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# Focus on Ecological Improvements & Monitoring in the Design of a Beach Stabilization & Enhancement Project

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Kevin MacIntosh

August 4, 2018

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# Site Photos



# Project Objectives

1. Protect & Enhance Marine Habitat



2. Improve Site Drainage

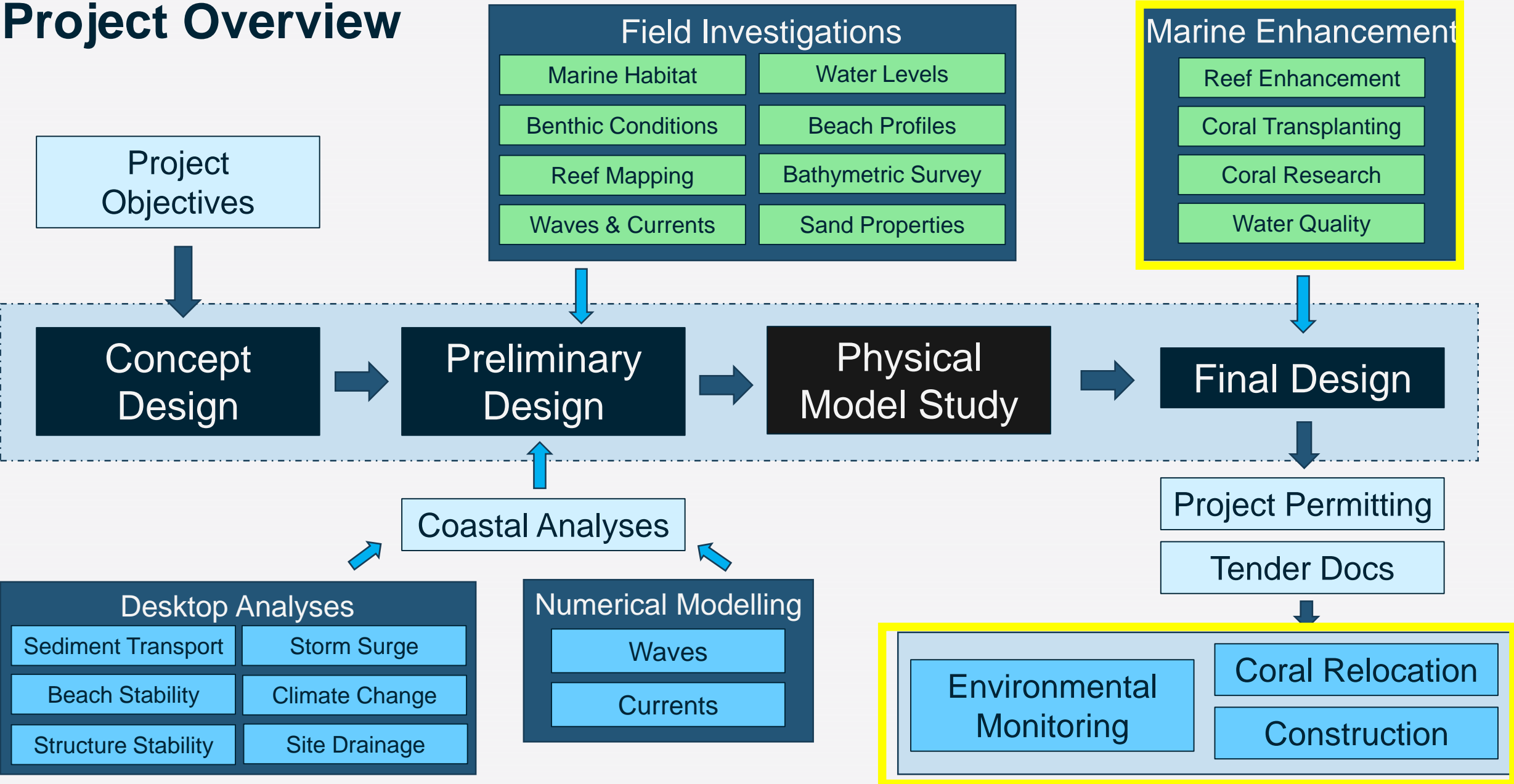


3. Expand Beaches and Improve Water Access

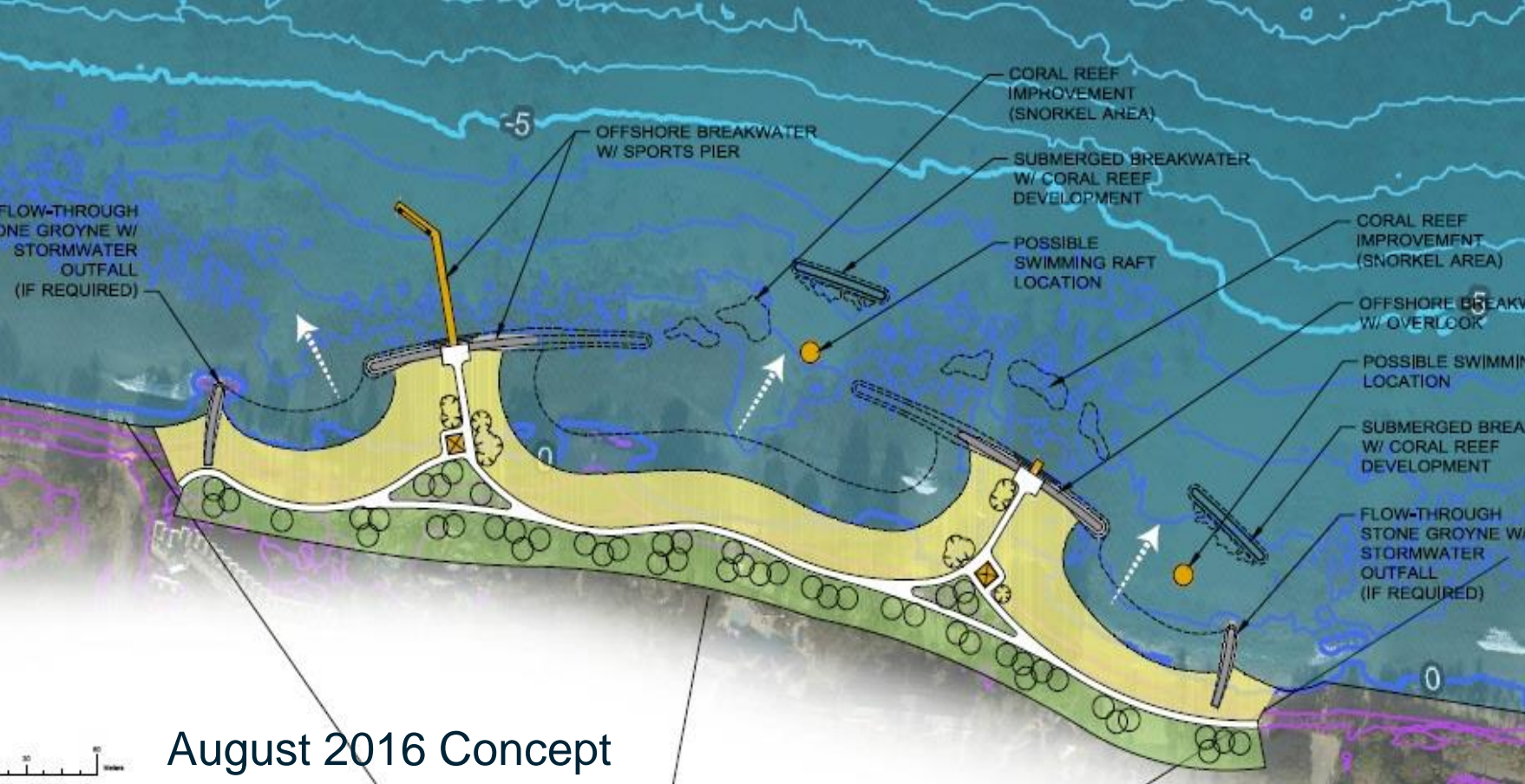




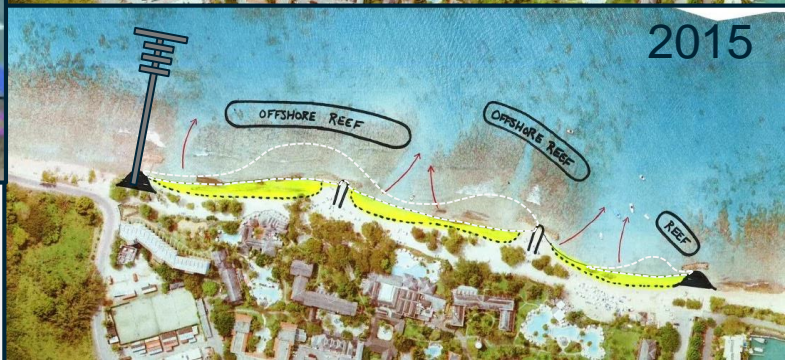
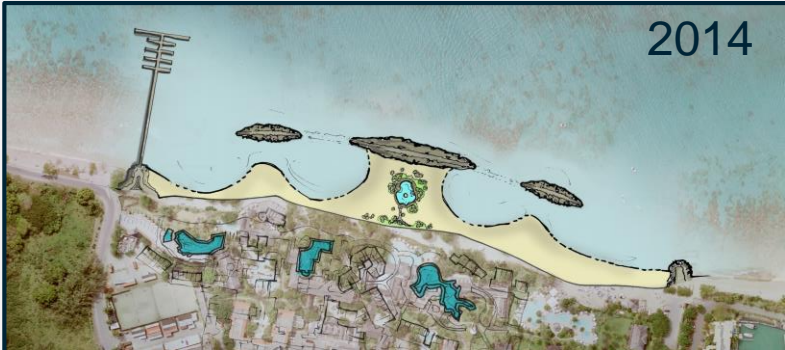
# Project Overview



