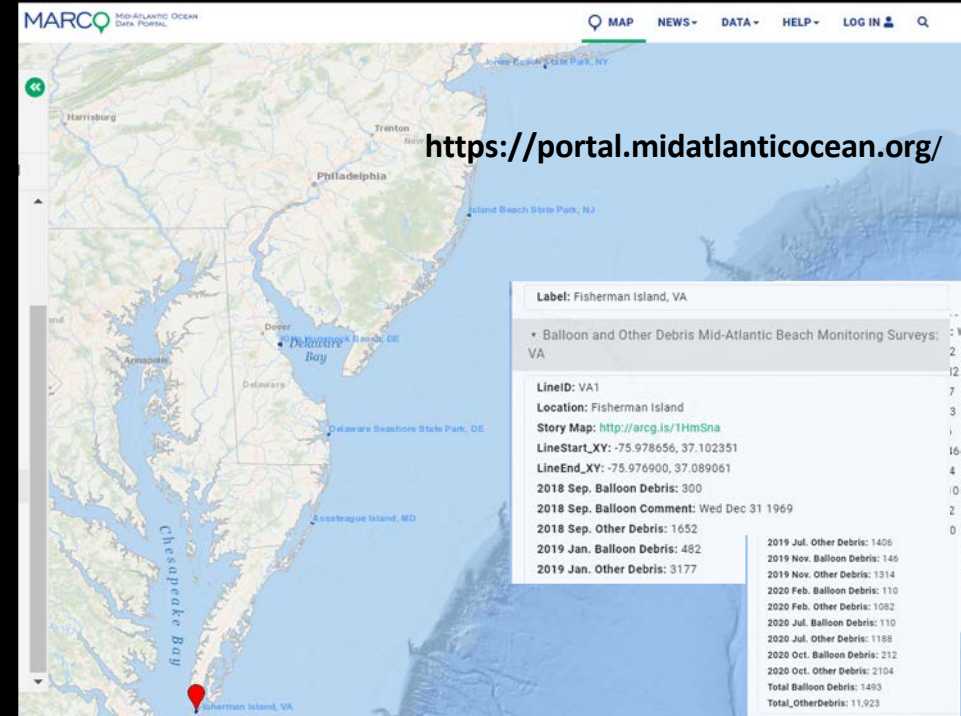
Near Term Actions for Consumer Debris

4. Promote and facilitate coordination, collaboration, and communication

5. Provide CZM financial support for mini pilot programs: e.g.; behavior barriers research, educational videos

6. Reach out to the media regarding intentional balloon release events.

Near Term Actions for Consumer Debris



7. Work with MARCO to promote use of reusable water bottles at beaches

8. Continue long-term monitoring and assessment of reduction efforts

Thank you! Questions?



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With Support from



<https://www.deq.virginia.gov/coasts/marine-debris>

OUTLINE (based on proposal)

LAURA 1:15 - 1:30 (15 mins): Overview of State and Mid-Atlantic Efforts

- Growing concern about plastic pollution, marine debris
- Sources : Four categories (consumer, DFG, Microplastics & fibers, ADV)
- Projected growth in single-use plastics
- Impacts
- VMDRP, 60 actions to address marine debris through behavior change, removal, prevention and legislation.
- Mid-Atlantic Marine Debris Action Plan
- Solutions

Local Efforts

- importance of partnerships to implement the plan
- on-the-ground local implementation
- successes and challenges