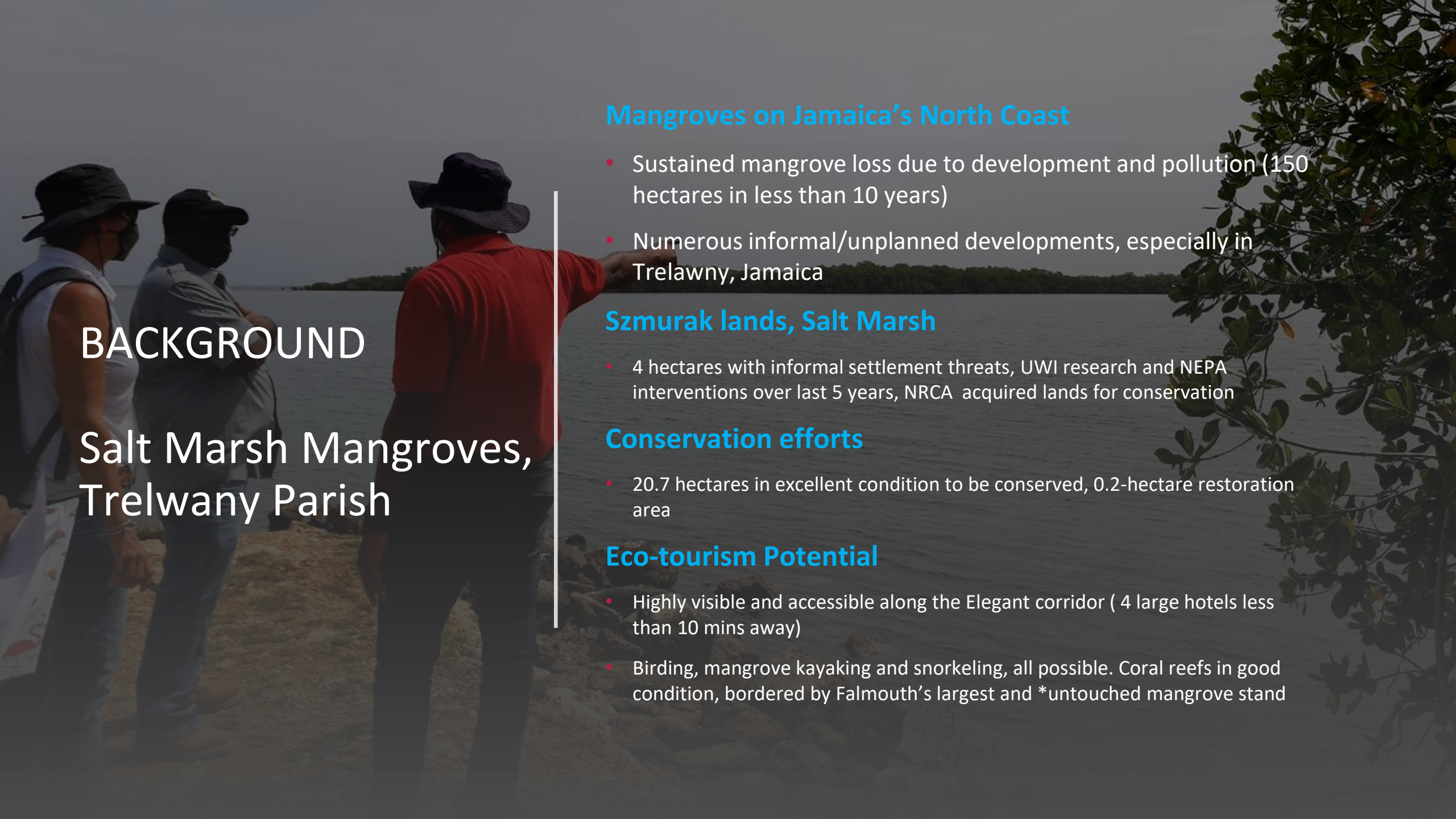


Adaptive Management for Mangrove Conservation in Trelawny, Jamaica

The University of The West Indies (UWI)), Discovery Bay Marine Laboratory and Field Station

Jason Grant and Camilo Trench



A photograph of three people wearing hats and casual clothing, standing on a rocky shore and looking out over a body of water towards a mangrove forest. The image is slightly faded to serve as a background for the text.

