



Jamaican Hurricane Recovery Project

Chicken on a Chain

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Abstract

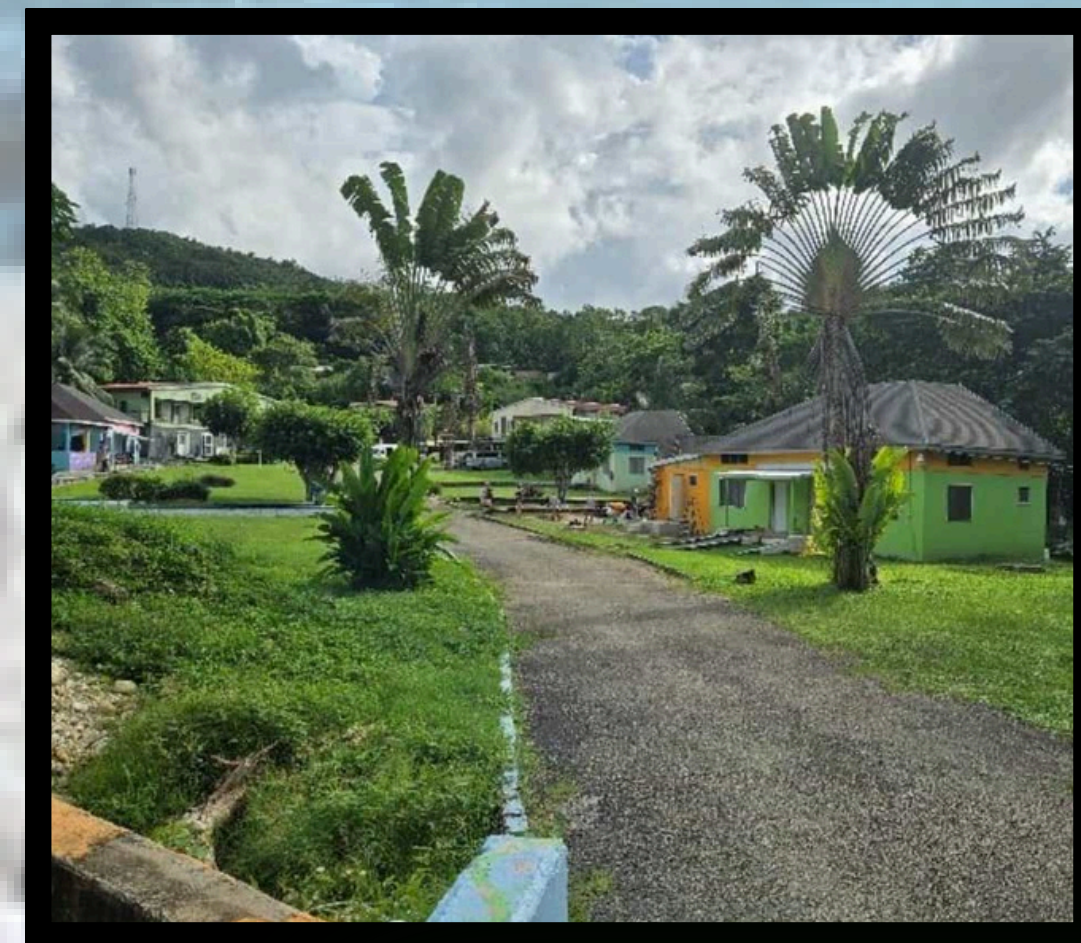
Using our connections with the Jamaican Mission Program, (JMP) we created a conceptual model where underwater robotics could be used to help communities who have been compromised with natural disasters by helping them find solutions to rebuild their structures, ecosystems, and communities in an environmentally sound format. Some of our school families have had relationships with the Jamaican Mission Program for over 20 years. Because of these connections, we have an emotional and financial responsibility to assist them however we can. This project is meant to provide valuable information for leaders and scientists to create a better tomorrow after disastrous events occur.