# Concept Development: 2015-2016



August 2016 Concept





# “Beaches” Barbados

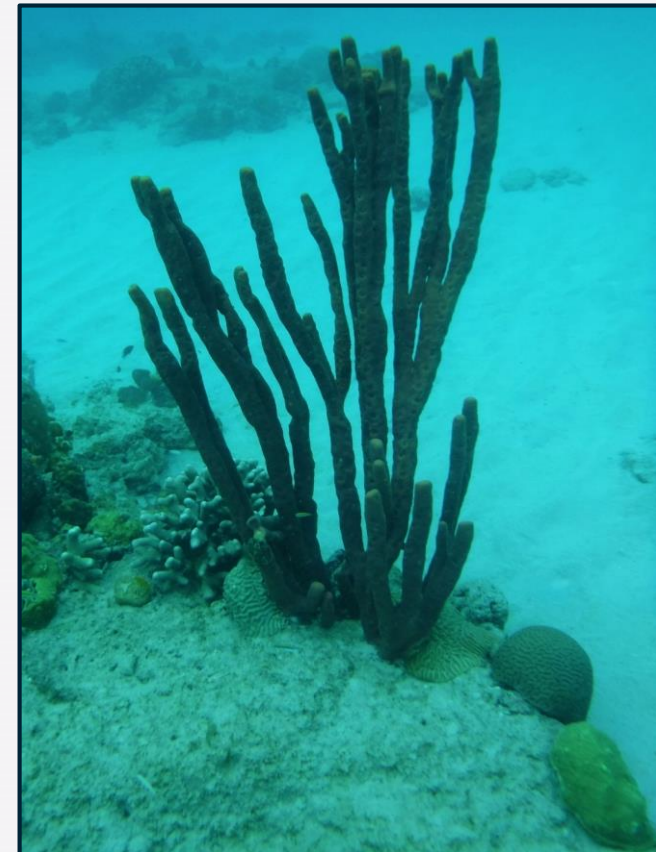


4/14/2016

Google Earth Image April 2016,

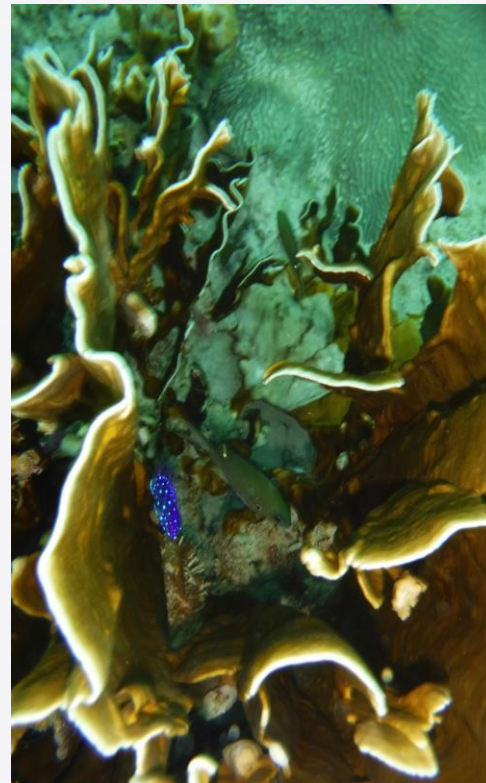


# Field Investigations: Marine Ecology



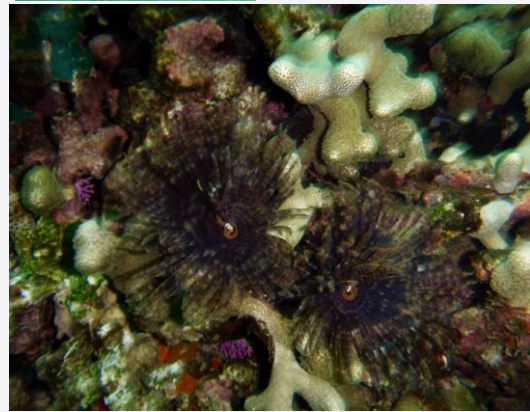
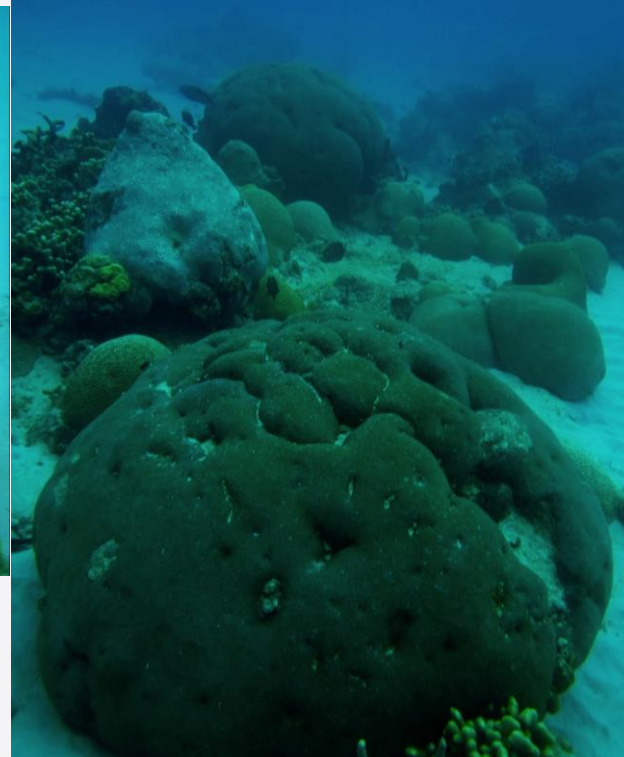