BACKGROUND

Salt Marsh Mangroves, Trelwany Parish

Mangroves on Jamaica's North Coast

- Sustained mangrove loss due to development and pollution (150 hectares in less than 10 years)
- Numerous informal/unplanned developments, especially in Trelawny, Jamaica

Szmurak lands, Salt Marsh

- 4 hectares with informal settlement threats, UWI research and NEPA interventions over last 5 years, NRCA acquired lands for conservation

Conservation efforts

- 20.7 hectares in excellent condition to be conserved, 0.2-hectare restoration area

Eco-tourism Potential

- Highly visible and accessible along the Elegant corridor (4 large hotels less than 10 mins away)
- Birding, mangrove kayaking and snorkeling, all possible. Coral reefs in good condition, bordered by Falmouth's largest and *untouched mangrove stand

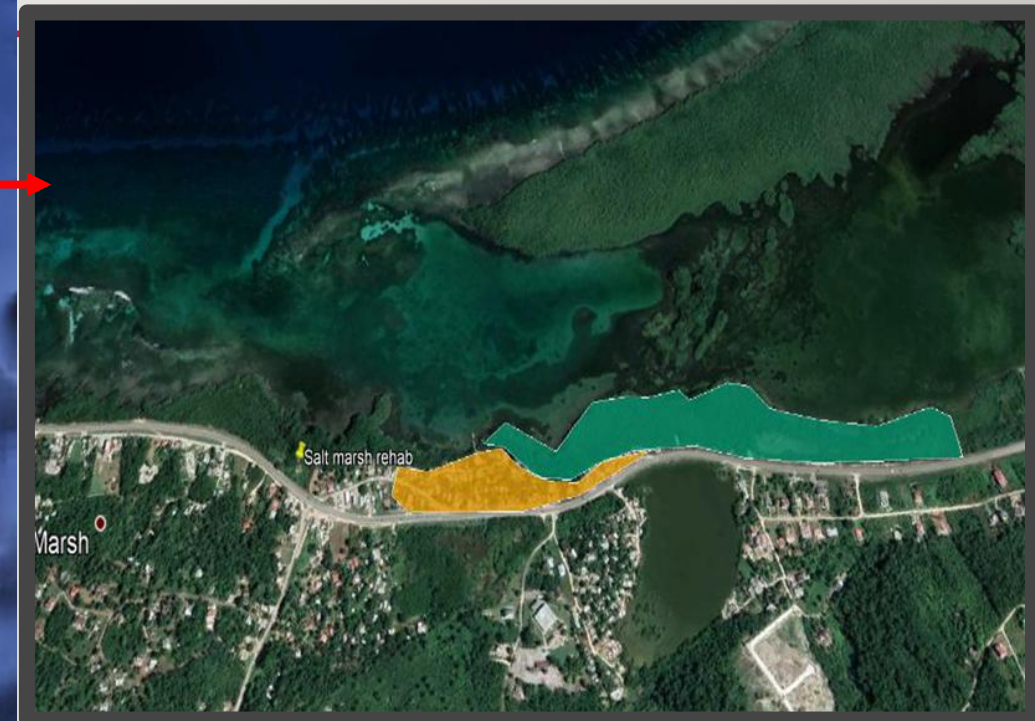
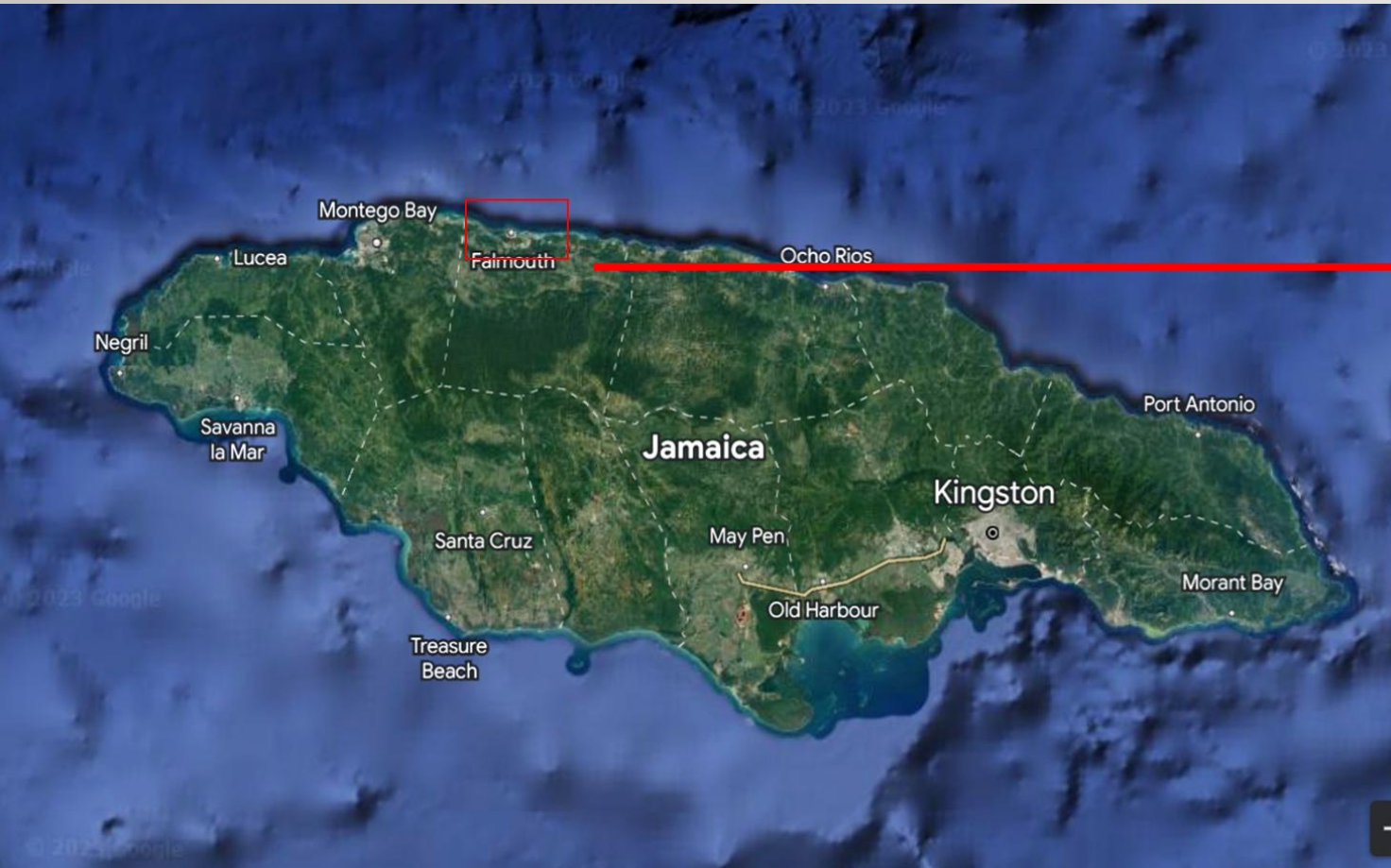
OBJECTIVES

