

CoralCarib Newsletter

Coral Chronicles: CoralCarib's Newsletter
Summer 2025 Edition

Regional Update

How Coral Larvae Travel

What if the corals we plant today could help revive reefs hundreds of miles away? A new larval connectivity model used to understand how coral larvae, or baby corals, move between reefs via ocean currents can provide a better idea of how far coral restoration can reach. Scientists from the CoralCarib team recently mapped 53 key reef sites in Cuba, the Dominican Republic, Haiti, and Jamaica using computer simulations and detailed ocean data to track coral larvae movement where restoration is either happening or could take place in the future.

The results showed that coral larvae can travel many kilometers from where they were spawned, spreading to other reefs and helping them recover. This means that restoring one reef contributes to enhancing distant coral populations.

This connectivity is especially important as mass coral bleaching events, like those in 2023 and 2024, severely damaged reefs across the region. As corals reproduce, their larvae can help repopulate their area and also more distant reefs, increasing genetic diversity and giving new life to more vulnerable coral populations. However, not all sites have ocean currents that carry baby corals to other locations, so identifying the sites that act as sources to other areas is critical for strategic, long-term coral restoration efforts.

This new model shows that local coral planting efforts are beneficial at the regional level and impacts the entire reef network it supports.



📍 Dominican Republic: Reef Restoration Progress and Aquaculture



Fundación Grupo Puntacana:

In the Dominican Republic, Fundación Grupo Puntacana (FGPC) successfully transplanted nearly 3,000 corals using biodegradable nets, an alternative to reduce plastic waste and a structure for young corals to anchor and grow.

At the coral transplant sites, *Orbicella faveolata*, *Pseudodiploria clivosa*, and *P. strigosa* had the highest survival rates, of up to 84%. *Acropora palmata* showed impressive growth, with a 58% survival rate over six months, from November 2024 to May 2025. With an overall survival rate of 58%, these results show the progress of restoration work in the region using sustainable techniques.

The overall survival rate was 58%. Of that percentage, the species that fared best was *Orbicella faveolata*, with 84% of that 58% over the course of six months when they were transplanted in November 2024. Additionally, Fundación Grupo Puntacana hosted three hands-on courses on sustainable marine aquaculture, covering hatchery life support systems to fish reproduction and larviculture techniques. Over 50 local participants including fishers and marine practitioners acquired skills to directly support coral propagation and improve livelihoods.

These efforts help restore coral ecosystems and equip coastal communities with tools for a sustainable, reef-dependent future.

FUNDEMAR

Dominican Republic: Coral Spawning Season and Regional Collaboration

From May 21–24, during the peak of spawning activity, FUNDEMAR led multiple nighttime dives to collect coral gametes, using ecological monitoring and assisted fertilization techniques to enhance coral reproduction.

Furthermore, colleagues from CoralCarib Jamaica from TNC and their partner Alligator Head Foundation joined the FUNDEMAR team for hands-on training during this spawning season. Both teams participated in gamete collection, larval rearing, and the use of SECORE “CRIBs”, which help coral larvae settle on substrates and grow into recruits. These activities focus on the sexual reproduction of corals to boost resilience and genetic diversity, especially after the severe bleaching events in 2023 and 2024.

The spawning season at FUNDEMAR also served as a knowledge-exchange platform with other partners across the region. External teams from Baní, Fundación Ecológica Maguá, and representatives from Haiti and Cuba also participated. Cuban partners from the Ciénaga de Zapata region will soon replicate similar monitoring and gamete collection activities in August.

In addition, the recent opening of a new Marine Innovation Hub hosted by FUNDEMAR and Fundación Grupo Puntacana will help expand future coral restoration efforts under the CoralCarib project. The facility is now in use for coral larvae cultivation taking place in over 40 aquariums. CoralCarib in the Dominican Republic is creating a network of reef guardians aimed at coral restoration efforts across the Caribbean.

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Haiti's Initiative for Environment and Integrated Development (IEDIH):

In Haiti, CoralCarib partner IEDIH is working on a series of livelihood-focused activities to support local communities and improve income opportunities through more sustainable practices and reef-positive enterprises. The organization is focusing on three major activities including:

- **Installation of Fish Aggregating Devices (FADs):** The team acquired the equipment, and a technician has been hired to begin installing FADs. These offshore devices attract fish and are designed to ease pressure on nearshore reefs. Fishers will receive training on how to manage and benefit from these systems.
- **Fishing Gear Swap:** To encourage more sustainable fishing practices, IEDIH is facilitating a gear swap, where fishers can replace unsustainable fishing gear with more reef-friendly alternatives. The team is currently assessing the most effective and appropriate gear options for the community before distribution begins.
- **Small Business Support:** IEDIH is also working to support reef-positive small businesses – from eco-tourism ventures to coastal enterprises – that reduce marine impacts. These businesses offer alternative and sustainable livelihoods and align with CoralCarib's conservation goals.