Results & Discussion

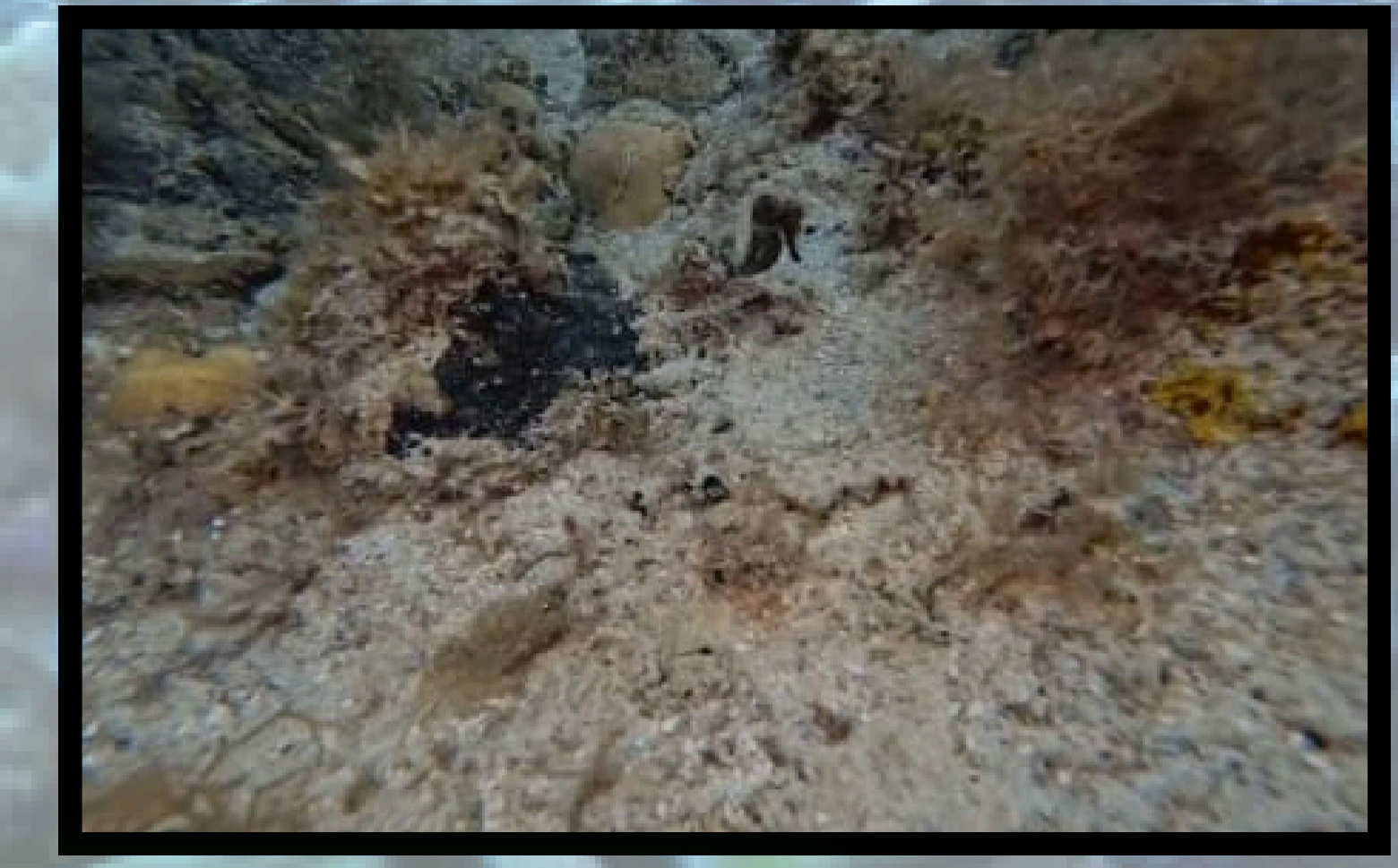
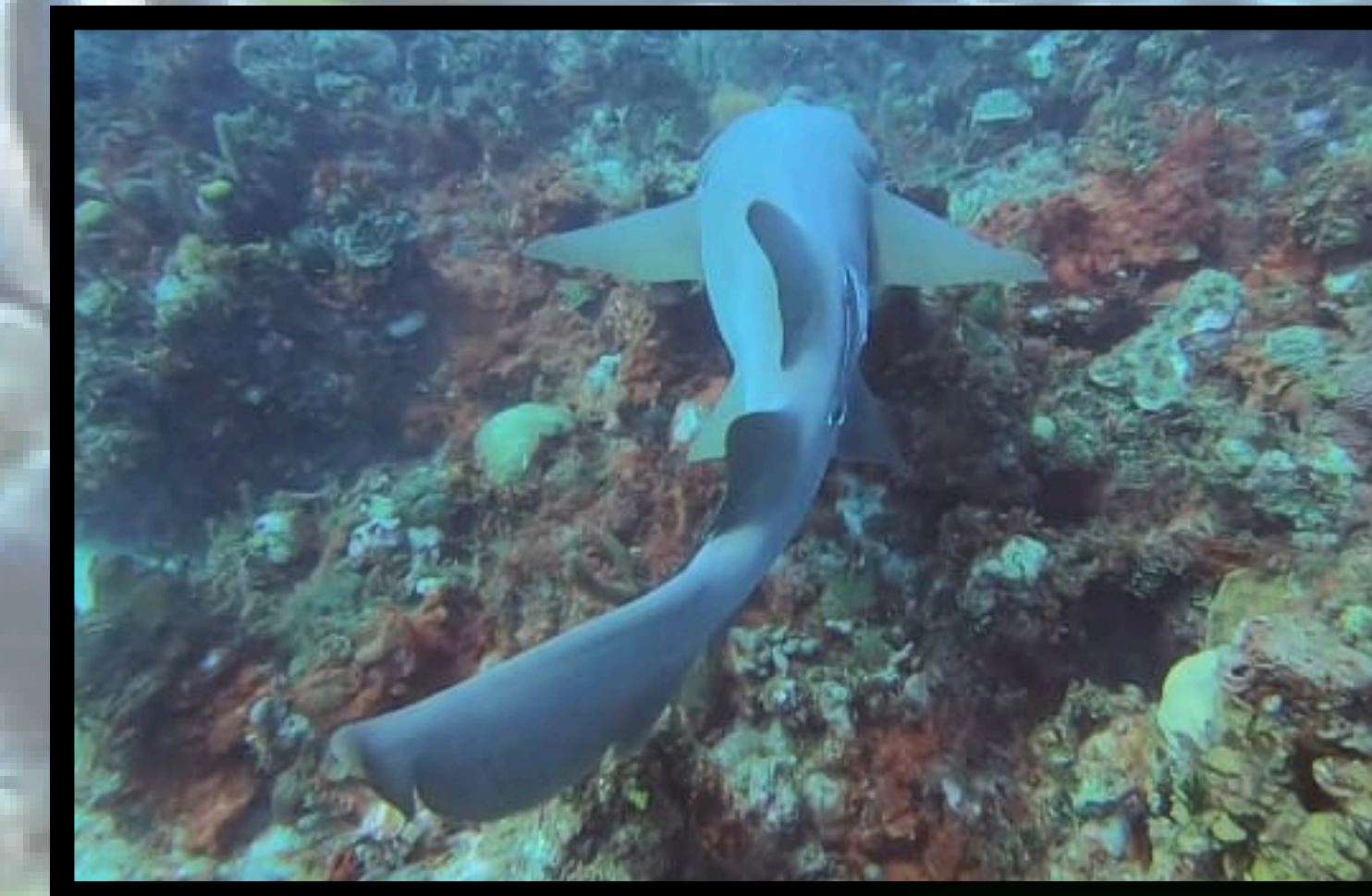
In our conceptual design, we would expect to have favorable results with these applications. Our ROV would be beneficial in so many areas. By using its modifications with underwater cameras, GPS location and mapping capabilities and potential heat sensing capture, data would be easily collected for future decision making. This ROV would also be able to execute repairs and coral seeding in appropriate areas. Being able to dispatch and use our underwater ROV to survey storm damage to both infrastructures and habitat loss, decision makers would have valuable information to form rescue plans and procedures. Areas in need of immediate assistance would be able to be identified and rescue plans put in place accordingly.