- To investigate and develop Conservation/Restoration Plans for over 150 hectares on North coast mangrove forests identified, which are in eminent informal development threat
- To implement a Conservation Plan for the “Szmurak” lands section of the Salt Marsh community through mangrove rehabilitation, conservation, proper solid waste disposal, and recycling
- To increase the environmental education of the community through collateral development and children specific engagement
- To design and implement an Ecotourism Mangrove Boardwalk

MEET OUR TASK FORCE

- Sandals Resorts International (SRI)
- Sandals Foundation (SF)
- UWI Discovery Bay Marine Lab (DBML)
- Natural Resources Conservation Authority/National Environment and Planning Agency (NRCA/NEPA)
- Margaret Szmurak - Land Owner

Jamaica- is only 1,083,000 hectares, with 15,000 ha of mangroves?

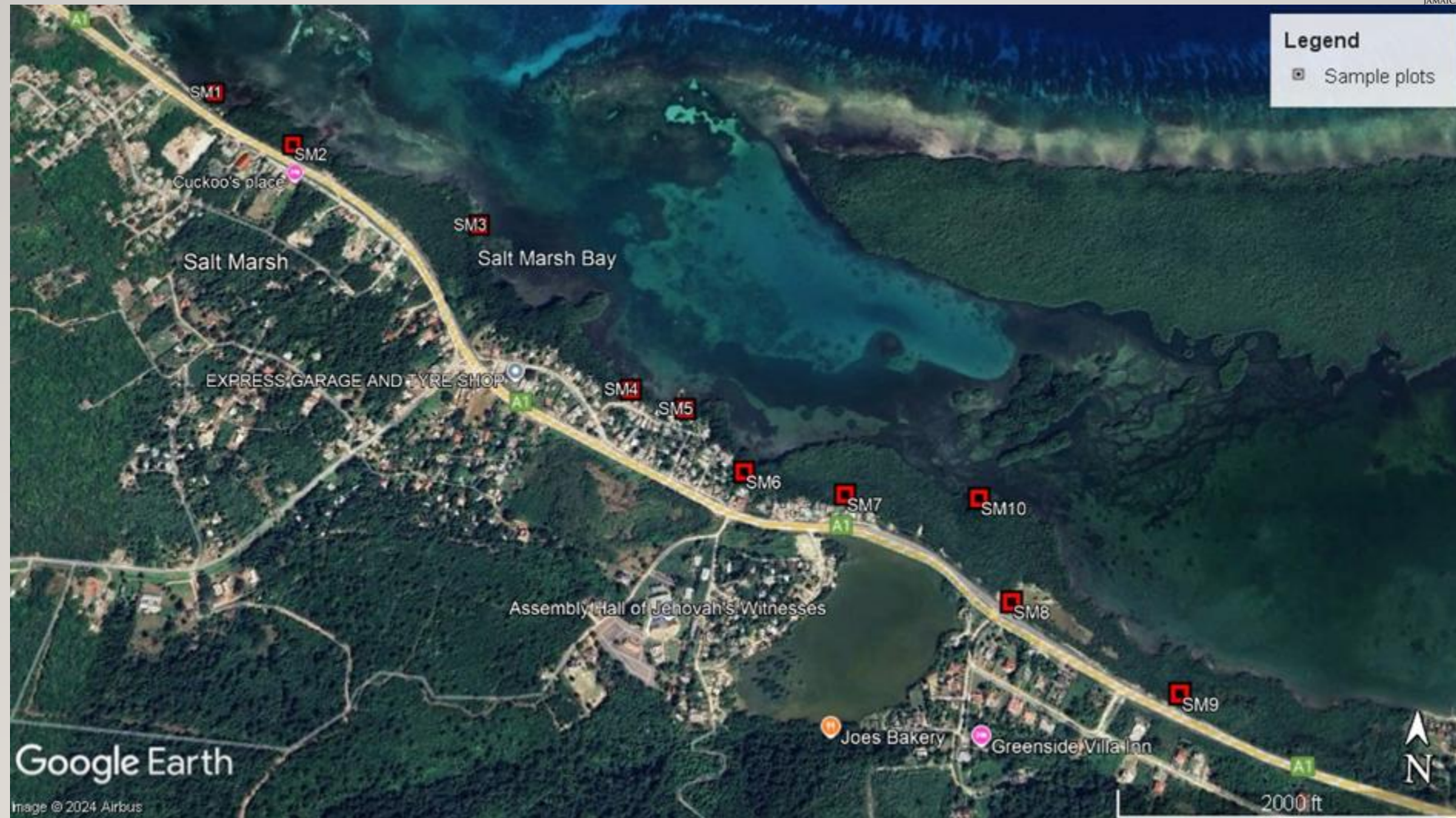


Salt Marsh is found in Trelawny Parish, development accelerated over the last 15 years

MAIN/TARGET COMMUNITIES

- Communities in the parishes of Trelawny and St. James - Salt Marsh Community located within close proximity to: “Szmurak” lands.
- These lands comprised of 24 hectares, with 80 informal households, surrounded by legal landowners and pristine mangrove forests.

Map of Target Community: Salt Marsh, Trelawny





OUR SUCCESSES

Primarily in two aspects:

Coastal Mangrove Monitoring & Rehabilitation

Community Engagement

EVIDENCE OF SUCCESS: MANGROVE REHABILITATION

- NCMCP currently has two actively monitored mangrove sites:
 - Site #1 - restored a total of 0.05ha containing approx. 200 seedlings planted for World Oceans Day 2024
 - Site #2 - restored a total of 0.2ha containing approx. 40 seedlings and planted over 400 propagules

Site #1: NEPA REPLANTING SITE



Site #2: MARL(Limestone fill) REMOVAL BEFORE (L) AND AFTER (R)



COMMUNITY MURAL: Replaced a dump site BEFORE (L) AND AFTER (R)



