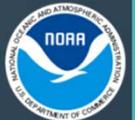


# Collaborating to Address Marine Debris in California: The NOAA Perspective

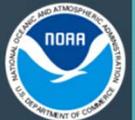
Sherry Lippiatt, Ph.D.

California Regional Coordinator  
NOAA Marine Debris Program  
Oakland, California



# NOAA Marine Debris Program

- Authorized by the Marine Debris Act of 2012 (33 U.S.C. 1951)
- Federal lead on marine debris
- Non-Regulatory
- 19 staff nationwide



# Marine Debris Definition



“Any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes”

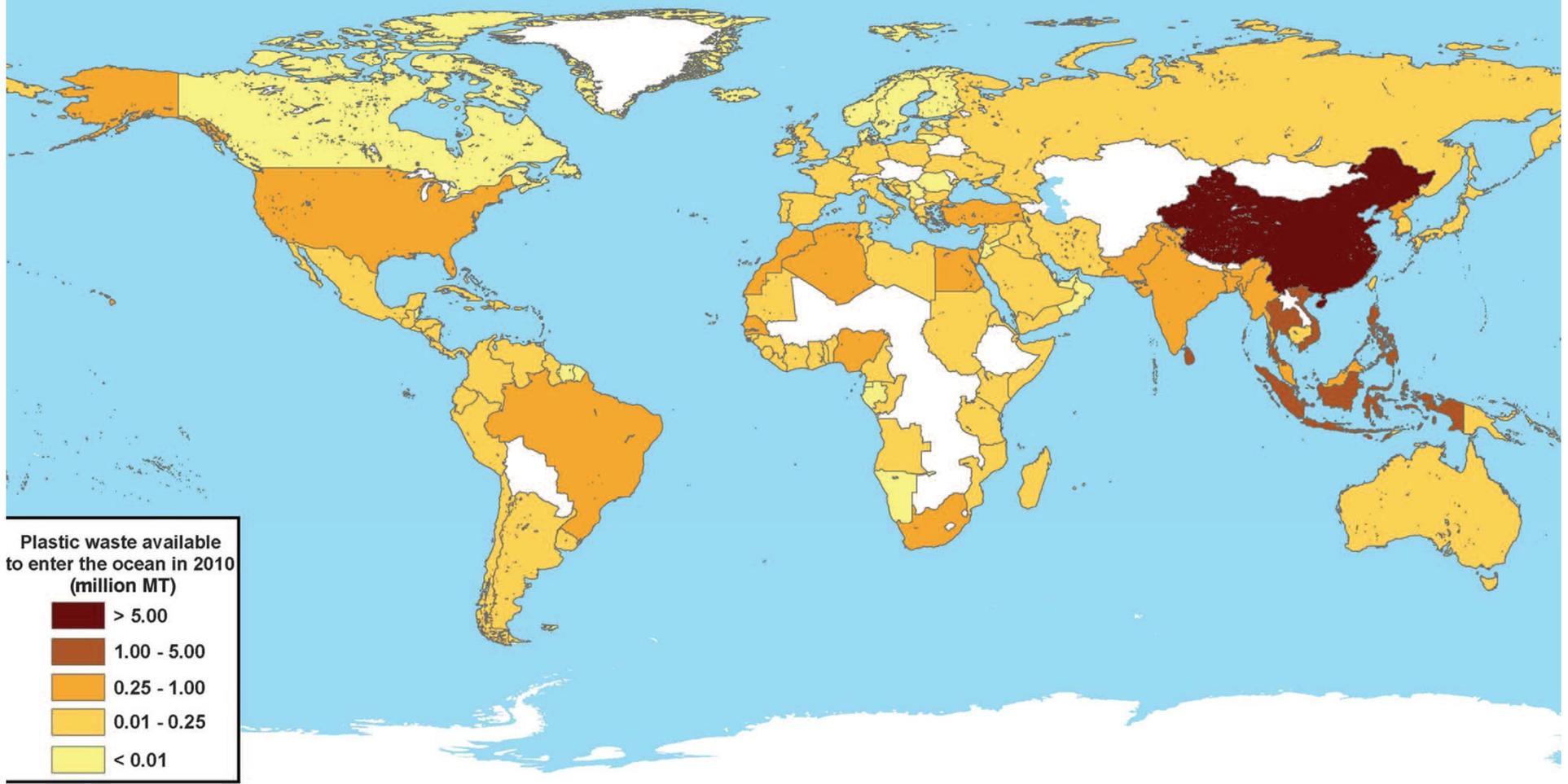
# Outline

- Frame the Issue
- MDP Focus Areas:
  - Prevention
  - Removal
  - Research
  - Coordination
    - ADV Infohub
    - Emergency Response
    - Marine Debris Action Planning



# How big is this problem?

- Based on global consumption and waste management, 8 million tons of plastic debris “LEAK” into the ocean every year (Jambeck et al., 2015)



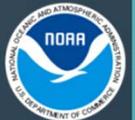
# How big is this problem?

8 million metric tons of plastic is equivalent to:

- five grocery bags filled with plastic for every foot of coastline in the world
- 58,789 blue whales
- 1.35 million African bush elephants

