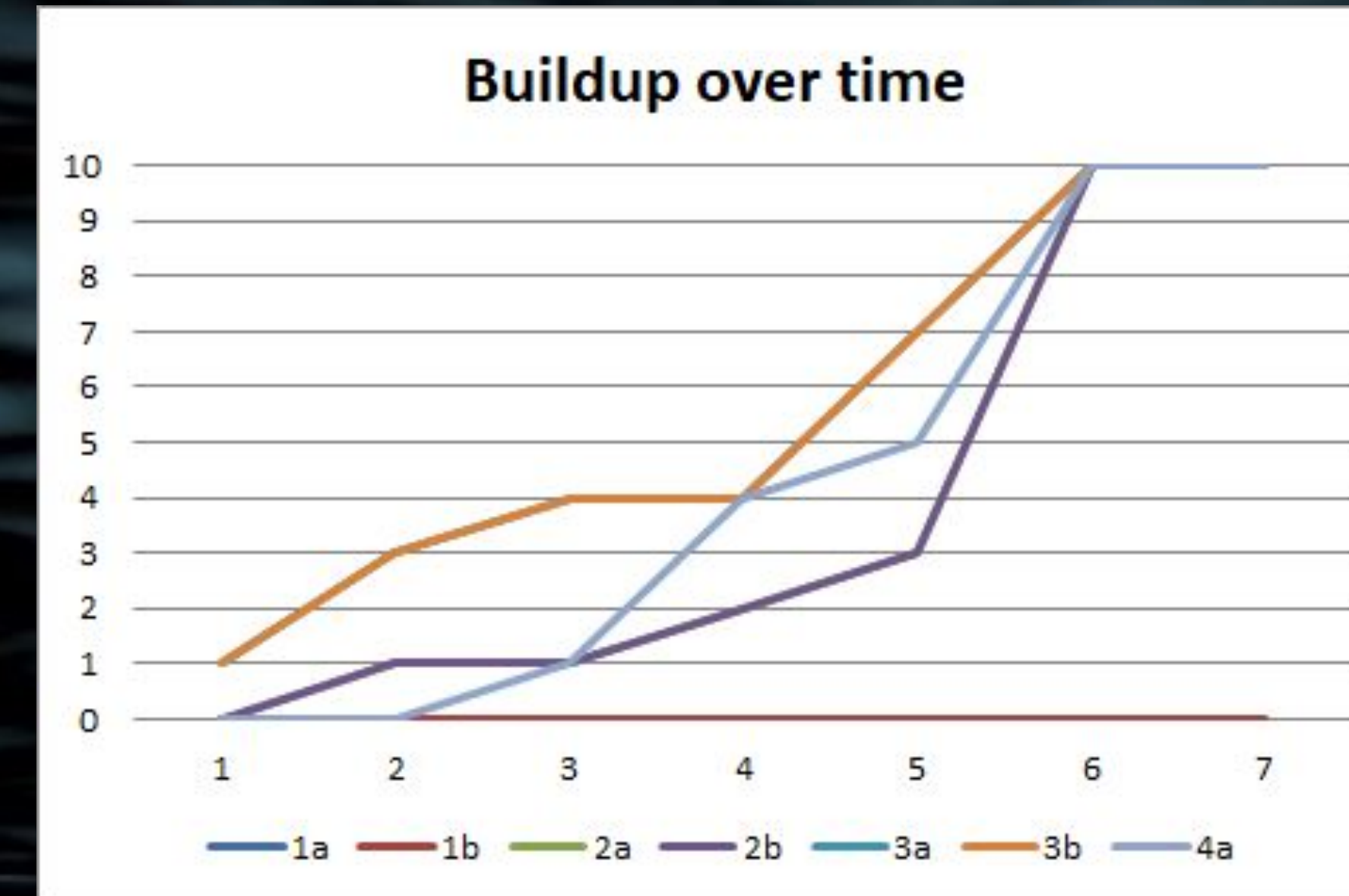
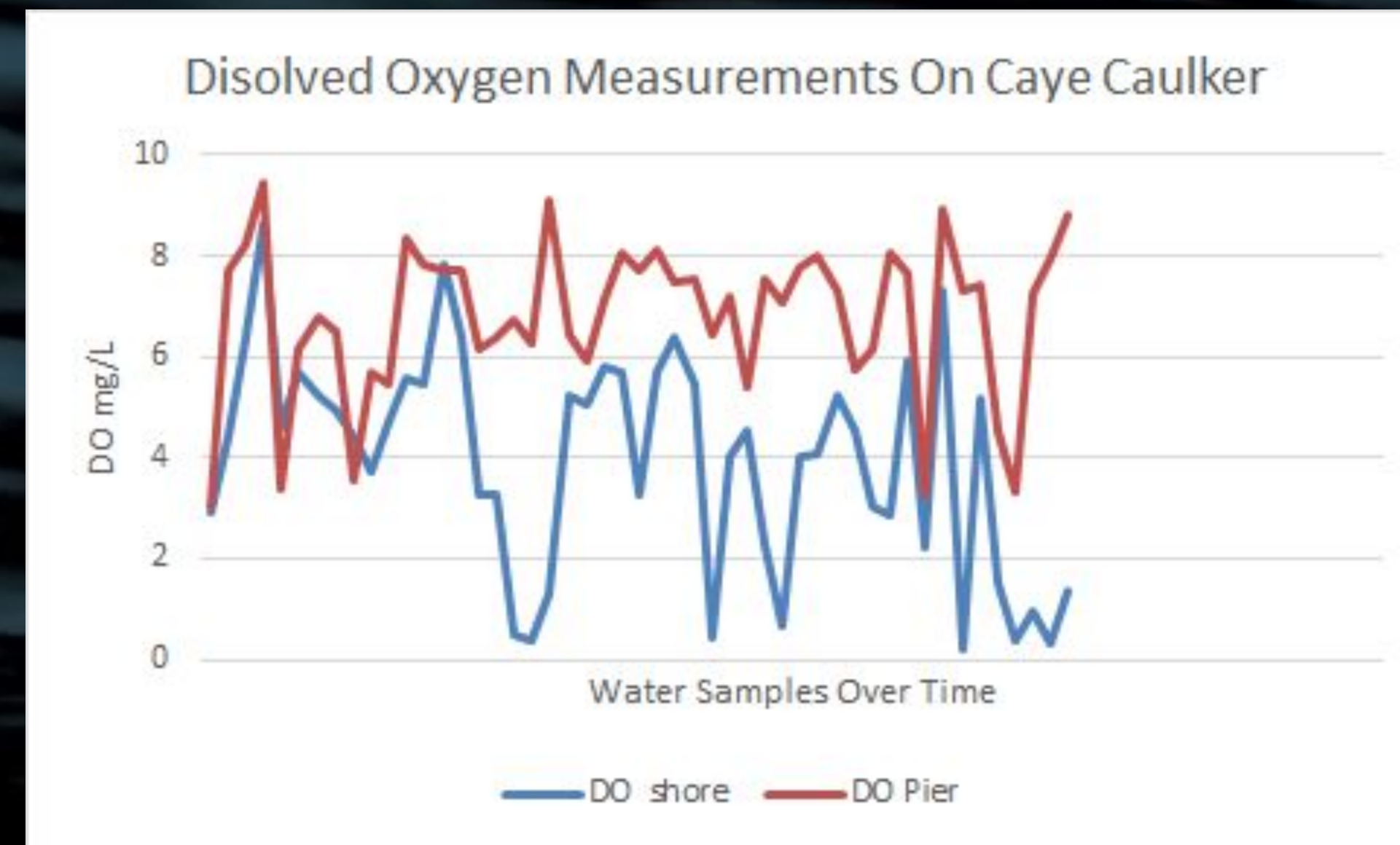


