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County
Solid Waste,
Deputy
Director

PLASTICS IN THE OCEAN:

THE EVOLUTION OF CONSUMER
INFLUENCE AND THE
DEVELOPMENT OF LOCAL
SOLUTIONS





OVERVIEW

- Past
 - Brief history of Consumer Waste
- Present
 - Global Plastic Production Rates
 - Single-Use Plastics
- Where is Ocean Plastic coming from?
- The Role of Solid Waste Infrastructure
- The Future
 - What will happen if we continue?
 - What are we doing about it / What can you do?

THE PAST



PRODUCER DECISIONS AND CONSUMER DEBRIS

“Throwaway Living”

(Life Magazine 1955)



Throwaway Living

DISPOSABLE ITEMS CUT DOWN HOUSEHOLD CHORES

The objects flying through the air in this picture would take 40 hours to clean—except that no housewife need bother. They are all meant to be thrown away after use. Many are new; others, such as paper plates and towels, have been around a long time but are now being made more attractive.

At the bottom of the picture, to the left of a New York City Department of Sanitation trash can, are some throwaway vases and flowers, popcorn that none in its case saw. Marine checkbook, second the

a checkered paper napkin, a disposable diaper (seriously suggested as one reason for a rise in the U.S. birth rate) and, behind it, a baby's bib. At top are throwaway waver wings, fuel pans, paper tablecloth, guest towels and a sectional plate. At right is an all-purpose bucket and, scattered throughout the picture, paper cups for beer and highballs. In the basket are throwaway draperies, ash trays, garbage bags, hot pads, mats and a feeding dish for dogs. A pile of baby clothes and a pair of shoes for a baby.

My constipation
worries are
over!



Milk of Magnesia
gives more complete
relief

than single-purpose laxatives which have no effect on the acid indigestion that accompanies constipation. For Milk of Magnesia relieves both constipation and acid indigestion—two to four tablespoonfuls taken at bedtime work lazarely—without embarrassing urgency. So, when morning comes, you start the day feeling wonderful. Get Phillips' Milk of Magnesia—the best laxative money can buy.