14 NO TRESSPASS SIGNS (L) -effective when combined with community engagement , and a Management Plan (R)

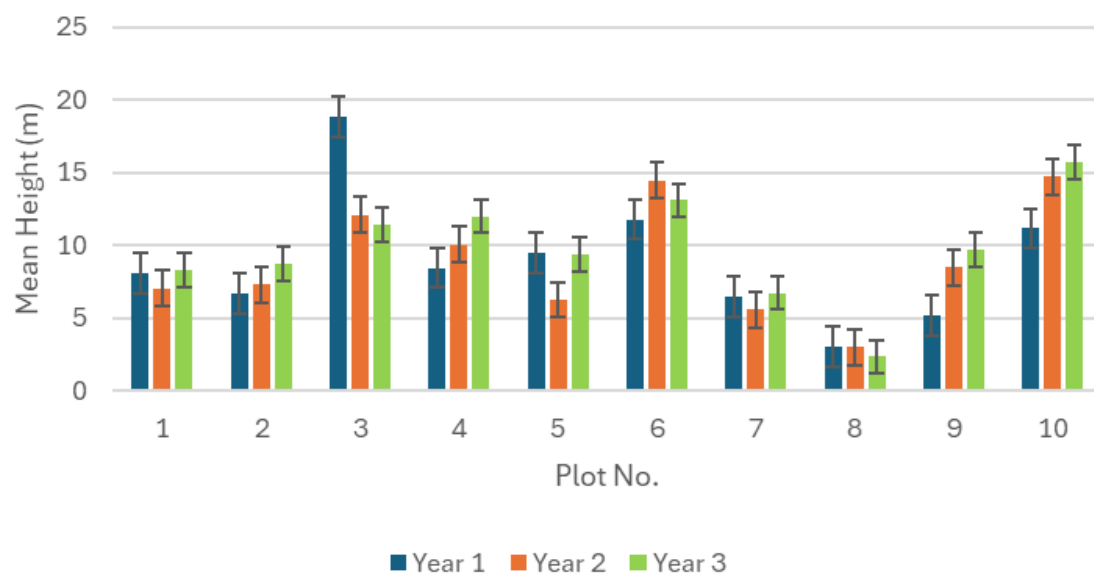


EVIDENCE OF SUCCESS – MANGROVE MONITORING

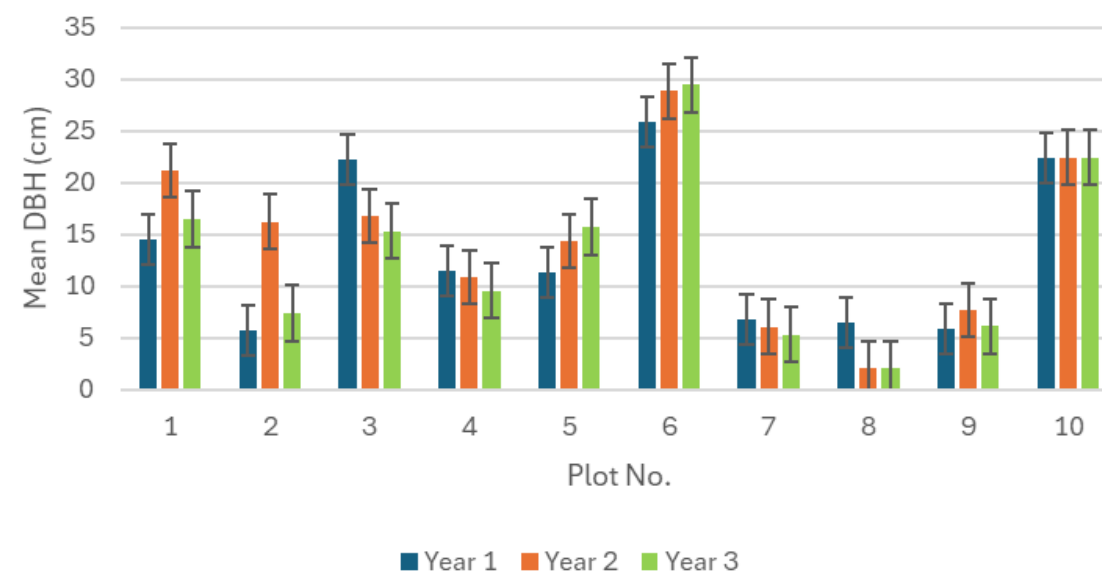
- 3 years of wholesome monitoring with permanent plots (10x10m), recording parameters such as:
 - Tree Height (m)
 - Diameter at Breast Height (DBH) (m)
 - Average Seedling Density (#/m²)
 - Tree Density (#/10m²) & other health status metrics

EVIDENCE OF SUCCESS – MANGROVE MONITORING CONT'D

Mean Tree Height (m)