Haiti Ocean Project:

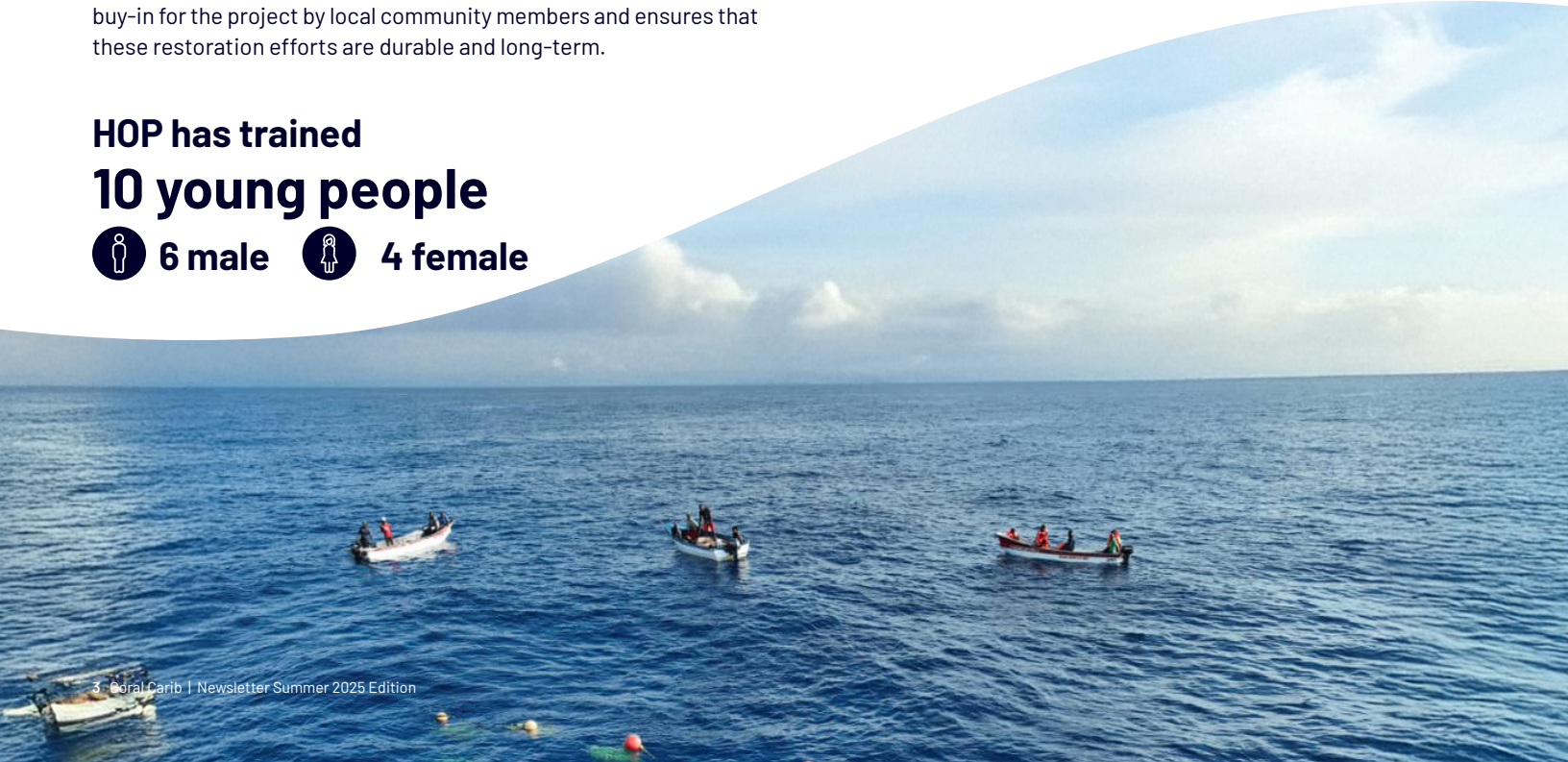
In the Petite Rivière de Nippes, local youth under the Haiti Ocean Project (HOP) are working to restore corals in the area and supporting the improvement of Haiti's marine environment.

