

# **Talking Trash:** **A look at plastic pollution in** **Biscayne Bay's mangrove forests**

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# Who I am

- NY → Puerto Rico → Philippines → FL
- Bachelors of Science in Biology from UCF
- Hobbies: drawing/painting, baking, board games
- Studying plastic debris in mangrove forests



A dense mangrove forest with many thin, vertical tree trunks and a complex network of prop roots in the foreground. Sunlight filters through the canopy. A person is visible in the background, partially obscured by the trees.

**But why marine debris and  
plastics?**

## **THE PROBLEM**

**Plastics are accumulating on coastlines and in mangrove forests all over the world.**

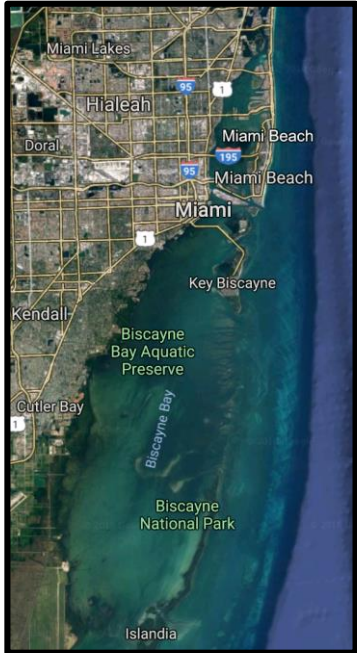
**What trash do you see in your daily life?**

**The effects on plants and animals (including us!) are still unclear.**

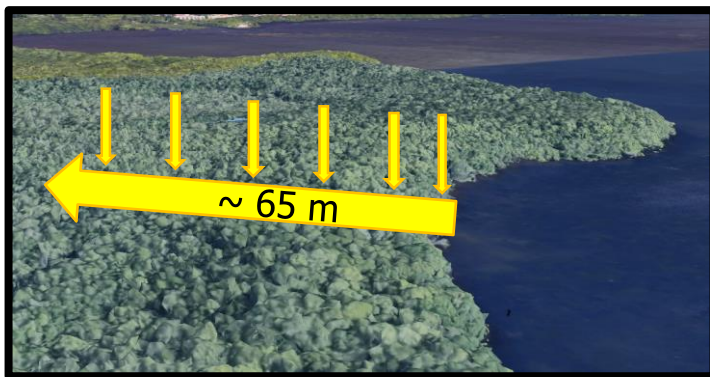
# Some of the major culprits:



# How much plastic is trapped in Biscayne Bay's mangroves?



- 2-m radius plots along transects perpendicular to the shoreline
- Survey meso- (5mm-2.5cm) and macro- (>2.5cm) plastics
- Record GPS location, plant measurements, lots of notes

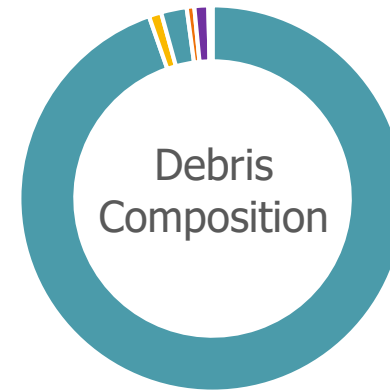


**Figure 1.** Field survey design



# Debris survey results

- 95% of all debris is plastic
- Abundance of debris increases with distance → plastic might be stored deep in mangrove forests




- Plastic
- Metal
- Glass
- Rubber
- Lumber
- Fabric

- Fragments
- Bags
- Straws
- Cups
- 6-Pack Rings
- Cigarettes
- Rope/Net
- Lures/Line
- Personal Care

- Food Wrappers
- Bottles
- Containers
- Utensils
- Cigar Tips
- Lighters
- Buoys/Floats
- Balloons
- Other

Most common debris: Fragments (65%), Food wrappers (8%), other bags (7%)

**Much more work to be done!**



**WHAT CAN YOU DO TO  
REDUCE MARINE DEBRIS?**



# 1. Avoid single-use plastics!

- **BRING REUSABLES:** bottles, bags, utensils, reusable containers/wrappers (like BeesWrap) etc.
- **REUSE NON-RECYCLABLES:** use plastic containers for storage, as pots for plants, or arts & crafts
- **REFUSE SINGLE-USE PLASTICS WHEN POSSIBLE:** Say NO to straws or plastic utensils at restaurants or plastic bags if you don't need them

## 2. Be smart recyclers!



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- KNOW WHAT'S RECYCLABLE IN YOUR CITY/COUNTY:  
Make sure your recyclables are accepted (and not sent to the landfill!)
  - **Miami-Dade county** (with a fun recycling game!):  
[http://bridgepages.cmgdigital.com/27000s/27757\\_curbside\\_recycling/index.html](http://bridgepages.cmgdigital.com/27000s/27757_curbside_recycling/index.html)
  - **Martin county:** <https://www.martin.fl.us/Recycling>
  - **Broward county:**
    - Single-family homes:  
<https://www.broward.org/WasteAndRecycling/Recycling/Pages/SingleFamilyRecycling.aspx>
    - Apartments:  
<https://www.broward.org/WasteAndRecycling/Recycling/Pages/MultifamilyApartmentandCondoRecycling.aspx>
- MAKE SURE YOUR FAMILY KNOWS WHAT IS RECYCLABLE: keep a list of the Do's and Don'ts in a place where everyone can see it

## 3. Read your labels!

- AVOID THESE KEYWORDS:
  - "Polyester"
  - "Polyethylene/PE"
  - "Polypropylene/PP"
  - "Acrylates"
  - "Microbeads"
- UNEXPECTED THINGS THAT MIGHT HAVE PLASTIC:
  - Clothes
    - Tips for reducing microplastics from laundry (go to minute 3:15) :  
<https://www.cnn.com/style/article/laundry-plastics-microfibers-world-oceans-day/index.html>
  - Deodorant
  - Face wash/scrubs
  - Toothpaste

## 4. Get involved!

- **JOIN OR START A CLEAN UP:** There are many community clean-ups happening all the time, Analisa can help you find some too!
- **EDUCATE YOURSELF:** Did any of the research I talk about today sound interesting? There is much still to learn about marine debris - not just in mangroves, but everywhere.
  - Find ways at school to get involved with projects and research. That's what I did!



**THANK YOU!**  
**Any questions?**