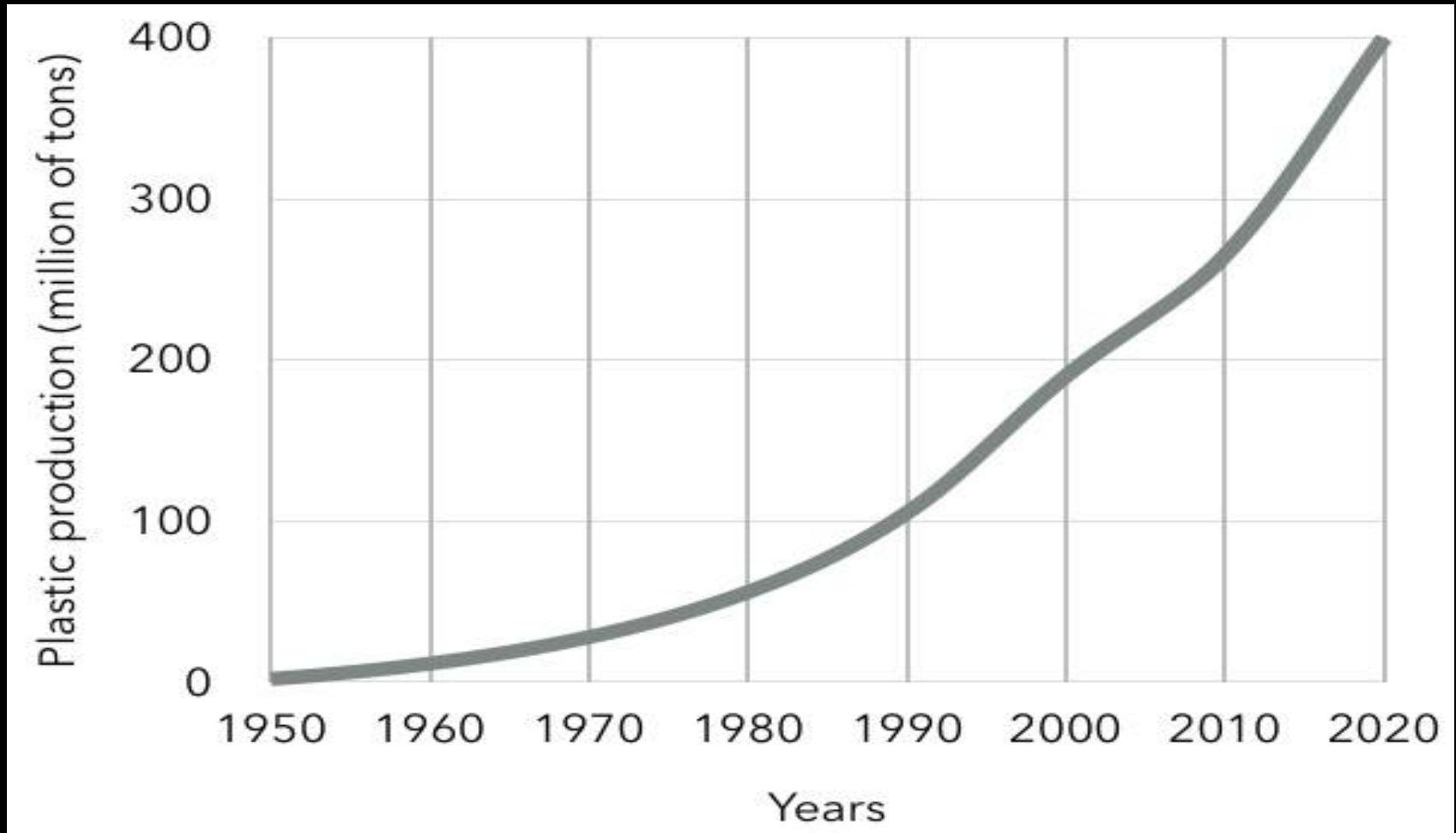
PHILLIPS'
MILK OF MAGNESIA

Liquid or Tablets

The convenient
1 Ounce Size.....\$1.19
The economical
12 Ounce Size.....\$1.19
The economical
12 Ounce Size.....\$1.19
Also available in tablet form
30 TABLETS.....\$1.19



