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
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

Debris Composition

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

Plastic Item Composition

- Fragments
- Food Wrappers
- Bags
- Bottles
- Cups
- Straws
- Containers
- Cigarettes
- 6-Pack Rings
- Utensils
- Cigar Tips
- Cups
- Lighters
- Rope/Net
- Straws
- Lures/Line
- Personal Care
- Other

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

Much more work to be done!

Paduani, in prep
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](https://www.martin.fl.us/Recycling)
  - **Broward county**:
    - Apartments: [https://www.broward.org/WasteAndRecycling/Recycling/Pages/MultifamilyApartmentandCondoRecycling.aspx](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’t’s 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) :
  - 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?