Conclusion & Next Steps

Habitat loss and structural integrity after storm damage occurs is an ongoing problem in so many communities. Given that there are valuable ecosystems within the coral reefs that our Jamaican partners monitor for sustainability, we feel our ROV would be able to assist researchers in the area to help create new coral beds through new innovations and technologies. It would also be beneficial to continue to use the conceptual underwater ROV's to help monitor coral reef progress and growth over the years. With continued research and data collection, the coral reefs could once again be thriving after a devastating storm occurs in their area. It would be rewarding to work with our Jamaican partners through the Jamaican Mission Project to continue our strong partnership and work together to improve their overall quality of life.



Blessed Assurance: Before & After



Reef: Before & After

Background & Motivation

Our Sea Perch team has close connections to a local charity organization, the Jamaican Mission Program. This non-profit organization has worked in Jamaica for the past 20 years providing medical care and facility maintenance to several orphanages across the island. Most recently, JMP has been working at Blessed Assurance Orphanage. Blessed Assurance was in the path of some of the worst damage from Hurricane Melissa in October 2025. Most of the property was under 8-10 feet of flood water. The two chicken coops that JMP built over the years were blown away. In addition to this damage on land, there was extensive damage to the reefs off of the coasts of Jamaica. We have a personal friend in Jamaica who is a dive instructor and does lots of work near the reefs. He has shared pictures of the damage, showing how much of the coral has been smothered in sand and has been broken. There has been severe wildlife and habitat destruction. We think that if we upgraded our seaperch ROV, we would be able to repair or improve a reef habitat that was damaged or destroyed as a result of Hurricane Melissa. We would also be able to help monitor underwater infrastructure to aid in the recovery process as well. In addition to the infrastructure assistance, our ROV could provide clearing reefs of garbage, sweeping sand off the reefs or preparing areas for new coral reefs to be grown.

Methodology

Our team's approach in this conceptual project was to create opportunities to assist the Jamaican Mission Project and their affiliates with hurricane recovery and relief using underwater ROV's designed with modified technology to secure data. The focus would concentrate on both habitat restoration and infrastructure monitoring that could assist with recovery, planning and next step options. We specifically focused on how hurricanes affected Jamaica and its communities, especially after storms like Hurricane Melissa in October of 2025. The negative impact from storms like these are astronomical and difficult to recover from for many nations.

Acknowledgements

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