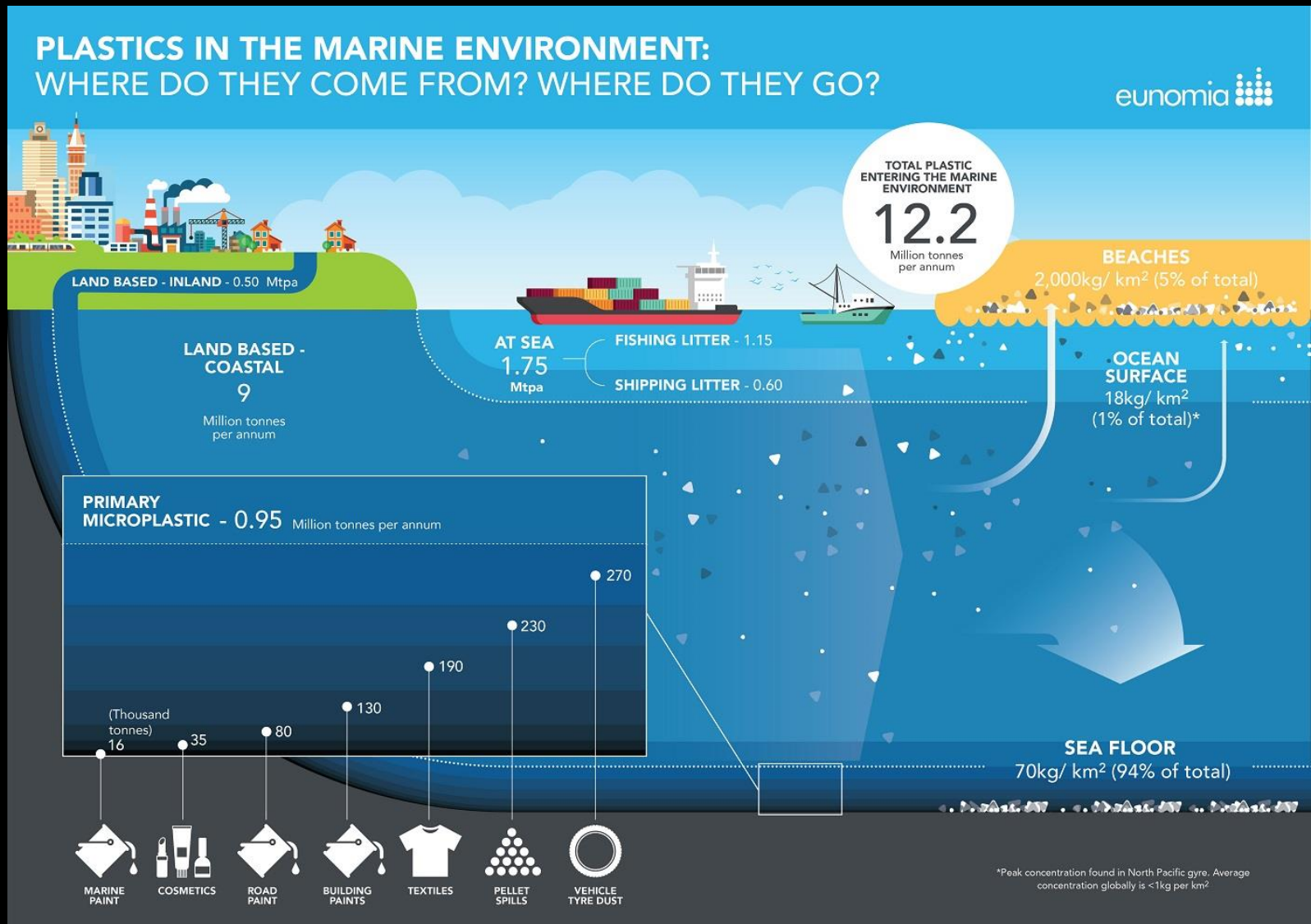
THE PRESENT







WHERE IS IT COMING FROM?





SHOW OF HANDS

How
many of
you have
Littered?

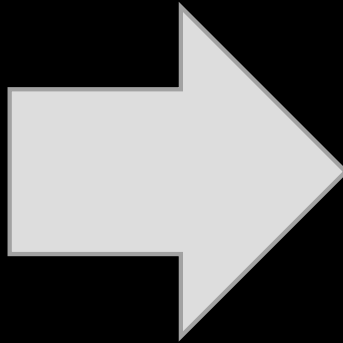




WHERE IS IT COMING FROM?