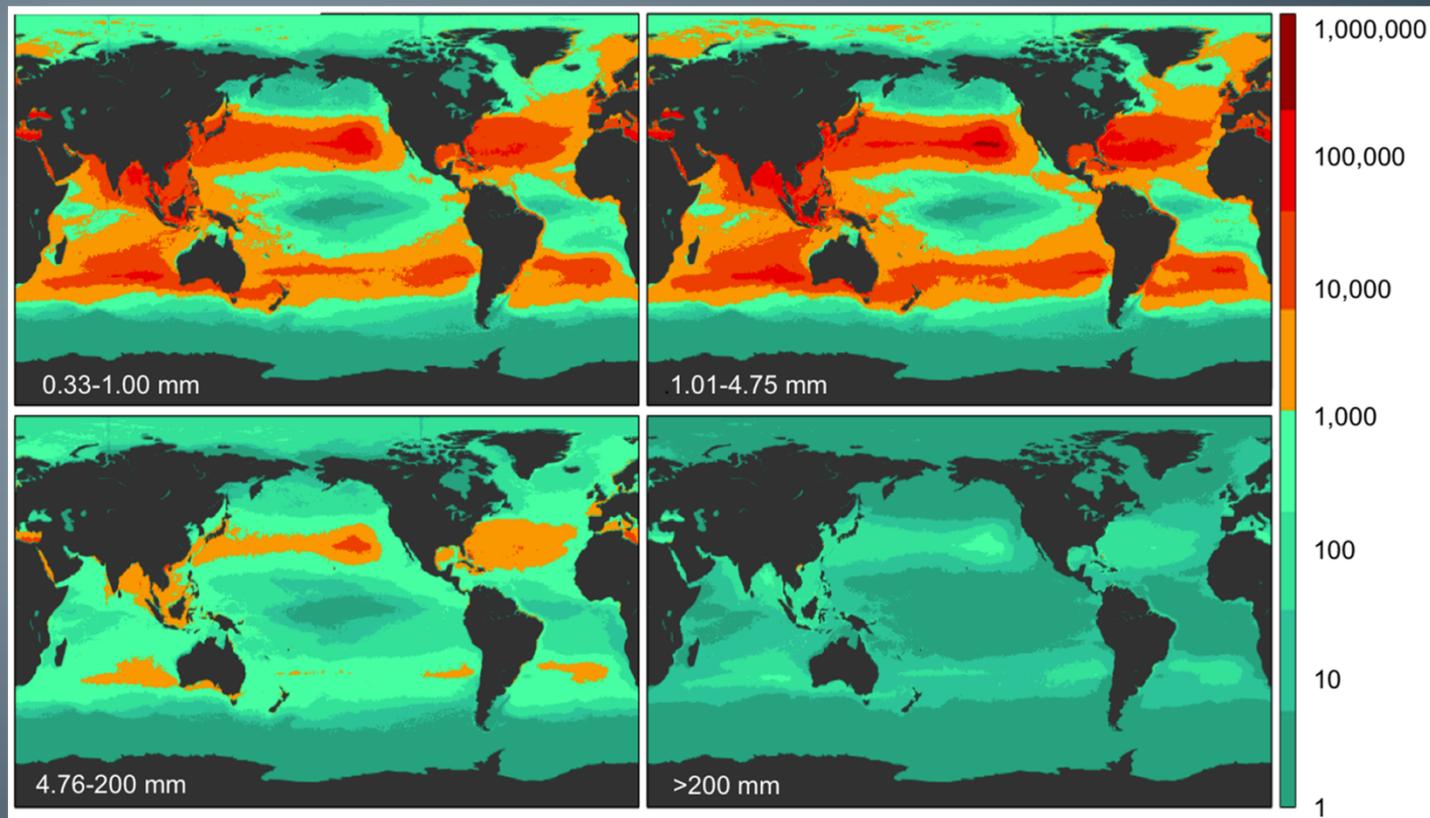


\*Annual estimates at current rates of consumption and waste management effectiveness



# How big is this problem?

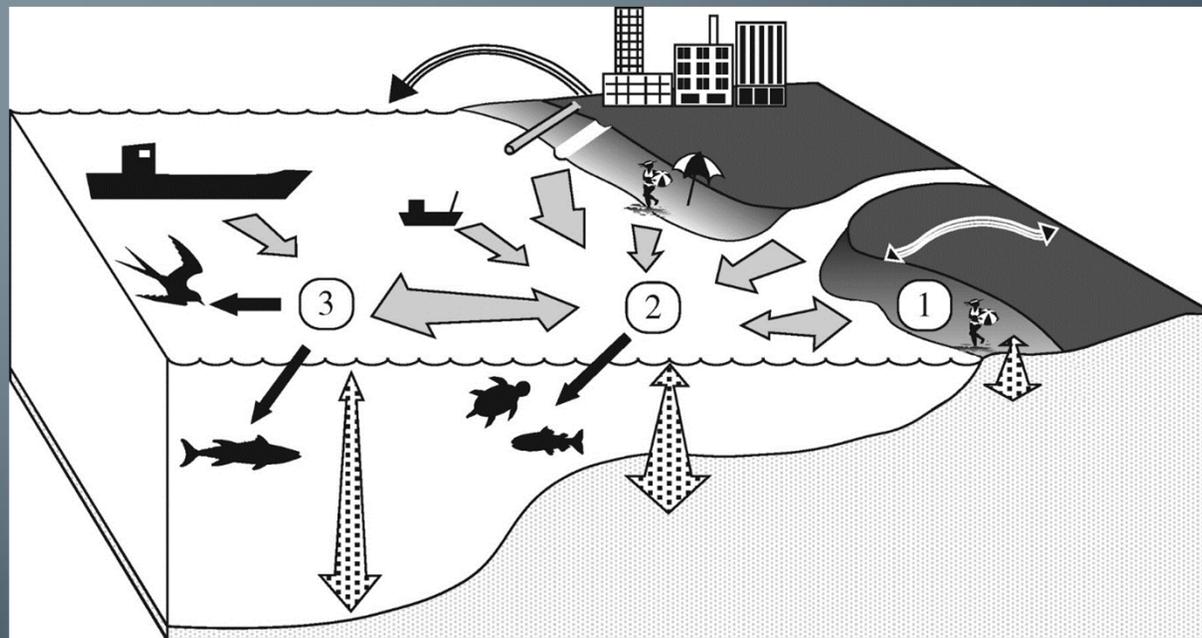
- Estimate over 250,000 tons of plastic floating on sea surface (Erickson et al. 2014)



Modeled floating plastic density (pieces /km<sup>2</sup>) in four size classes

# How big is this problem?

- “Missing” plastic: 20 to 2000 times more plastic is entering the ocean from land vs. floating at the surface
- Lifecycle of plastic has other reservoirs: shorelines, water column, sediments
- Estimates don't include other sources (e.g. ocean-based) or other debris types (e.g. ADVs, latex balloons, etc)



