

The background is a light blue gradient with various underwater-themed illustrations. On the left, there are green seaweed-like shapes. In the top center, there is an orange starfish. On the right, there is a large, branching orange coral structure. At the bottom left, there is yellow branching coral. At the bottom center, there is a small black and yellow striped fish. At the bottom right, there is a green, U-shaped object resembling a sea slug or a piece of coral. Several light blue circles of varying sizes are scattered throughout the background, representing bubbles.

UNDERWATER OAK

Bazil Albrighton, Trey Bertolami, Maggie Oaks,
Jordan Alves

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



The background features a light blue gradient with several light blue circles of varying sizes scattered throughout. On the left side, there is a stylized orange coral reef structure. On the right side, there is a large, irregular light blue shape that resembles a splash or a bubble.

INTRODUCTION

The topics we will cover:

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

THE PROBLEM

OCEAN ACIDIFICATION

- 1/4 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



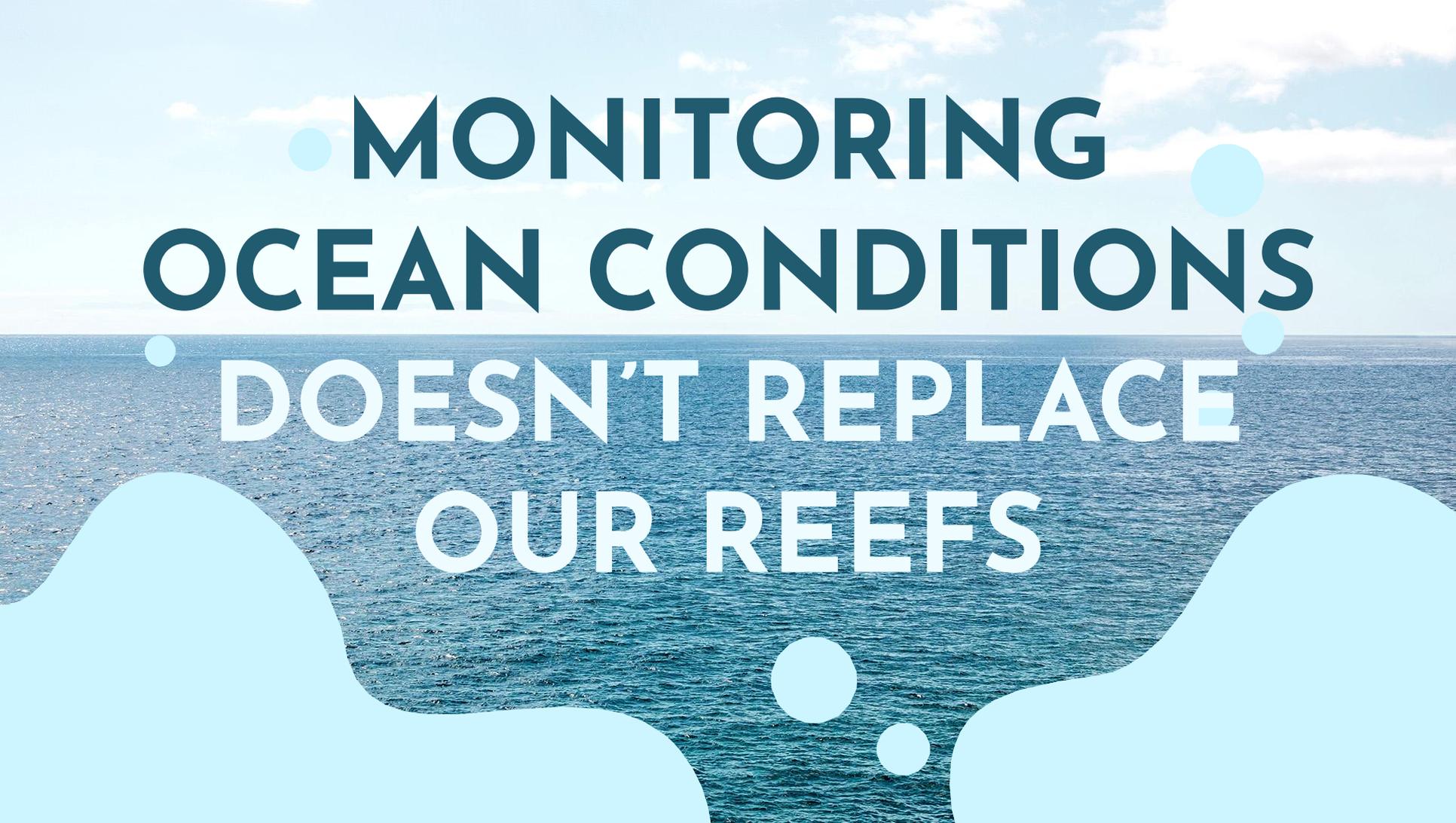
BEFORE & AFTER CORAL BLEACHING

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

The background is a photograph of a vast, deep blue ocean under a bright sky with scattered white clouds. The horizon line is visible in the middle. Overlaid on the image are several decorative elements: a large, light blue, wavy shape at the bottom, and several smaller, solid light blue circles of varying sizes scattered across the scene. The text is centered and reads:

**MONITORING
OCEAN CONDITIONS
DOESN'T REPLACE
OUR REEFS**

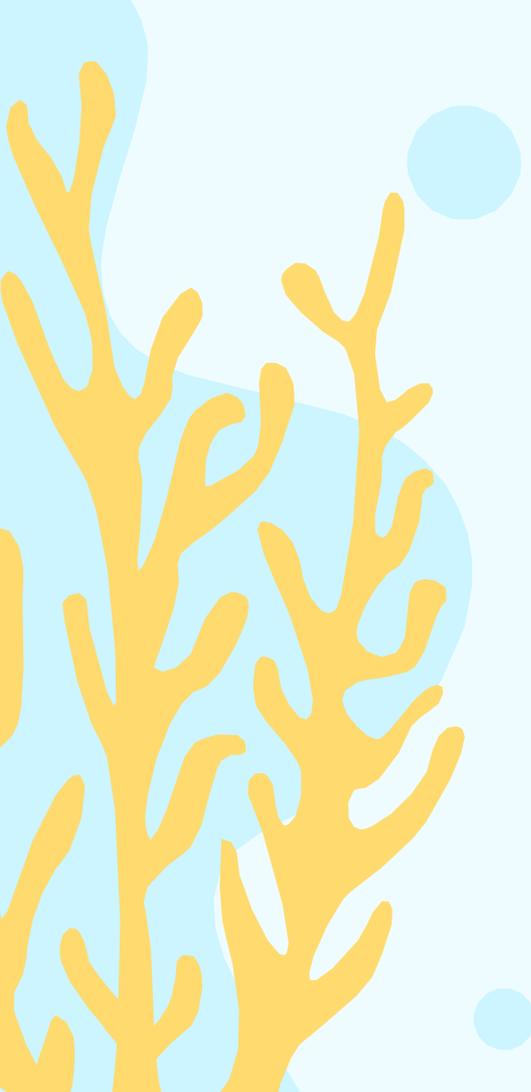
The background is a light blue gradient with several circular shapes of varying sizes, some light blue and some white, scattered throughout. On the left side, there is a large, stylized orange coral structure with several thick, branching arms. On the right side, there is a large, dark blue coral structure with a more intricate, branching pattern. In the center, there are several small, stylized green fish swimming in different directions. The overall aesthetic is clean and modern, with a focus on natural elements.