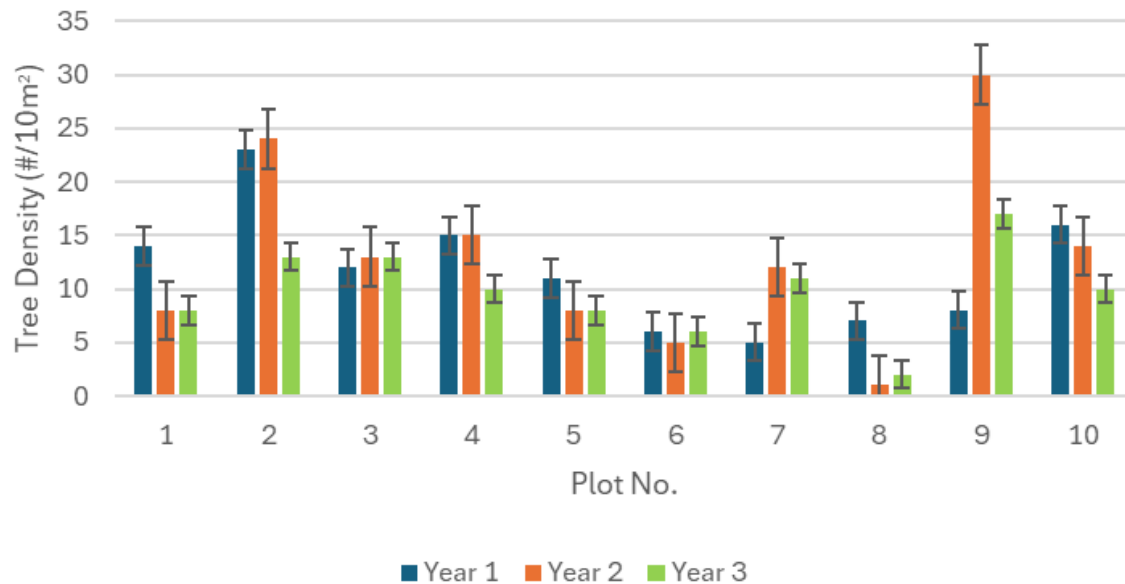


Mean Tree DBH (cm)

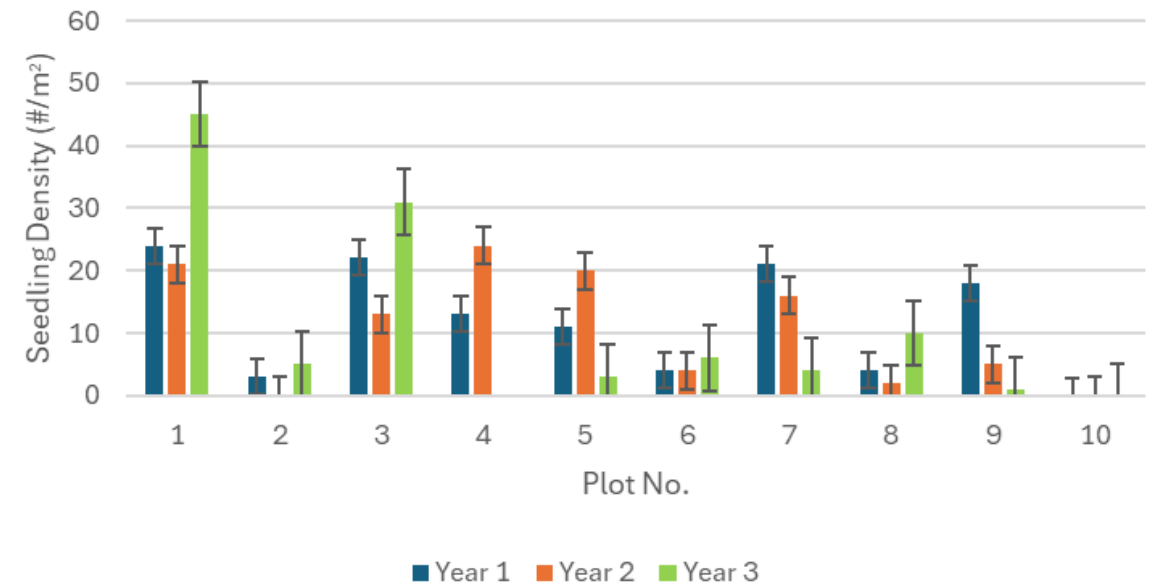


EVIDENCE OF SUCCESSES – MANGROVE MONITORING CONT'D

Tree Density (#/10m²)



Seedling Density (#/m²)