# Prevention: ReThink Disposable Project

- Partnership with Bay Area local govts and food businesses
- Conduct audits, suggest voluntary source reduction approaches, track cost savings over time
- Promote reusable containers
- Opportunity for public outreach at the point of sale



# Prevention: ReThink Disposable Project

**ReThink  
Disposable**  
STOP WASTE BEFORE IT STARTS  
A Project of Clean Water Fund and Clean Water Action

 **CLEAN WATER  
FUND**

Winner of the  
2015 Governor's  
Environmental  
and Economic  
Leadership  
Award!

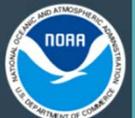
## 2015 Program Impacts

### 100 PARTICIPANTS:

- 90 food businesses
- 9 food trucks
- 1 high school institution

### OF JUST 30 BUSINESSES:

- 3 million pieces of disposable food service items are eliminated like cups, lids, straws, utensils, sugar and condiment packets!
- 70% avg. reduction in targeted disposable items
- 30,000 lbs. of total waste reduction
- \$3,000 average business saving



# Removal: Tijuana River National Estuarine Research Reserve

- Remove legacy debris accumulation
- Improve Trash Capture Infrastructure in Goat Canyon Sediment Basin
- 538 tons of debris removed over a 2-year grant



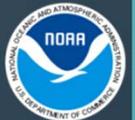
Photos: California State Parks

# Removal: Fishermen-led Dungeness Crab Pot Retrieval

- California Lost Fishing Gear Recovery Project (UC Davis / SeaDoc)
- >500 pots removed (Nov – Jan 2015)
- Earned \$41k through the buy-back of the pots
- Removals continue after 2016 and 2017 seasons

