

# FLORIDA MICROPLASTIC AWARENESS PROJECT:

*Using citizen science to inspire behavior change*



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## Introduction

Prior to 2016, there were no data available to show how much plastic was in coastal waters around the state of Florida (USA). In September 2015, funding from an outreach and education grant from NOAA's Marine Debris Program enabled the creation of the Florida Microplastic Awareness Project (FMAP). Additional funding from Florida Sea Grant allowed expansion of the project in 2017.

## Objectives

FMAP has two primary goals. The first is to use citizen scientists to collect data about microplastics in Florida's waters. The second is to use those data to incentivize people to change their behavior and reduce the amount of plastic waste that they generate. 26 regional coordinators are partnering in this effort.

## Microplastics Methods

Detailed methods for water sample collection and analysis can be found in the FMAP Volunteer Manual on the "Get Involved" page of the FMAP website. These methods are also shown in videos on the project's YouTube channel (links available on the FMAP website).



Citizen scientists collect 1-liter water samples and filter them through 0.45 µm gridded filters. They then observe the filters at 40X magnification using a dissecting microscope. Fibers are tested by heating them over a candle flame and observing to see if they are singed (natural) or if they melt into a blob (plastic). Fragment identification is primarily made through feel of the object in the forceps.

*Heated (top) and unheated (bottom) fibers. Left image is of cotton fibers, right image shows polyester fibers.*



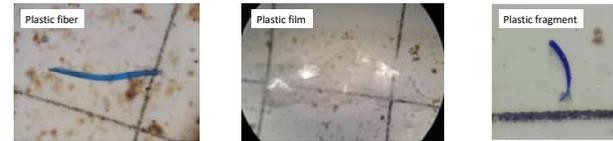
## Behavior Change Methods

A pledge containing eight ways that people can reduce the amount of plastic waste that they generate was developed. People are encouraged to take this pledge online (link through the FMAP website, QR code, or <http://bit.ly/plasticpledge>) or on paper at outreach events. We promote the month of September as Microplastic Awareness Month and generate daily posts for our FMAP Facebook page.



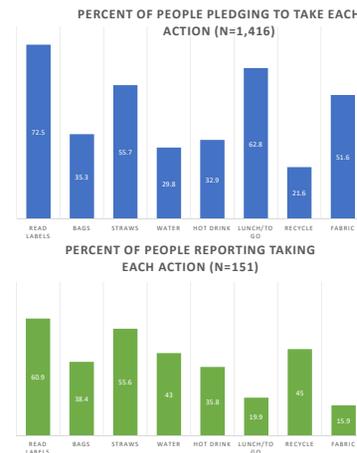
## Results

More than 1,300 water samples have been collected and analyzed. Of these, more than half are reported to contain at least one piece of plastic. Most of the plastics found have been fibers. Fragments and film have also been found.



Fifteen 1-liter samples of wastewater treatment plant effluent (St. Augustine, FL) have also been analyzed. These contained an average of 2.9 plastic fibers and 9.5 natural fibers per liter.

More than 1,500 pledges have been collected. About 10% of the people who have taken the pledge also completed a follow-up survey (within 3 months of taking the pledge). On average people pledged to make 3.7 behavior changes and report having made 3.3.



### 8 ways to reduce plastic waste

- Read labels and avoid personal care products that contain polyethylene
- Use paper or reusable shopping bags
- Avoid using plastic drinking straws
- Bring your own reusable water bottle
- Bring your own washable hot (or cold) drink cup
- Use foil or a washable container as a "to go" box at restaurants or when packing lunches
- Recycle as many plastic items as possible
- Choose natural fabrics instead of synthetics