# Significant fish nursery habitat



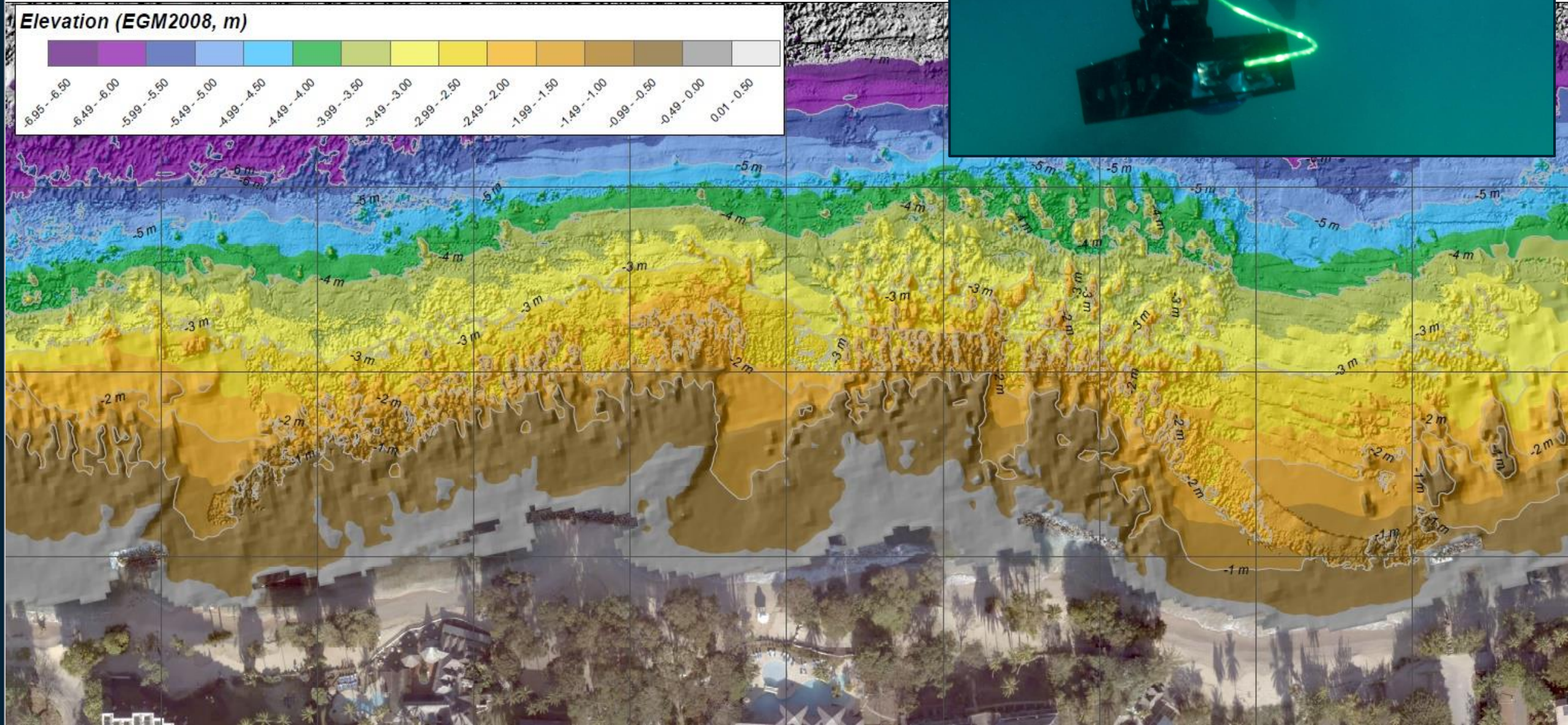


# Diverse marine environment

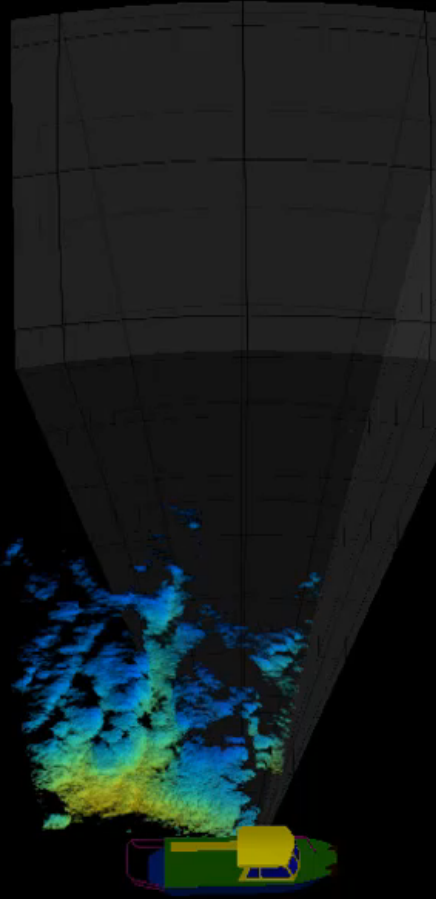
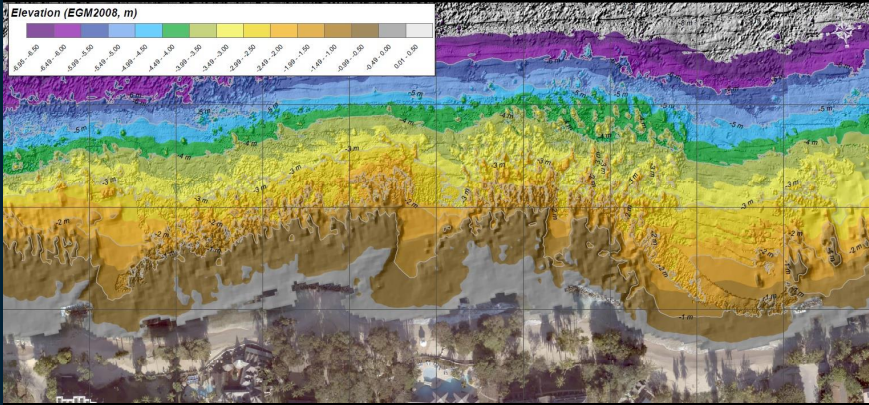