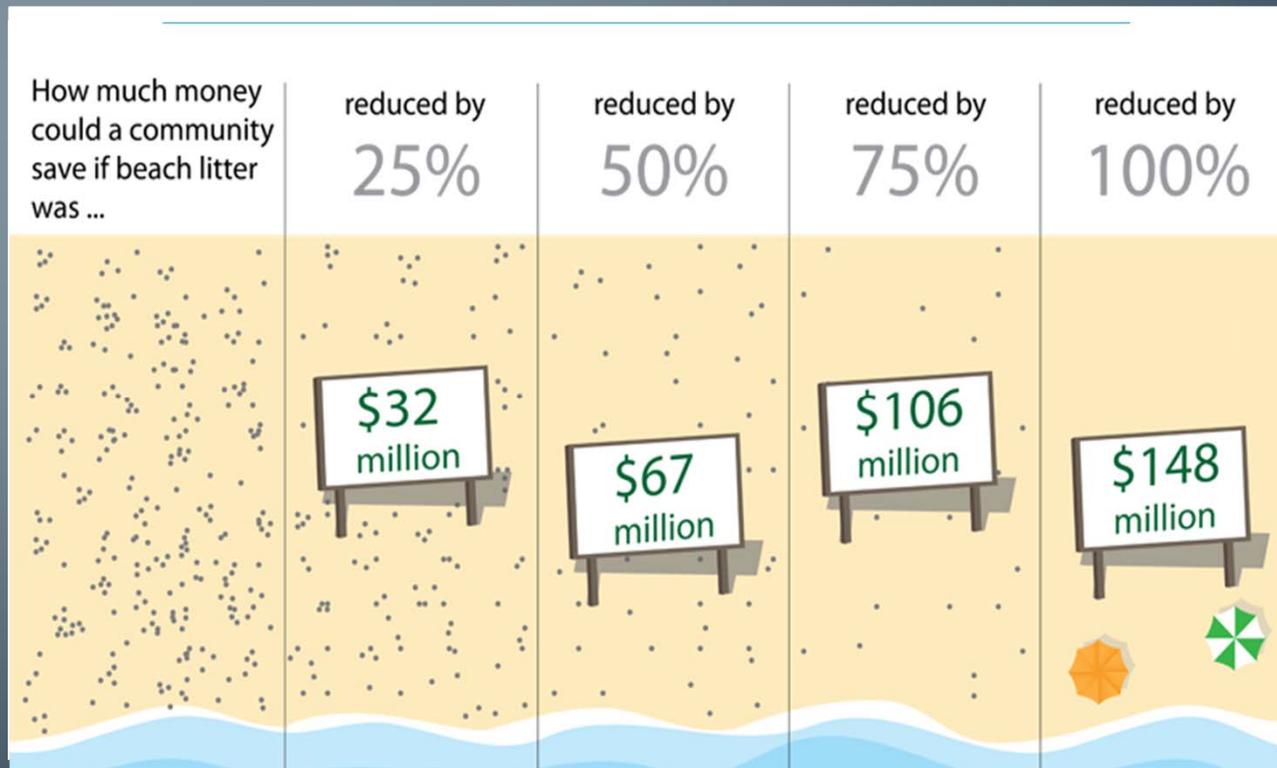


Photo: UC Davis

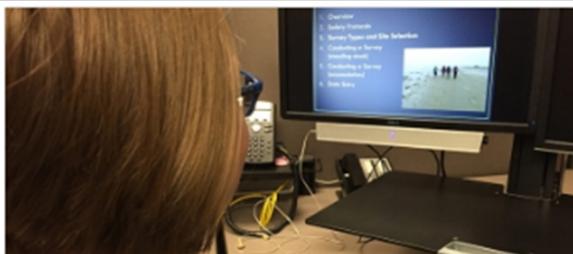


# Research: Economic Impact of Debris on Orange County Beaches

- Survey of factors in beach recreation decision-making
- Residents spend \$ traveling to cleaner beaches
- Next: losses in tourism revenue?



# Research: Citizen Science Shoreline Monitoring



## Tutorials

Start by [viewing our tutorial series](#) to learn more about the MDMAP, what it takes to get involved, how to safely conduct shoreline surveys, and how to submit your data.



## Protocol Documents and Field Datasheets

Visit our collection of [Protocol Documents](#) and [Field Datasheets](#) for resources to help you complete a shoreline survey.



## Protocol Quiz

Have you reviewed the tutorials and protocol documents?  
[Test your MDMAP knowledge](#) before enrolling!



## Enrollment

Sign up to get involved! Have you viewed the Tutorials and passed the Protocol Quiz?

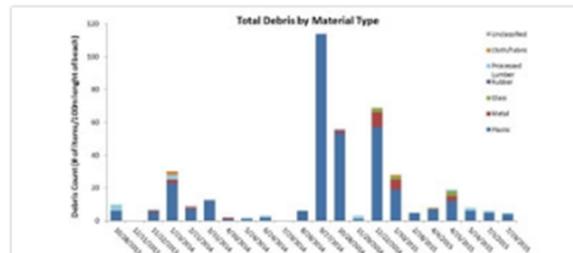
Yes

No



## Database User Guide

The [MDMAP Database User Guide](#) will help you navigate the MDMAP database at [mdmap.orr.noaa.gov](http://mdmap.orr.noaa.gov), where your data is submitted.



## Data Analysis Examples and Templates

Ready to visualize your data? Check out our [data analysis examples](#) and [Excel templates](#).



# Coordination: Severe Marine Debris Events

- March 2011 Earthquake and Tsunami in Japan
- State-based response plans: AK, WA, OR, CA, HI
- [disasterdebris@noaa.gov](mailto:disasterdebris@noaa.gov):
  - 1651 sightings
  - 70 confirmed through Japanese Govt (only 3 in CA)
- Spread of non-native species



Ornate wood debris found near Florence, OR  
(Photo credit: ODFW)



Vessel found in Crescent City, CA in April 2013  
(Photo credit: Redwood Coast Tsunami Working Group)



# Coordination: Abandoned & Derelict Vessels InfoHub

- Legal summaries for each state
- Library of ADV Documents
- Individual vessel and event-based case studies (e.g. Katrina)
- State contacts and links for more information