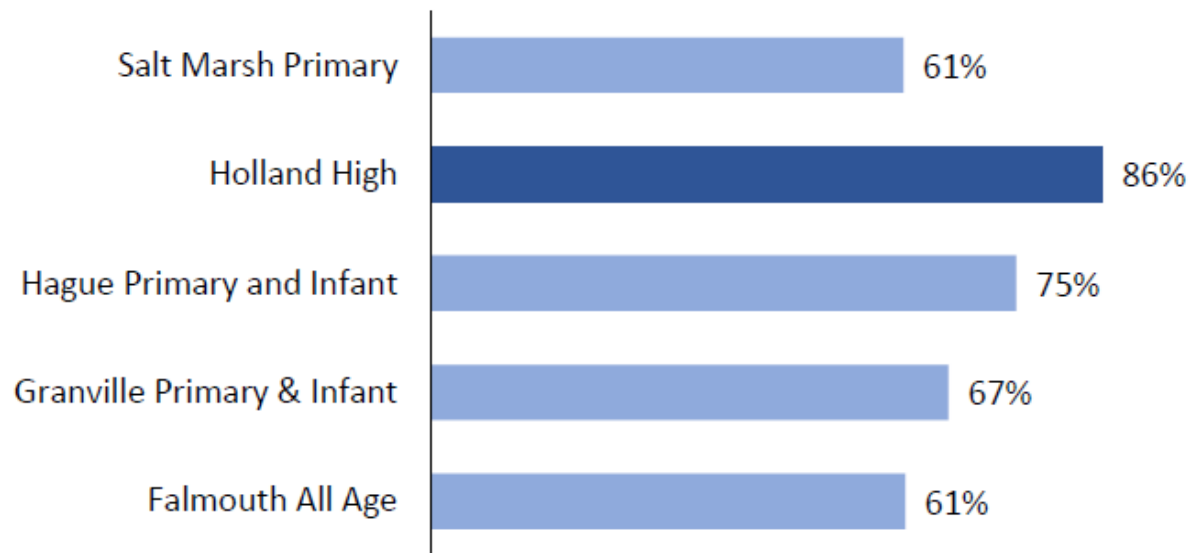


EVIDENCE OF SUCCESS – COMMUNITY ENGAGEMENT

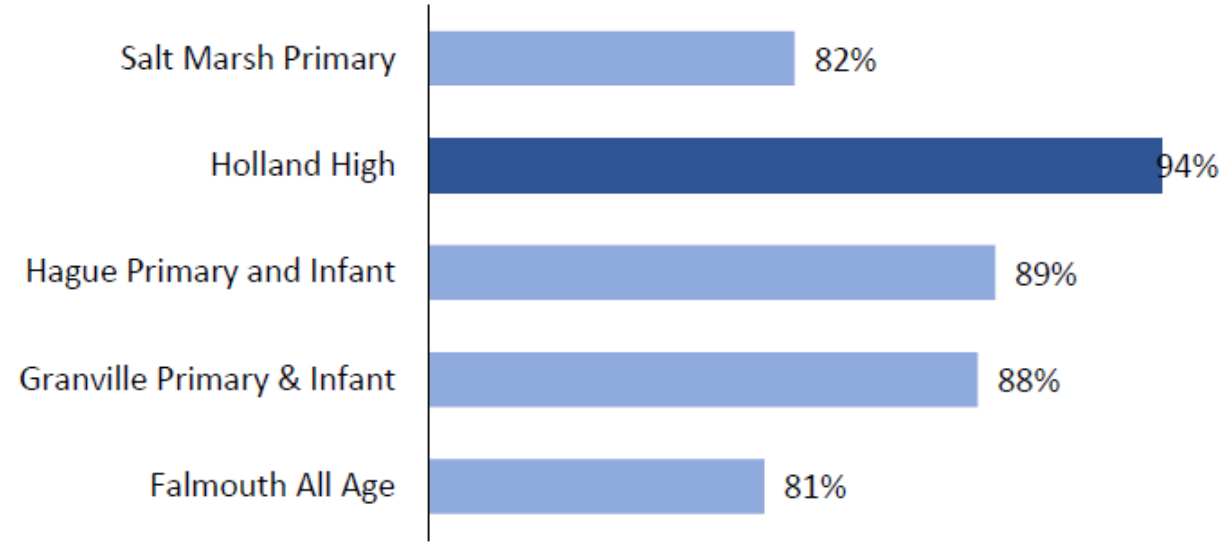
- Competitions
 - “Clean Yaad” : Community home, recycling and beautification project with prize pool over \$150,000 JMD
 - Mangrove Football (x2 events): Community event with prize pool over \$100,000 JMD, supported local town criers and restaurants,
- School Engagement (2 years):
 - 200+ students participated, from five (5) local primary schools. Education focus on a basic introduction to mangroves and their ecosystem services.
 - Has it been effective?

EVIDENCE OF SUCCESS – STUDENT LEARNING

PRE-SURVEY OVERALL SCHOOL AVERAGES



POST-SURVEY OVERALL SCHOOL AVERAGES



EVIDENCE OF SUCCESS – MANGROVE FOOTBALL



EVIDENCE OF SUCCESS – SCHOOL ENGAGEMENTS



EVIDENCE OF SUCCESS – SCHOOL ENGAGEMENTS



CHALLENGES & ROADBLOCKS

Community Participation & Turnout

Legal Disputes in Land-ownership

Logistical and Administrative Delays

Continued Encroachment and Mangrove Forest Removal

CHALLENGE - LOW TURNOUT TO COMMUNITY MEETING

- Very limited interest in environmental stewardship
- Some animosity/distrust between community members and partnering government organizations

CHALLENGE - LOW TURNOUT TO COMMUNITY MEETING (CONT'D)



CHALLENGE - LEGAL DISPUTES IN LAND-OWNERSHIP

- Illegal claim of land lead to 18 month delay in project
- Lost revenue in searching for new site
- Solution eventually expedited by NEPA and NLA.

