UNDERWATER OAK

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LIS 3021 Assignment 3b: Product Proposal

Underwater Oak Can Save Our Reefs

Ocean acidification, coral bleaching, and their long-lasting effects continue to threaten our marine ecosystems, but our modified coral oak farms can help reduce the impacts of today's severe global warming

INTRODUCTION

The topics we will cover:

- Ocean acidification and coral bleaching
- How Underwater Oak can help
- Product Budget
- Expected Outcomes

THE PROBLEM

OCEAN ACIDIFICATION

- ¼ Carbon Dioxide released by burning fossil fuels dissolves into the ocean
- Surface ocean waters have fallen 0.1 ph
- Equals a 30% increase in ocean acidity

CORAL BLEACHING

- Increase in ocean temperature and ocean acidification cause corals to release algae
- Results in coral losing their color and source of food and energy
- Most severe in the Southern Ocean

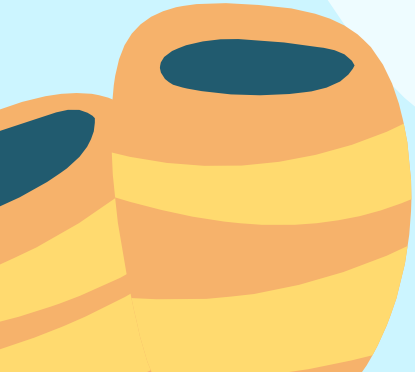
WHY THIS PROBLEM MATTERS

MARINE WILDLIFE

- Broad range of sea life dependant on reefs
- Plankton form the basis of food chains across our oceans

HUMAN FOOD SUPPLY

- Cascade of extinction means a big reduction in the human food supply



BEFORE & AFTER CORAL BLEACHING

Image courtesy of:
https://www.insider.com/great-barrier-reef-dying-photos-2017-3

CURRENT SOLUTIONS

U.S. National Oceanic and Atmospheric Administration has an automated system to warn coral reef managers when conditions are prime for coral bleaching - used to reduce other stresses on reefs

MONITORING OCEAN CONDITIONS DOESN'T REPLACE OUR REEFS

OUR PRODUCT

Underwater Oak, what it does, and the production cost

HOW IT WORKS

- Mature oaks responded to elevated levels of CO2 by consistently increasing their rate of photosynthesis
- Nearly identical to natural shape, color and variation of real coral
- Individual pieces can be placed together to create a coral “farm”
- Viable habitat for wildlife, providing space for the growth of food sources and shelter

REAL CORAL VS. UNDERWATER OAK

PRODUCTION, INSTALLATION AND REHABILITATION TIMELINE

PRODUCTION

3-6 months dependant on supply chain and # of pieces

INSTALLATION

2-4 weeks after pieces reach shipping destination

REHABILITATION

Marine plant and wildlife reinhabit the area in approx. 3 years

COMMON INSTALLATION LOCATIONS

Eastern Pacific Reefs in South America, Ago Reef in the Philippines, and the Great Barrier Reef

PRODUCTION COST BREAKDOWN

$130

Per mature oak tree needed

$200

Materials to color and coat wood

$300

Machinery to refine & shape wood

$900

Average Production Cost
Area of 10 SQ. Feet

$5,000

Average Shipping & Installation
Cost Southern Ocean

EXPECTED OUTCOMES

- Oceans with proper PH balance
- Proper growth of corals and mollusks
- Rise in commercial fisheries and sea life
- Increase in mollusk and shellfish life
- Decrease in global warming acceleration

CONCLUSION

Ocean acidification is an ever growing problem that negatively impacts marine life on a global scale. While we may not live in the oceans, many of the products we consume do.

Our product offers a solution to the man-made creations that have accelerated global warming and ocean acidification.

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