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

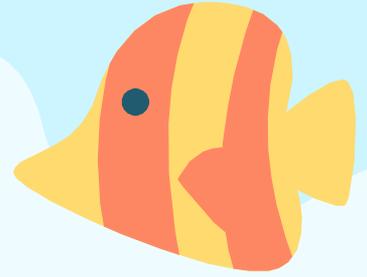
2-4 weeks after
pieces reach
shipping
destination

REHABILITATION

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



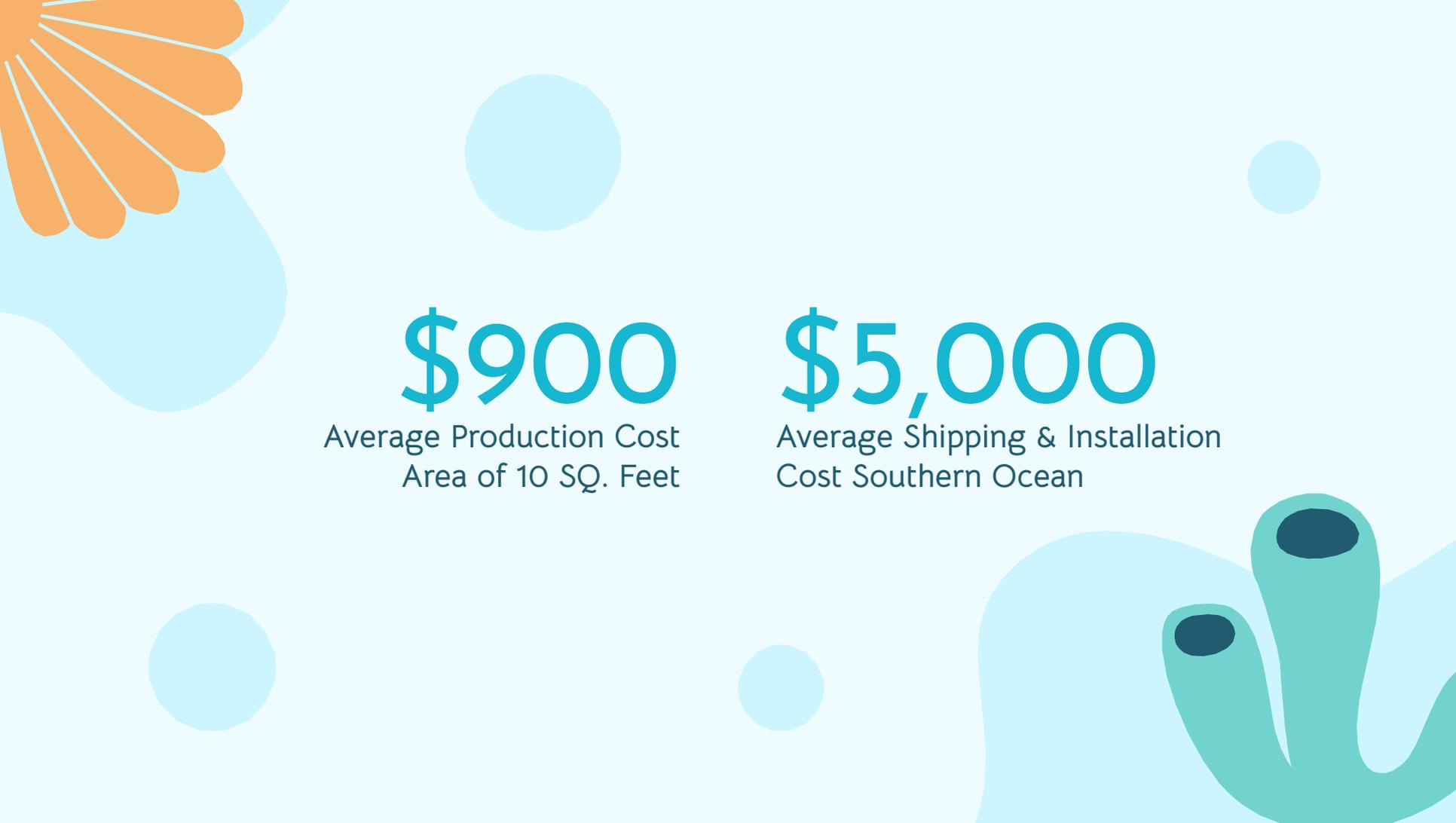
COMMON INSTALLATION LOCATIONS



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

PRODUCTION COST BREAKDOWN





\$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
- 
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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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