<https://marinedebris.noaa.gov/abandoned-and-derelict-vessels>

## Abandoned and Derelict Vessels in California



### Contact:

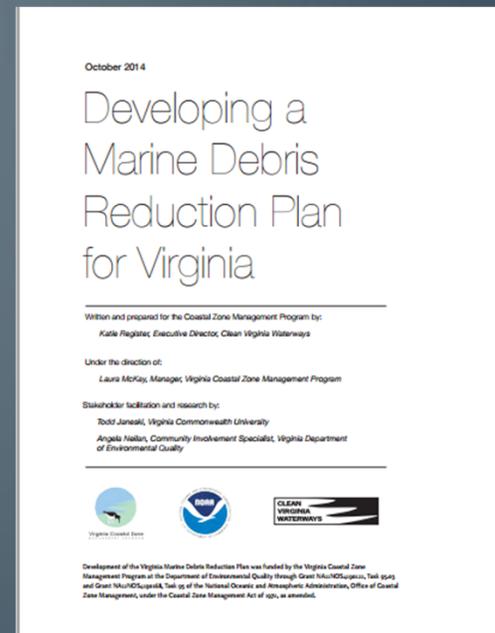
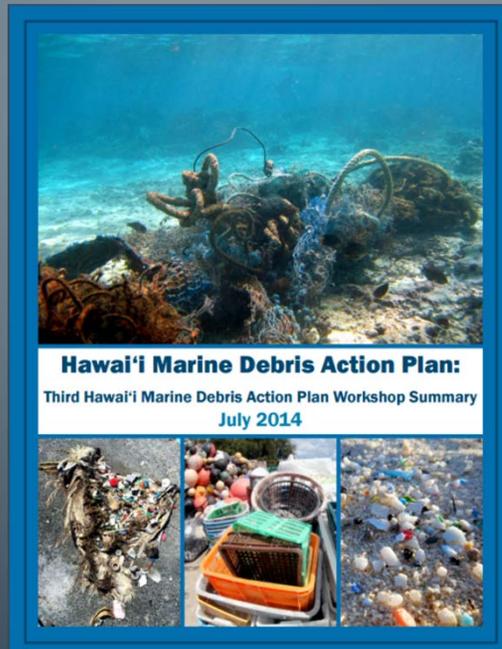
California State Parks Division of Boating and Waterways and The California State Lands Commission  
[Susan.Sykes@parks.ca.gov](mailto:Susan.Sykes@parks.ca.gov) (Div of Boating & Waterways)  
[Peter.Pelkofer@slc.ca.gov](mailto:Peter.Pelkofer@slc.ca.gov) (State Lands Commission)  
916-327-1825, 916-574-1850

ADV Program?	yes	✓
ADV Legislation?	yes	✓
State Funding?	yes	✓

NOAA Region      California

# Coordination: State Action Planning

- Regional planning documents to coordinate stakeholders
- Existing Plans: Hawaii, Great Lakes, Virginia
- In Development: Southeast (NC, SC, GA), Florida, Mid Atlantic (DE, MD, DC)  
Gulf of Maine (NH, MA, ME), Oregon



# Coordination: State Action Planning

- California: update & expand OPC's 2008 Implementation Strategy
- First workshop in Early 2017
- Goal: channel marine debris momentum and support into a collaborative, action-oriented plan developed by CA stakeholders
  - Identify regional priorities, gaps, and resource needs
  - Determine lead and partner organizations
  - Working Group provides a venue for communication and partnership



# Summary

- Multi-pronged approach to addressing marine debris
  - Research
  - Removal
  - PREVENTION
- Cross-sector communication and collaboration



# Thank you!

[Sherry.Lippiatt@noaa.gov](mailto:Sherry.Lippiatt@noaa.gov)

[www.marinedebris.noaa.gov](http://www.marinedebris.noaa.gov)

**IT IS CALLED  
GARBAGE CAN,  
NOT GARBAGE  
CANNOT.**

