

**JUNE 2018**

**Håfa Adai!**

"RESTORING REEFS AND WATERSHEDS"

This edition of the GYOR newsletter describes local efforts to restore habitats in the ocean and on the land.

If you would like to contribute content or photos to the newsletter, contact Mallory Morgan at the Bureau of Statistics and Plans: [mallory.morgan@bsp.guam.gov](mailto:mallory.morgan@bsp.guam.gov)

Check out our website at [www.guamcoralreefs.com](http://www.guamcoralreefs.com) and like us on Facebook at [@GuamYearoftheReef2018](https://www.facebook.com/GuamYearoftheReef2018).

**#GYOR2018**



# GUAM YEAR OF THE REEF 2018 NEWSLETTER

Photo: Dave Burdick

Local natural resource managers are finding innovative methods to restore Guam's coral reef habitats. Guam's reefs are impacted by coral bleaching, poor water quality, sedimentation, overfishing and destructive fishing, outbreaks of the coral-eating crown of thorns sea star, tourism and recreational use, vessel groundings, marine debris, and invasive species. All of these stressors are degrading Guam's coral reefs. The most important thing we can do to keep Guam's reefs as healthy as possible is to reduce local threats, such as overfishing and land-based sources of pollution. Pollution and sedimentation are very harmful for coral reefs, as nutrient runoff can cause algal blooms and sediments can smother corals.



*Watershed restoration (reforestation) at Quinene Hill in Merizo, led by natural resource agencies with community member participation. (Photo: P. Keeler/BSP)*

One approach to decreasing the amount of pollution and sediments that reach the sea is through watershed restoration. This includes increasing the amount of vegetation on Guam's land by replanting slopes and reducing impacts of wildland fires and off-roading. By planting trees and other native plants, we can prevent erosion; the roots of plants will hold the soil in place and prevent runoff of sediments onto the reefs when it rains. In Merizo, the National Oceanic and Atmospheric Administration (NOAA) has identified the Manell and Geus watersheds as a Habitat Blueprint Focus Area. NOAA and local partners are conducting extensive community-based watershed restoration in this area, including tree planting, firebreak maintenance, and invasive bamboo removal.

At the University of Guam, Sea Grant and Center for Island Sustainability graduate student Lauren Swaddell is working under the Guam Restoration of Watersheds Initiative (GROW) to research the use of seed balls to sow Guam's savannas with native seeds, stabilize soil, and decrease the dominance of swordgrass.

UOG is also taking a dive and restoring coral reefs in Guam's nearshore waters. In 2013, Dr.



*Guam's ocean-based nursery is a source of hope for the future of Guam's reefs. Corals in the nursery are able to grow in sheltered conditions before being outplanted to a reef site. (Photo: L. Raymundo/UOG)*

Laurie Raymundo, professor of biology at UOG, and Underwater World established an ocean-based coral nursery in the Piti Bomb Holes Marine Preserve. Over 1,000 fragments of five species of branching staghorn corals have been transplanted to the nursery, where they will grow larger in favorable conditions before being outplanted to reefs. The nursery also contains juvenile corals that were bred in the lab using coral spawn from Guam's reefs. In 2015, after a mass spawning, more than 1,000 coral larvae were settled onto tiles and moved to the nursery, where they have a safe environment to grow before being transplanted.

Coral reef restoration is increasingly important as the impacts of climate change on Guam's reefs are accelerating. Coral bleaching has had severe impacts on Guam's reefs recently, occurring during four of the past five years. When ocean water gets too warm, corals become stressed and they spit out the algae that live inside their tissues. This algae is what gives corals their bright color – so after the coral lose the algae, they turn white and appear “bleached.” The algae also provide corals with up to 90% of their food, so bleached corals are weak and vulnerable. When water temperatures are high for long periods, many corals will die. Between 2013 and 2015, Guam lost over half of its branching staghorn corals due to coral bleaching and extreme low tides. Staghorn corals are extremely important for Guam's reefs and the people of Guam – they provide vital habitat for many fish species and protect our coastlines from storms and erosion.

In order to save Guam's reefs, it is important that scientists and managers investigate multiple methods for coral reef restoration to determine which approaches are most effective. In addition to watershed and reef restoration, we are also considering the potential value of restoring seagrass and mangrove habitats and removal of invasive algae. Last month, local natural resource managers, researchers, and other stakeholders convened the first meeting of the Guam Reef Restoration and Intervention Partnership (GRRIP); the primary goal of this group is to develop a strategy for coral reef restoration to ensure that our reefs will be enjoyed by many future generations on Guam.



Natural resource managers and local scientists restored a reef at Jade Shoals, which was damaged by a vessel grounding in 2017. (Photo: W. Hoot/BSP)

## May Highlights

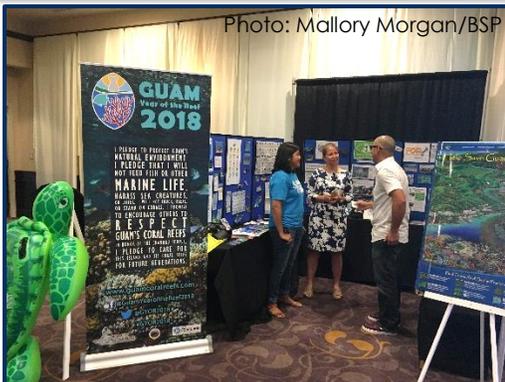


Photo: Mallory Morgan/BSP

GYOR was well represented at the Pacific Hotel and Restaurant Expo (PHARE) on May 9<sup>th</sup>-11<sup>th</sup>. In addition to hosting a booth during the expo – featuring GYOR outreach including information about marine preserve regulations and reef-safe sunblock – Mallory Morgan of BSP delivered three trainings on sustainable marine tourism.



Photo: Whitney Hoot/BSP

Community members enjoyed kayaking, snorkeling, hiking, and a natural resource mini fair at the Ridge to Reef event hosted by the Guam Nature Alliance in Merizo on May 12<sup>th</sup>.



Photo: Marybelle Quinata/NOAA

## June Events

- Sustainable Marine Tourism training at Outrigger (6/5)
- Eyes of the Reef training at Outrigger (6/6)
- Kids Reef Craft Night at Outrigger (6/7)
- World Oceans Day at Outrigger (6/8)
- World Oceans Day at Micronesia Mall (6/9)
- Keep Guam Beautiful Clean Up at Apaca Pt (6/9)
- 27<sup>th</sup> Annual Kids Saltwater Fishing Derby (6/16)
- MDA Underwater Treasure Hunt Dive (6/16)
- Science Sunday – MCC FISSH Project (6/17)

For event details visit: [guamcoralreefs.com/calendar](http://guamcoralreefs.com/calendar)

**Next month's theme: Ridge to reef**

Si Yu'os Ma'åse'! If you would like to unsubscribe, please email Mallory Morgan at [mallory.morgan@bsp.guam.gov](mailto:mallory.morgan@bsp.guam.gov).