Environmental Impacts of Sargassum in Caye Caulker, Belize

Arielle Barnard, Marissa Molloy, Rona Reyes

Introduction

Caye Caulker, Belize, along with many Central American and Caribbean islands, has experienced a massive influx of Sargassum. While it serves a biological importance in its natural role, when it presents in abundance, it contributes to the degradation of the coastal marine life in Belize.



Causes & Solutions

Causes

- Illegal deforestation, leading to eutrophication
- Global climate change

Solutions

- Desalination process to make mulch
- Environmentally friendly deforestation
- Floating barrier devices that not only collect excess sargassum but pollution as well

Results

Observations and collections at the base and end of 7 different piers over a period of nine weeks showed:

- An increase of Sargassum buildup
- A general decrease in DO
- A dramatic difference in DO from the base to the end of the pier.

We did not gather substantial correlation between buildup and DO.

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Background

We received data from Mercedes Requena of Caye Caulker, Belize, a marine biologist who works with the local high school students on the island. They collected data from October - December 2018 using a dissolved oxygen meter.

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Effects

- Marine Life
 - When mass amounts of Sargassum reach shallow waters, the aquatic plants die off because the algae blocks sunlight used for photosynthesis.
 - The small fish that live in these aquatic plants suffocate because the Sargassum consumes all of the surrounding oxygen in the water in order to continue to thrive.
 - Dissolved oxygen lowers gradually as the buildup increases. This allows fish to adjust to the levels, instead of leaving that area. Toxic levels are generally <2mg/L.
- As Sargassum decomposes on the shoreline, it releases hydrogen sulfide gas. Exposure to high levels (100 ppm or higher) can lead to shock, convulsions, inability to breathe, rapid unconsciousness, coma, and death.