

Clean Waters, Clear Future

Sustainable Cyclones

Miami, Florida, USA

Abstract

We chose this project because marine debris is one of the most preventable issues and we can act on it directly in our community. Living in Miami, marine debris is something that is very noticeable when going to the beach or being by the water. Marine debris is a serious threat to our ocean health but it is preventable. We hypothesize that we can identify the sources of marine debris and increase awareness in our school and community, allowing us to reduce the amount of trash that ends up in our oceans. Through these changes and other solutions, we can see just less visible litter and also teach people its impact on the ocean.

Background & Motivation

Because we live near water and have seen how easily waste ends up on the ground and beaches. Marine litter is a serious environmental problem that affects sea life, polluted beaches, and can end up in our food through microplastics. This issue is extremely preventable since the cycle of marine debris typically begins on land when we change our habits we can make an enormous difference. Millions of tons of plastic enter the ocean every year and once it's in the ocean it becomes challenging to remove. Sea life can often mistake plastic for food and the microplastics they consume will never fully go away. This project gives us a chance to understand the problem and take action to prevent it before more reaches the water.

Methodology

To approach this project, we first researched different ways marine debris enters our oceans. We found that marine debris commonly comes from littering, poor waste management practices, stormwater discharge, and extreme natural events such as tsunamis and hurricanes. We then created a plan to reduce plastic use and littering. At first, we planned to focus mainly on posters and education on marine debris but as we progressed the team decided to include more hands-on ideas like organizing a community clean up and labeling which storm drains flow directly to the ocean. This helped include the whole community and also created a real impact.

Results & Discussion

Marine debris is a significant threat to our ecosystems. Globally, about 8 million metric tons of plastic enter the oceans annually which leads to the deaths of around 100 million marine animals each year. Additionally, about 42 million metric tons of plastic waste is produced per year, making it the largest waste producer in the world. In Miami, Florida, marine debris is especially serious due to its proximity to the ocean. In the area, plastic contributes to 97% of marine debris. What surprised us most was just how much of the debris was plastic and how small much of it was. Although we expected to find a lot of trash, we didn't realize that microplastics and tiny plastic fragments would make up such a large portion of it. One of the biggest lessons we learned is that marine debris doesn't just come from the ocean, it starts with the choices we make on land. Everyday items like plastic bags, wrappers, and bottles often end up in waterways through storm drains, littering, or overflowing trash bins.

Conclusion

The objective of this project was to understand the sources of marine debris and take steps to prevent it. We learned that most marine pollution begins with everyday choices and waste mismanagement. By reducing our plastic use and educating others we can help raise awareness and prevent waste from entering waterways. We discovered that most marine debris is made up of single-use plastics and a large portion of it originates from land-based sources like litter. This project had an impact on us by changing the way we think about our habits and showed us that one group can make a difference. For our community, this project can raise awareness and encourage people to think twice about their trash.

Next Steps

Our project showed the impact that small changes can have on marine debris. The next step in our plan would be to:

- Expand to social media in order to get a wider range of people
- Partner with local organizations like Miami Waterkeeper to organize larger community cleanups
- Make data collection easier by informing everyone of an app to track cleanups so groups across Miami
- Make it easier to properly sort and dispose of trash and recycling.

Acknowledgements

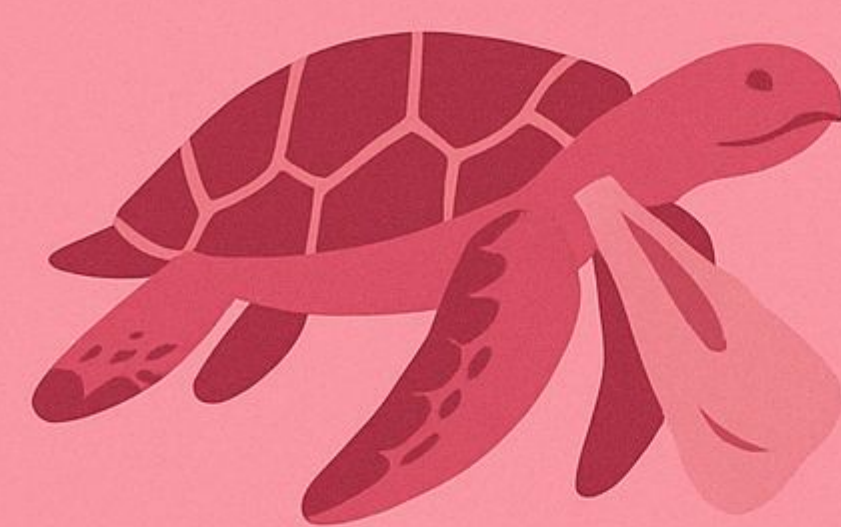
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STOP MARINE DEBRIS



KEEP OUR OCEANS CLEAN

Millions of tons of plastic waste enter the oceans each year, endangering marine life, Litter from land is the main source of this debris.

CAUSES

- Littering and illegal dumping
- Poor waste management practices
- Stormwater runoff

HOW YOU CAN HELP

- Reduce single-use plastics
- Dispose of trash properly
- Participate in beach cleanups
- Spread the word

ANNUAL PLASTIC WASTE INTO THE OCEAN



Beach Cleanup Plastic Count

