

Speaker Name : Noortasha Devi
Institution : GaiaOne Restoration Project
Topic : The key to coral conservation is monitoring and maintenance
Type of Activity : Monitoring and maintenance reef restoration project
Project Location : Tanjung Bira
Project Duration : 2021-now

Summary Presentation:

1. GaianOne

- Started in 2020 located in Bira, Indonesia
- First activity is trash collection
- In 2021 the restoration program started with local communities and collaboration with Ocean Gardener
- Plantes 3 coral nurseries in Indonesia and 2 in Malaysia
- The priority is to restore the beauty balance, and biodiversity of the reefs

2. Restoration Project

- Think of: location, topography, planting technique, logistics, and maintenance and monitoring
- The challenges:
 - a. Lack of education, people don't understand what coral and the impact of the coral reef is.
 - b. Waste pollution, increase bacterial infection, entrapment and serious harm to marine life.
 - c. Fish bombing, still fishing method used around the world
 - d. Climate change, leading cause of coral bleaching resulting from rising water temperatures
 - e. Destructive boating, throwing anchors carelessly, destroying years of coral growth
 - f. Over fishing, removing key fish from the food chain leads to an excess of coral predators.
 - g. Natural predators
- Coral transplantation techniques:
 - a. Spider planting
 - b. Rope planting
 - c. Cookie planting
 - d. Metal sticks
 - e. Coral hanger
 - f. Direct planting
- Planted over 20.000 coral from 2021-now
- Approach the local community through education workshops, school talks, fisherman outreach, and knowledge sharing with boat captains.

3. Maintenance
 - 5 times a week, 3 times in the main areas, 2 times in the nurseries areas
 - Removal sponge and algae scrubbing
 - Drupella removal, coral eating snails. The drupella have been outbreak because overfishing. Generally, in the lava stages, the Napoleon or groupers will eat them but because overfishing, they don't have natural predators. Drupella can make coral stress that leads to bleaching
 - Cots removal
 - 60% maintaining the nurseries area and 40% planting
4. Monitoring
 - Because still doesn't have someone to do research and analyze data, using the qualitative data.
 - Rapid reef assessment, a qualitative survey of the reef to decide on the overall health of reef. Conducted once every 4-6 months
 - Bleaching reporting, observing any bleaching and submitting to NOAA and Reef Check Surveys.
 - Growth and survival rate, tagging specific structure and techniques and observe their rate of growth
 - Coral spawning, 3-days after full moon in October, November, and December. Taking note of how many days/hours after full moon. Observing which corals release eggs and sperm
5. What you can do?
 - Be a conscious consumer
 - Know your fish, avoid any reef fish
 - Support credible conservation and restoration projects
 - Volunteer with local cleanup organization
 - Reduce
 - Share

Question and Answer:

1. Zach Boakes:

Based on this (and also your experience), what would you consider as long-term success for a coral reef restoration program?

If in 10 years the areas that you were restored are still alive, this would be like a long-term success for coral restoration project. We want the reef to be at a mature point, so that it can spawn and seed other places as well. Long term success needs to involve and educate the local community to support the program. And the most important thing is sustaining the project needs to be the main focusing.

2. Sija

As you mentioned, Drupella outbreaks affect coral health and growth. What management strategies would you recommend for sites with high Drupella abundance, other than removing them?

The best management strategy would be speaking to local fisheries department, or even to the local fishermen especially educating them. Speaking about the overfishing that's happening, because that is the cause of the Drupella outbreaks, lack of predators.

3. Jane

With the high abundance of Drupella, one of the things you can do is removing. When you remove the Drupella, or any organism that can kill or damage the corals where you like throughout the organism?

Dry them and then we return the shells to the sea, new hermit crab can take over. We have to find another place and bury them, because it's quite poisonous. There are not many projects in Southeast Asia that work with removing the predators. There's a project source in Lombok and sometimes what they do is crack the Drupella, and then the rest eat it.

4. Gita Alisa

Have you tried outplanting massive coral? and if so, what method do you use?

We have tried outplanting them. The technique that we use is actually cookies because they grow quite well on them. And they're able to kind of like grow because the cookies they kind of like sit in this little disk. The technique can grow like any kind of genus of coral can be planted on them.

Have you also conducted the research to be published in scientific journal outside the restoration report itself?

I'm in search of someone who would love to do research, who would love to analyze the data that we've been collecting because we have diligently collected them over the past 3 years. We don't really have anyone who's come to Bira, most everybody is going to Bali. There's a research center there. I haven't approached the University of Makassar to see if anybody there would like to do some research.

5. Laura Nikita

I'm wondering how do you involve local communities in the restoration program? Do you seek their support, collaboration, or active participation?

When I started the restoration project, I think this was the main thing for me to get the locals involved because number one, we needed the manpower. We are like a really small

team. In the first they don't have a marine biology background and maybe can't dive. So I did to educate and explain them certain techniques and training for diving. This was one of the things we did so

6. Permas

do you get spawning in the transplant area? What age can the transplanted coral spawn?

We do get spawning in the transplanted areas. We've noticed in the areas that we've restored. They have been spawning. Age depends, It's actually can tell by size. So, corals that are between like 15 cm or above. Whether or not they are able to spawn will depend on many factors whether or not they have the right nutrients at the time and depending on the coral. So, like for example Acopora it could be, you know, 2, 3 years. They can grow to this size, pruritus Galaxia. It could take a longer time.

7. Samson

I am interested in the coral planting method, which uses cement underwater. How do you make this recipe so that it sticks and does not dissolve in water? and have you ever tried planting massive coral(Porites, or Goneastrea) using this method?

We use the seawater to mix in the cement and it has to be quite sticky. Take a certain amount of cement in a bag, and then you have to like, put in a little by little, and then mix it, and then add a little bit of water and mix it. It has to be sticky. Generally as long as you go, when there's not much current and not like a lot of surge. When you press out the cement, it should stick. It will take about 24 hours, so you always need to go the next day to check that they didn't fall apart, or it stick properly, and if it didn't stick properly, then always carry an extra bag so that you can like add the cements