# Field Investigations: Bathymetry



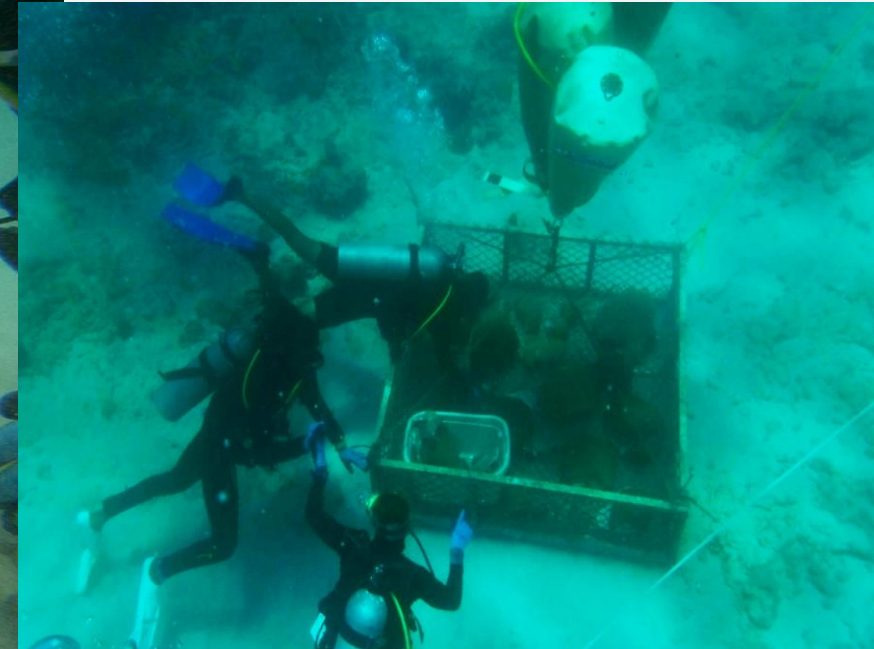




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# Coral Transplanting & Health