CHALLENGE - LOGICAL AND ADMINISTRATIVE DELAYS

- Inefficient administrative procedures resulted in continued delays in funds
- Continues to be a limiting factor in the ongoing project

CHALLENGE - EVIDENCE OF ENCROACHMENT

Plot 5 checked as of September 2025 had evidence of further mangrove forest removal and tampering.

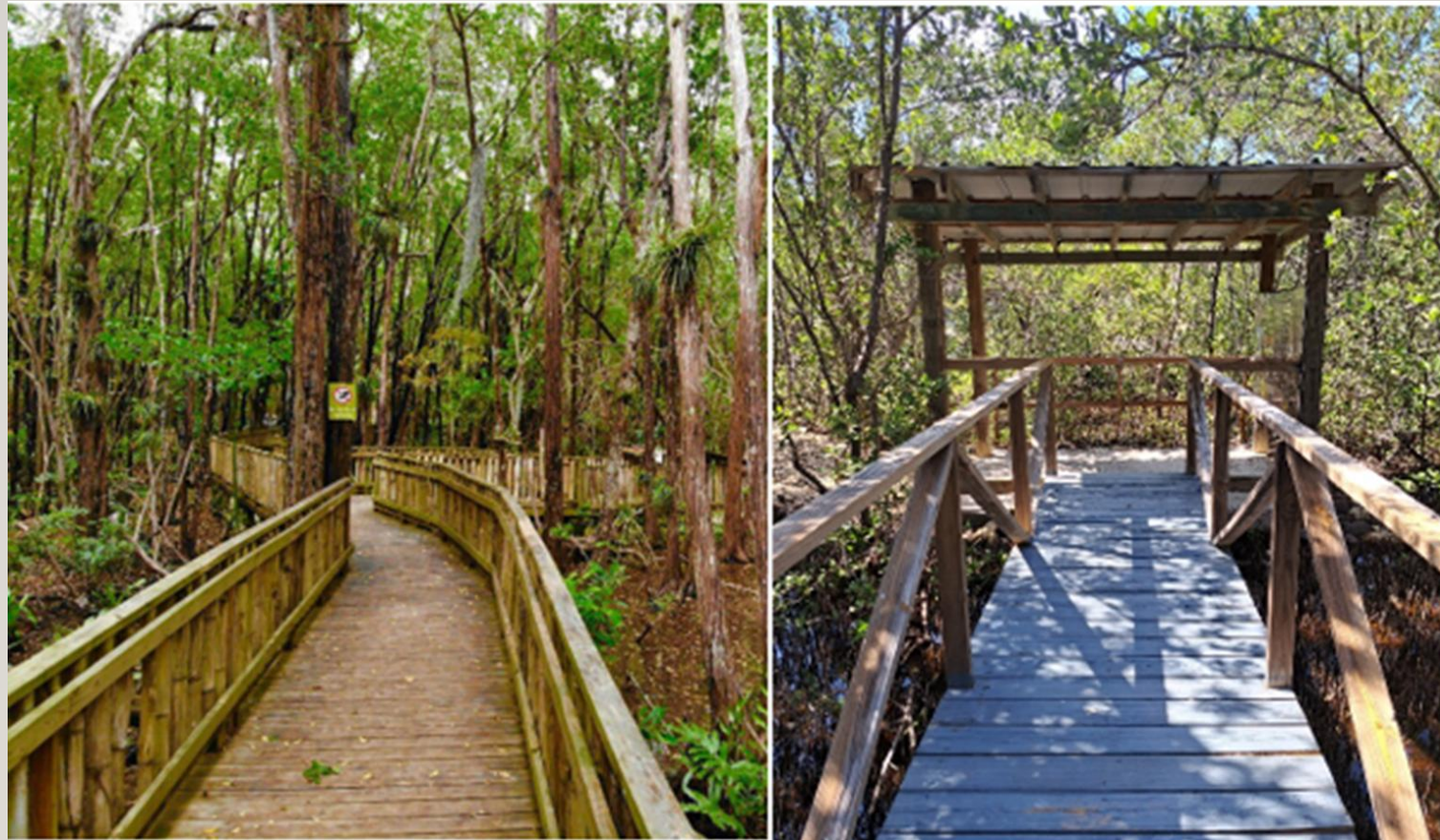
FUTURE PLANS

- Ecotourism: Construction of 300m Boardwalk & 2 floor Bird Watchtower
- Establishment of a Fish Sanctuary in Salt Marsh Bay

Concept- Bird Tower



Inspiration for Boardwalk



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Irish Aid

An Roinn Gnóthaí Eachtracha
Department of Foreign Affairs



Foras na Mara
Marine Institute



**OUR
SHARED
OCEAN**
PROGRAMME



Thank You!



FOR QUERIES, PLEASE DO NOT HESITATE TO CONTACT.

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