This year, HOP has trained 10 young people (6 male, 4 female) in coral identification and restoration techniques. Four youth received specialized training in coral microfragmentation, a method used to accelerate coral growth.

The team carefully broke larger coral colonies into 240 microfragments of *Porites porites* and *Pseudodiploria strigosa*. They used tools including rubber containers, seawater, and small aquarium pumps to keep the coral alive overnight before transporting them to the nursery. The youth also suspended the microfragments on coral trees using fishing line typically used to make gillnets in Haiti. Of those, 214 *Porites porites* microfragments were successfully hung. For CoralCarib Haiti, involving youth and fishers from the community is critical to address the pressures the reefs face from overfishing and other human impacts. Empowering local young leaders supports buy-in for the project by local community members and ensures that these restoration efforts are durable and long-term.

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Building Local Capacity for Coral Restoration

Jamaica's CoralCarib team has had a busy season of restoration activities and regional knowledge exchanges aimed at strengthening local capacity and scaling coral restoration in the country.

From April to June, our CoralCarib Jamaica team led or participated in a series of hands-on trainings and workshops:

- **Coral Nursery Construction and Fragmentation Training (May 5-9):** Teams built and stocked new in-water coral nurseries using donor corals, or healthy adult colonies used to propagate coral fragments.
 - **Coral Restoration Action Plan Workshop (May 12-14):** Seventeen people including coral restoration practitioners and government agency staff were trained in a workshop focused on climate-smart coral restoration planning, where they developed a coral restoration action plan tailored to each site's unique needs.
- Macrofragmentation Activities:** Earlier this year, the team led a successful macrofragmentation effort using *Orbicella* species. These coral "macrofrags" were outplanted onto restoration sites, with donor colonies healing well. The goal is to replicate this method across additional sites.

As part of **regional knowledge building**, the Jamaica team joined partners abroad for coral spawning season training and exchanges:

- **FUNDEMAR, Dominican Republic (May 19-27):** CoralCarib's Jamaica team joined partners in Bayahibe for a coral spawning observation dive and fertilization training. This included collecting gametes, constructing spawning nets, and lab work to ensure optimal conditions for fertilized embryos. Partners observed the spawning of species like *Orbicella faveolata* and *Diploria labyrinthiformis*, collecting data to build Jamaica's own spawning calendar.
- **Spawning Program Expansion in East Portland (May 18-28):** The CoralCarib team is expanding spawning efforts in East Portland and encouraging other coral practitioners across Jamaica to begin observing and collecting data during the spawning season.
- **Knowledge Exchange with Punta Cana Foundation (June 23-27):** An aquarist from Fundación Grupo Punta Cana traveled to East Portland to assess how land-based (ex-situ) coral labs are set up and operated. The goal is to improve and expand Jamaica's own ex-situ capabilities and to scale these systems effectively. These initiatives are helping Jamaica's restoration program strengthen its local knowledge and regional collaboration.



Coral Monitoring Sites Installed

From April 10–15, 2025, a joint team from the Acuario Nacional de Cuba, the Institute of Marine Sciences (ICIMAR), and the Marine Research Center (CIM) conducted a field expedition in Ciénaga de Zapata National Park, Matanzas. The mission focused on installing permanent underwater anchor points to mark intervention and control plots at three coral reef sites: Cueva de los Peces, El Tanque, and Punta Perdiz. Over the course of the trip, the team successfully placed 72 anchors and carried out benthic and fish monitoring, along with water and sediment sampling across all sites.

Water quality assessments included nutrient and organic matter analysis, as well as in-situ measurements of temperature, salinity, pH, dissolved oxygen, and chemical oxygen demand. Samples for microbiological and phytoplankton analysis were also collected and preserved for laboratory evaluation. These efforts help establish long-term monitoring for coral restoration and ecosystem health in Ciénaga de Zapata.

Over the past months, CoralCarib Cuba also advanced community engagement and capacity building in Guasasa and Playa Girón, updating communities on project progress, and outlining upcoming restoration actions.

Training sessions strengthened local knowledge in sustainable family farming, solid waste management, and sustainable tourism, with practical examples from across Cuba and Latin America. A specialized workshop on environmental legislation strengthened understanding of key Cuban laws protecting coral reefs and high-value ecosystems, reinforcing the role of local governance and multi-agency cooperation in coral reef conservation.

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