# Coral Transplantation





# Coral Transplantation

114 corals successfully translocated

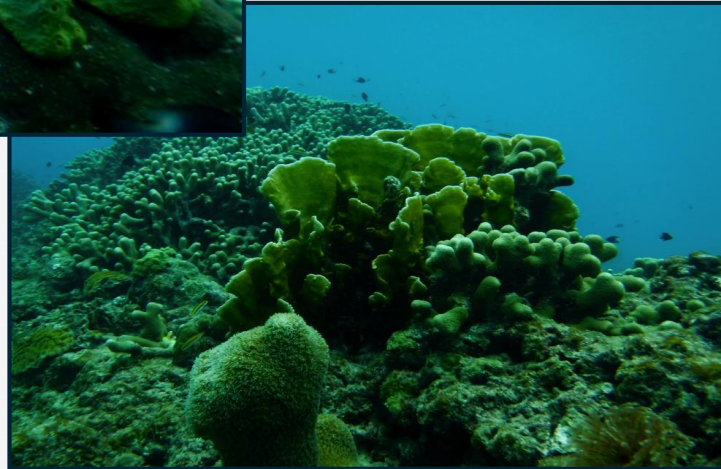


Image © 2018 CNES / Airbus



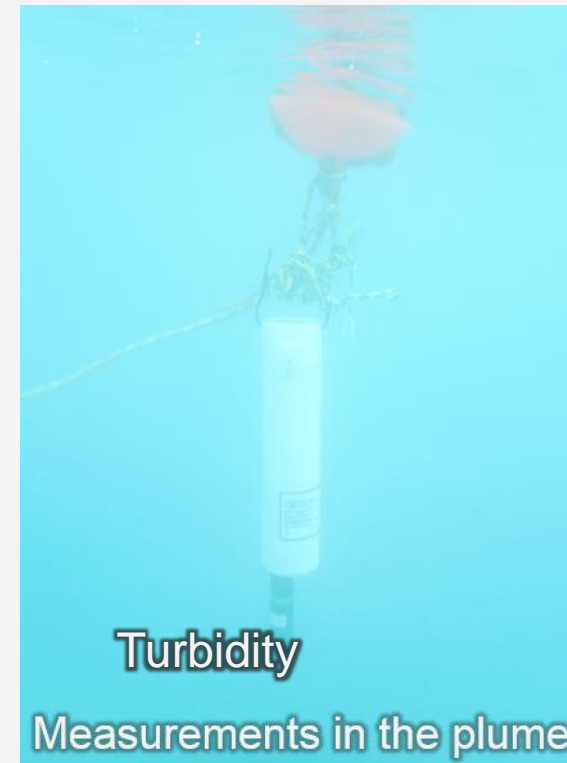
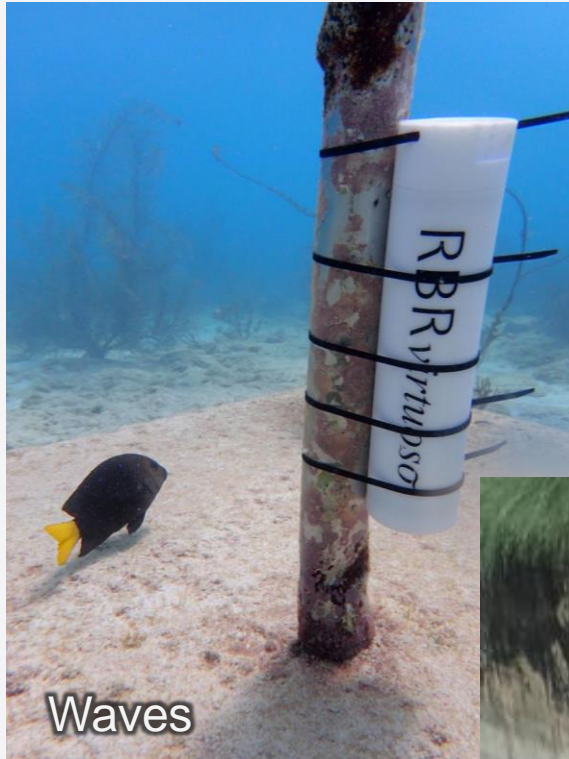
# 3 Year Environmental Monitoring Program

- Turbidity, Waves, Water Quality, Beach Profiles, Coral health.



