

ECS-272: Project Proposal Winter 2021

Pratibha Agarwal | Charlie Ann Fornaca | Group 8

Introduction

Every year large amounts of plastic enters our oceans. As plastic is particularly durable, the mass of plastic debris in the world's oceans is steadily increasing – often with fatal consequences for countless sea creatures. Microscopic breakdown products from plastics, which scientists have only recently started to study in detail, may also pose a threat. Although the problem has existed for some time, there is still no effective strategy in place to turn the tide on marine litter.

A lot of this plastic happens to wash off on the beaches. Cleaning these beaches is necessary not only for beautification but also for the fact that it in turn provides economic benefit to local communities in the form of tourism dollars. Beach cleanups raise public awareness to the threat of debris more effectively than in less participatory public education programs, multiple studies show. Volunteers say the cleanups make them more mindful of how they dispose of their own disposables.

The "European Environment Agency" developed the "Marine LitterWatch"- app to keep track of all the efforts made to keep our beaches clean. It has data about organizations that made an effort to clean beaches along with specific data about beaches themselves such as length, name, country, location, type, and the different types of litter found on the beaches. The data also has different types of debris/litter classified into different groups depending on the nature/material of the litter.

We are planning to tell a story on the various kinds of litters found on beaches in Europe. Along with this, we want to be able to convey the demographics and change in the pattern of types of litter over the years.

Planned Visualizations

Basic Visualizations

Types of debris & litter found on beaches and in the oceans are listed in both datasets and classified into different groups depending on the nature/material of the litter. This will likely be our main basic visualization.

Ancillary visualizations could be data about the groups that gathered the data (there is a column in one of the datasets that names the clean-up group that produced the data). This information would give context to the information about the litter/debris that was found.

Geolocation data further puts these groups into context. Mapping these clean-up locations will be another basic visualization that we will implement.

Advanced Visualization

For our advanced visualization, we plan to produce a stream graph that shows the amount of litter cleaned up over time. The graph's streams will be grouped by the name of the body of water the litter and debris was collected from.

Storytelling Structure

Conveying the Story

We will tell our story using the martini glass format. The martini glass makes sense because information surrounding the story of the beach clean-up (geographic location, group information) would introduce the main visualization (type of debris/litter). The main visualization would have a mouse-over with further details.

The story is visually conveyed as you scroll down on the page. Much like how you dive deeper into the ocean, you will dive deeper into our story to discover what the clean-up groups found on our beaches and in our oceans.

Storyboard

You will first be provided with general information about litter and debris in our oceans similar to the information that we provided in the introduction of our project proposal.

Next we will present information about the groups that collected the data and performed the beach clean-ups. We will include information like how to contact these groups or donate to their cause.

The bubble chart that was denoted in our mock-up will likely be replaced with our advanced visualization of a stream graph instead.

Lastly, we dive deepest into the composition of materials the debris and litter is made-up of. We plan to use icons to represent the different categories.