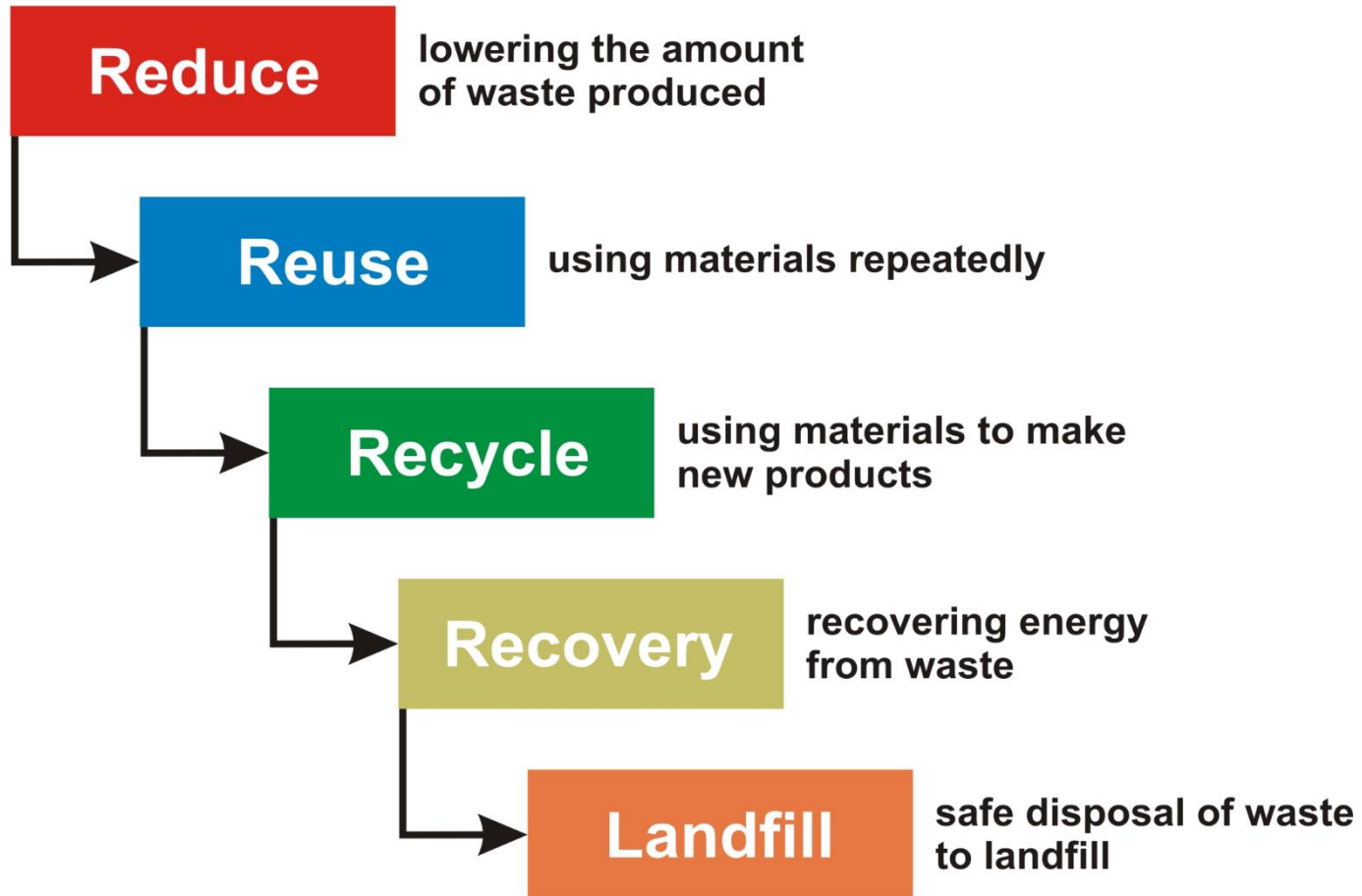
- Intentional Litter
- Unintentional Litter
- Improper / Not Enough
SW infrastructure

SOURCE TO SINK



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Most favoured option



Least favoured option



SINGLE-USE SHOW OF HANDS

- How many of you still use plastic bags?
- How many of you still use plastic water bottles?
- How many of you drink coffee?

PLASTIC BAGS

- 5 trillion plastic bags/yr.
- That's 160,000 a second!



LET'S TALK TRASH OVER COFFEE



- 25 Billion Polystyrene Cups/yr (US)
- Enough K-cups to Wrap the Earth 10x
- K-cups are \$35-50/lb!!
- NOT RECYCLABLE!!
- 138 BILLION coffee stirrers/ year (US)



SOLID WASTE INFRASTRUCTURE

- Where will your consumer waste go when you are done with it?
- Do you have access to disposal?
- Where are your materials going when you put them at the curb, etc.?

CONSEQUENCES
OF NON-
BIODEGRADABLE
MATERIALS

AND

NO ACCESS TO
PROPER SOLID
WASTE DISPOSAL











 alamy stock photo

H2CMYH
www.alamy.com



BEST MANAGEMENT PRACTICES

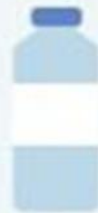
- Integrated SW Management
- Access to disposal
- Collection
- Twinning the bin
- Covered loads
- Outreach
- Analyze options often