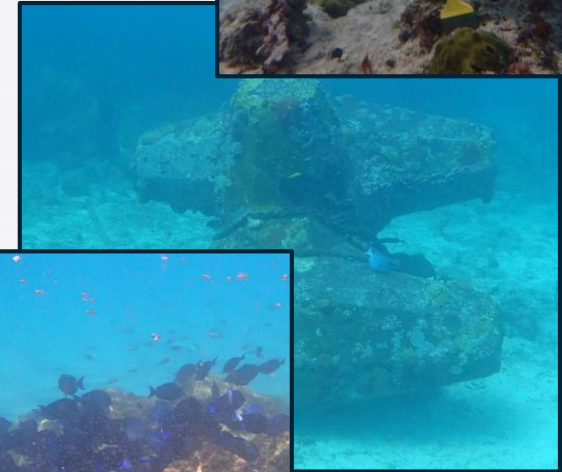


# Environmental Monitoring





# Proposed Coral & Fish Habitat Research Program



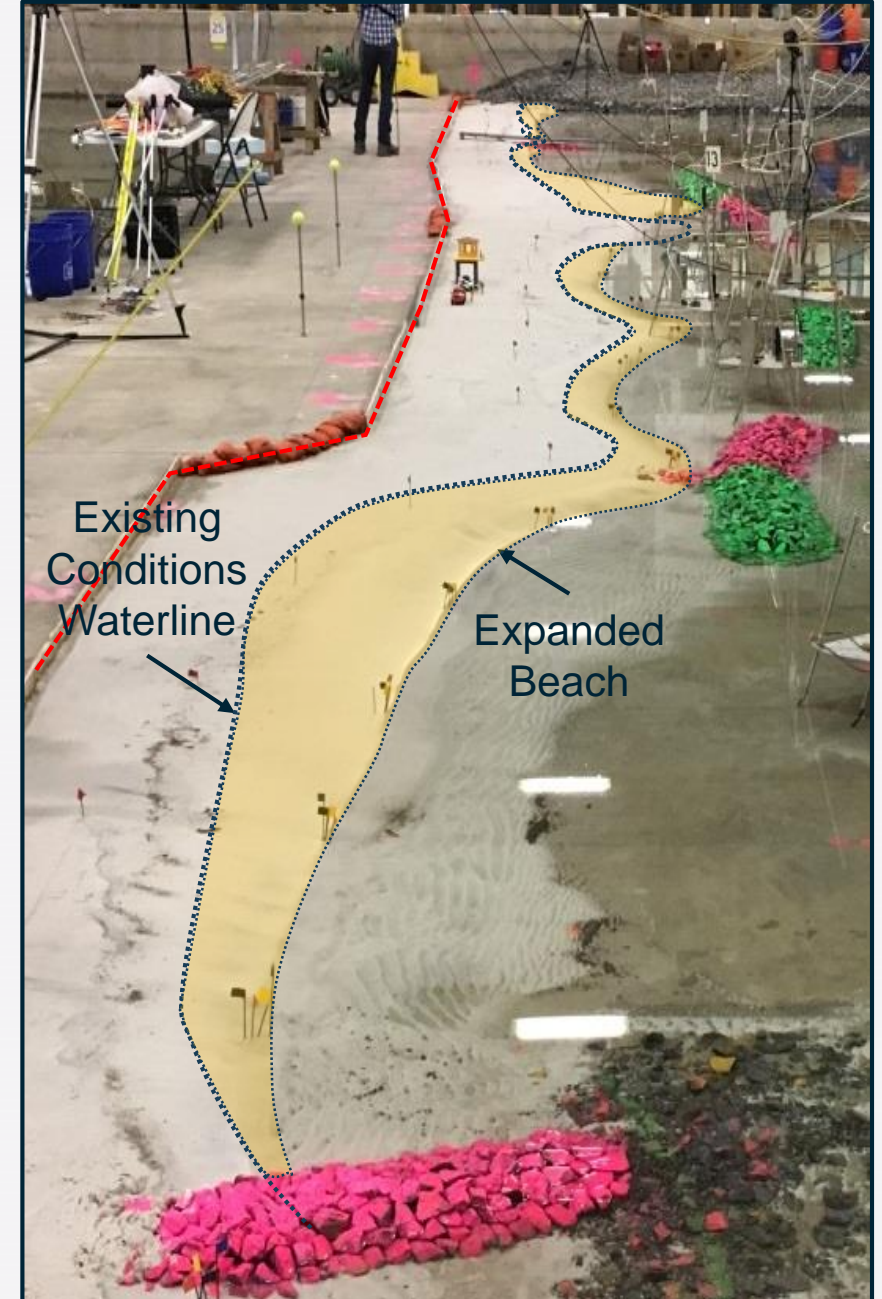


# Physical Model Videos

## 20-year Hurricane



Existing Conditions

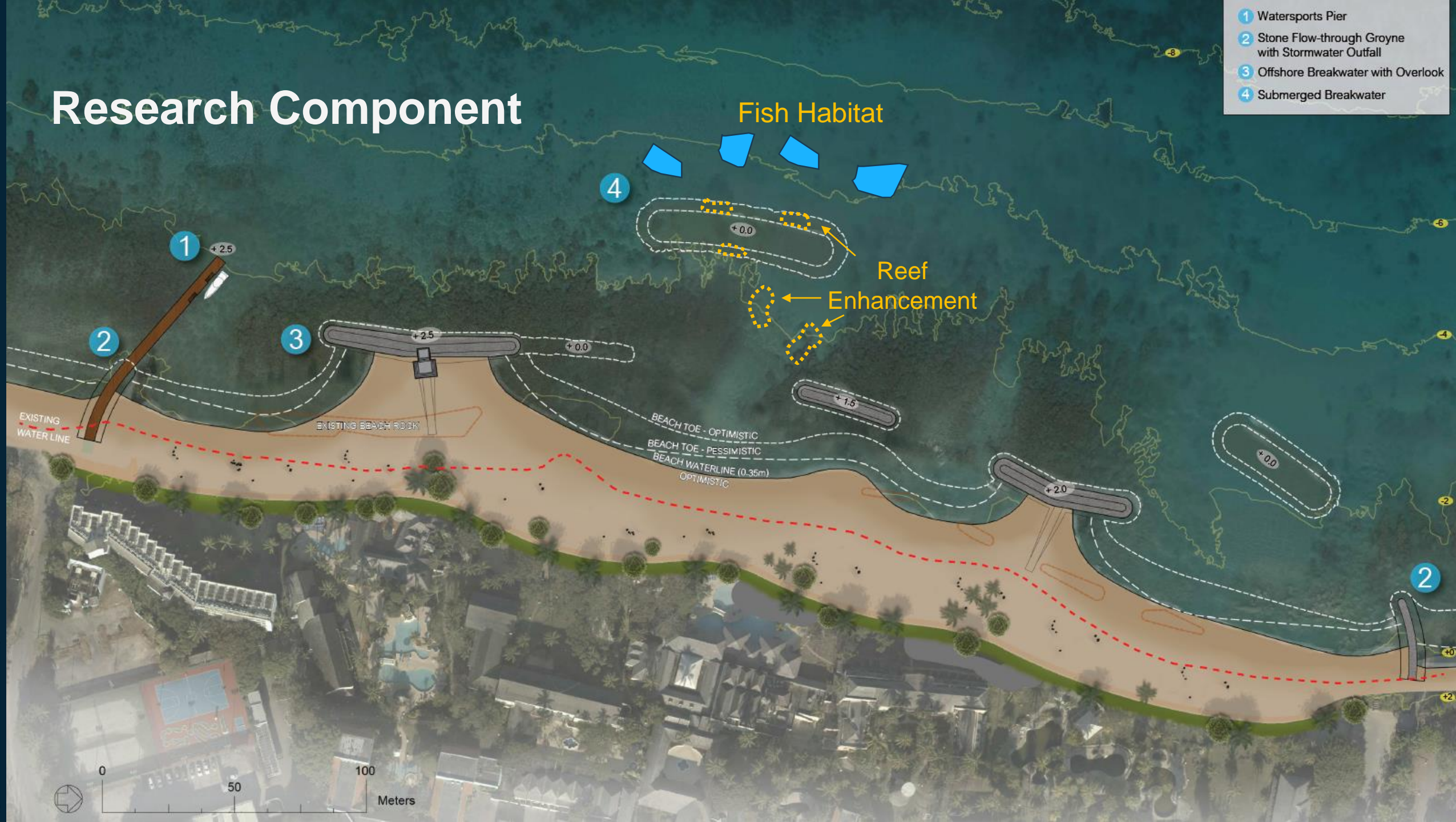


**Proposed (TSD)**  
After operational waves



# Research Component

- 1 Watersports Pier
- 2 Stone Flow-through Groyne with Stormwater Outfall
- 3 Offshore Breakwater with Overlook
- 4 Submerged Breakwater





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## 3. Expand Beaches and Improve Water Access





Thank you  
for your time!

Questions?





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