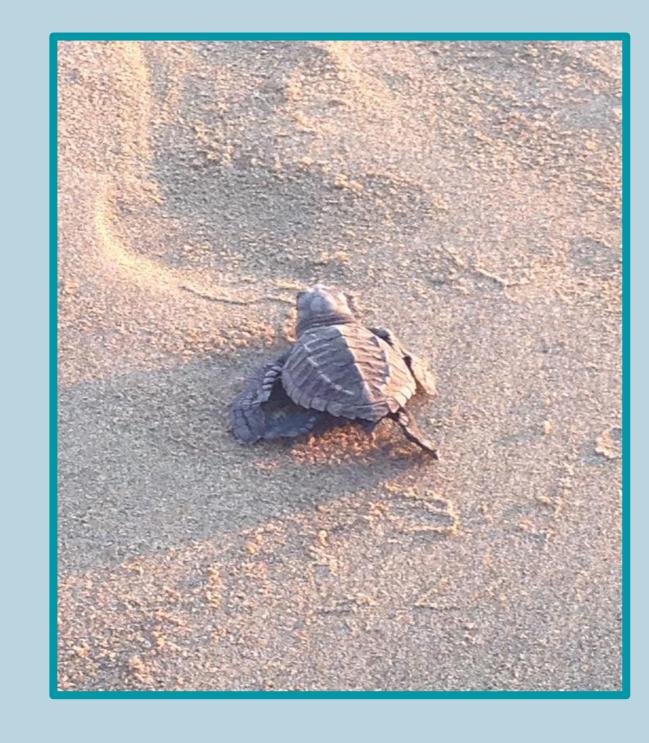
## Introduction

There are many issues with the ocean affecting the health of the creatures that inhabit it as well as the geographic stability of the oceans. It is of the utmost importance that the causes and effects of climate and ocean change be known by the general public. We hope to achieve these goals through the use of a public educational website that has easy to understand descriptions and visual aid for the main issues that we have found.

The main issues we are covering are:

- 1. Climate Change
- 2. Oil Spills
- 3. Ocean Acidification
- 4. Endangered Species
- 5. Plastic Pollution



Around 71% of our planet is covered by water. Oceans have a unique and fragile ecosystem that can easily be altered and damaged. It is our duty to protect the oceans; by helping it we are also helping ourselves!



Feel free to explore our website and learn more about Ocean Health!



#### **Grand Challenges Initiative**

## Ocean Health Education Project

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# - Methods -

Collecting data

Research papers were collected using Google Scholar. Some journals employed to find reliable papers were: The Marine Ecological Progress Series, Marine Pollution Bulletin, Marine Policy, Progress in Oceanography, ICES Journal of Marine Science

The papers collected were downloaded and added to a Dropbox file which facilitated collaboration between the team. The Dropbox file allowed us to add pdf files of the research papers and keep track of the papers collected. Around 120 research papers were collected

Web page development

Wix was used to make the webpage. This page provides templates, the template used was one that accommodates each of our sections. The webpage was divided into 5 categories. Images were gatherers using "Unsplash", which provides free images. Each page contained an explanation, effects and, possible solutions. All the articles gathered were included in the "Data" section, this directed our users to the original source of the paper.

Wix facilitated the collaboration between the team. Users will be directed to research papers by using our website. All the research papers collected were included on the website. Some papers were taken into account when describing each of our main 5 problems.

## Results and Conclusion

After collecting over 120 sources, as a group we have become very informed on each of our 5 main topics. We used our sources to transform the raw information into an easy informative website. We have found in the past that many sites have lots of raw data and are hard to access and understand. Our goal was to take the more difficult scientific information, and create easy to understand summarizations on the website. This way our site is easy to navigate, and easy to understand. It also features many sources so those who want to learn more, can access our research.

### Acknowledgements

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#### **Plastic Pollution**

- Plastic Pollution is plastic waste gathered in the environment.
- Almost 280 million plastic products are produced annually and much of them end up in landfills or the oceans.
- Scientists are emphasizing that without strong attention on plastic pollution, plastics do not disappear and will remain in the environments indefinitely affecting wildlife (Michelle Sigler, 2014).

#### Ocean Acidification

- Ocean Acidification is the lowering of the ocean's pH due to high concentrations of carbon dioxide.
- Ocean acidification can cause coral bleaching which does not only causes problems in the ecosystem but can also cause economic problems in regions that rely in tourism or fishing (Lam et al. 2019).

## **Climate Change**

- Climate Change is the evolution of weather patterns over time.
- Global warming is causing the rise in temperature of oceans, acidification of seawater, and the ocean absorbing excess CO<sub>2</sub> from the atmosphere.
- Oceans play a key role in regulating the earth's temperatures and air quality, but in turn causes the ocean to become negatively affected by this (Levin & Le Bris, 2015).

## **Endangered Species**

- Endangered species are defined as organisms that are at risk of becoming extinct.
- According to the International Union for Conservation of Nature, 5,652 maine species are considered at risk.
- Invasive species have been reported as the second most common cause of species extinctions (Giakoumi et. al 2019)

#### Oil Spills

- Oil tankers have become less and less of an oil spill threat in recent years but offshore drilling can still cause many problems.
- These spills harmful to the environment and people.
- They also are extremely expensive and time consuming to clean up.
- Most scientists agree that the best strategy for oil spill cleanup is a combination of dispersants and bioremediation (Dave et al. 2011).