THE FUTURE

PLASTICS PRODUCTION

2014



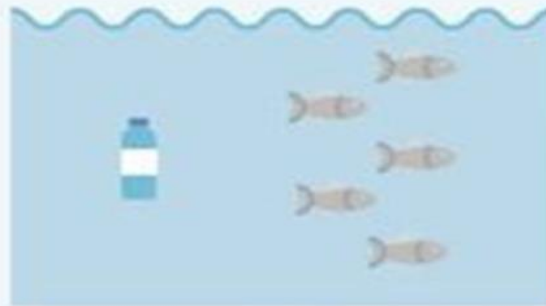
311 MT

2050

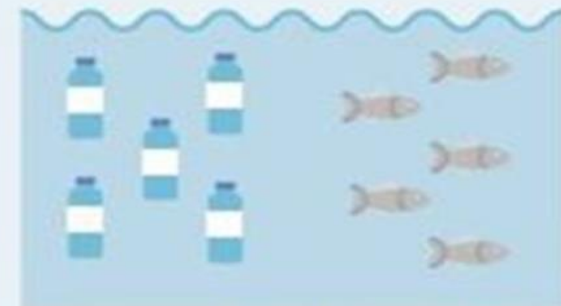


1,124 MT

RATIO OF PLASTICS TO FISH IN THE OCEAN¹ (BY WEIGHT)



1:5

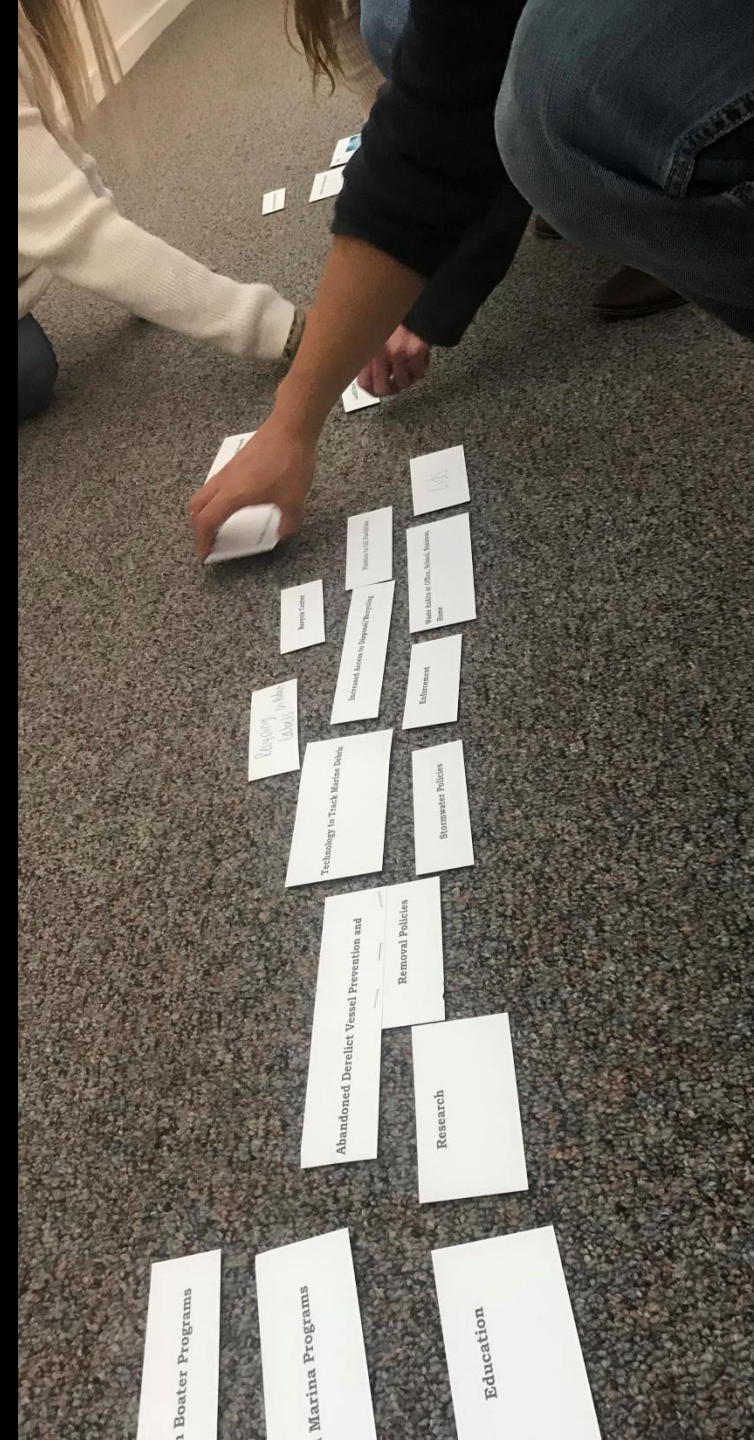


>1:1

Source: Plastics Europe; ICIS Supply and Demand; IEA World Energy Outlook (2015) global GDP projection 2013–2040, assumed to continue to 2050; Ocean Conservancy and McKinsey Center for Business and Environment, Stemming the Tide: Land-based strategies for a plastic-free ocean (2015); J. R. Jambeck et al., 'Plastic waste inputs from land into the ocean', Science (13 February 2015);

WHAT IS WORKING IN NC?

- COLLABORATION- NCMDS
- Grassroots Efforts!!
- Education – DUMML Curriculum
- Research – Universities, NGOs
- Planning – Reduction Strategy Planning Team
- Infrastructure
- Policy – Smoking ban (cig butt litter reduced by 1/2 in 1 year)
- Enforcement
- Incentive – NCGT, OFE
- Large and Small Scale Removal
- Cleanup BMPS – Reuse, tracking



N.C. Marine Debris Reduction Plan Workshop



North Carolina
Coastal Federation
Working Together for a Healthy Coast



ONLOW COUNTY
Est. 1734
**DEPARTMENT OF
SOLID WASTE**



Reduction Strategy Planning Team

Lisa Rider – Onslow County, N.C. Marine Debris Symposium

Gloria Putnam – N.C. Sea Grant

Paula Gillikin – N.C. Coastal Reserve & National Estuarine Research Reserve

Sara Hallas, Rachel Bisesi – N.C. Coastal Federation



ONSWLOW COUNTY
Est. 1734
**DEPARTMENT OF
SOLID WASTE**



**North Carolina
Coastal Federation**
Working Together for a Healthy Coast

<https://www.ncccoast.org/protect-the-coast/marine-debris/>



The State of Marine Debris in North Carolina:

An Assessment of Prevention and Removal Efforts



North Carolina
Coastal Federation
Working Together for a Healthy Coast



ONSWLOW COUNTY
DEPARTMENT OF
SOLID WASTE

Sea Grant
North Carolina



Duke
NICHOLAS SCHOOL OF THE
ENVIRONMENT
DUKE UNIVERSITY MARINE LAB

Develop coastwide marine debris strategies and actions.

N.C. Marine Debris Action Plan

Purpose: to facilitate the strategic reduction of marine debris in North Carolina through the collaborative efforts of diverse groups.

Goal: Reduce the amount of marine debris and its impacts in coastal North Carolina.

How this will be achieved:

Lead and Coordinate

Prevent Debris

Remove Debris

Increase Knowledge and Understanding

Prevent and Remove Abandoned and Derelict Vessels

Coordinating Strategic Marine Debris Efforts:

- These efforts are complimentary to the NOAA Southeast Marine Debris Reduction Plan
- With hurricane debris issues, Senate Bill 3 allocated funds for large scale clean up
- Concern from the General Assembly about ADVs that started the current WRC-led study on ADVs



N.C. Marine Debris Action Plan Next Steps

- Identify actions for 3-5 year time frame.
- Establish a Marine Debris Stakeholder Advisory Committee to track progress and maintain momentum.
- Present the NC Marine Debris Assessment and Action Plan to coastal and environmental management agencies and programs as a guidance document for leveraging resources.

WHAT CAN YOU DO EVERYDAY?

- ☑ Vote with your Wallet
- ☑ Pickup Debris
- ☑ Collect Data
- ☑ Educate Others



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CONTACT INFORMATION:

“Every time you
spend money,
you’re casting a
vote for the kind of
world you want.”

- Anna Lappe

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