

Press Release from *Reef Renewal Foundation Bonaire*  
September 18, 2023

## Safeguarding the Genetic Diversity of Bonaire's Coral Reefs

### SUMMARY

- Reef Renewal Foundation Bonaire (RRFB) uses selective breeding and assisted fertilization to increase the resilience of Bonaire's coral reefs in the face of disease and rapidly warming waters.
- RRFB and partner organization Secore International share tools, expertise, and resources to strengthen populations of key coral species in Bonaire.

(Bonaire, Dutch Caribbean) Reef Renewal Foundation Bonaire (RRFB) is focused on boosting the genetic diversity of coral populations affected by Stony Coral Tissue Loss Disease (SCTLD), a serious and enduring threat to Bonaire's reefs. As part of their adjusted restoration strategy, RRFB assists the sexual reproduction of corals that are vulnerable to the disease via larval propagation.

Boulder brain coral (*Colpophyllia natans*) is just one of the 12 species RRFB targets for coral restoration. Last week, the team collected reproductive gametes (sperm and eggs) from a variety of spawning *C. natans* colonies, including some that were actively infected by SCTLD.

RRFB facilitated the fertilization of gametes from healthy and diseased colonies, creating entirely unique coral strains via genetic recombination. Using selective breeding as a tool to enhance genetic diversity, RRFB sires corals that are potentially stronger and better able to cope with SCTLD, warming waters, and other threats to the reef.

The larval propagation program is executed in close collaboration with Secore International, a worldwide organization dedicated to researching sexual reproduction in corals. Last week, 7 members of the Secore team joined RRFB in Bonaire for boulder brain coral and staghorn coral (*Acropora cervicornis*) spawning season.

After a week of night dives and gamete collection at several locations, both teams were able to produce over 700,000 coral larvae, each with its own, genetically distinct makeup. The larvae will spend a few days swimming inside underwater enclosures and, once they've settled, either be outplanted back to the reef or brought to RRFB's gene bank. By stocking diverse samples of coral, RRFB ensures that resilient genotypes can be preserved, identified, and propagated.

September's spawning milestones demonstrate the importance of sharing knowledge and integrating resources when approaching coral restoration and conservation in the Caribbean. For over half a decade, RRFB and Secore have worked closely to develop and implement cutting-edge techniques for coral restoration, and adapt them to key coral species in Bonaire. At a time when corals are facing disease, rapidly warming waters, and other climate-induced threats, the collective efforts of both organizations are crucial to ensuring the long-term resilience of Bonaire's reef ecosystem.

## PHOTOS

Please contact [caitie@reefrenwalbonaire.org](mailto:caitie@reefrenwalbonaire.org) to request high-resolution versions of all images.



*RRFB diver collects gametes from a spawning colony of boulder brain coral (*Colpophyllia natans*) infected by SCTLD. Credit: David J. Fishman*



*Reef Renewal Foundation Bonaire (RRFB), Secore International, and Reef Patrol teams on Bonaire for coral spawning season. Credit: RRFB*



*SCTLD-infected colony of boulder brain coral (*Colpophyllia natans*) spawns at Oil Slick Leap in early September. Credit: David J. Fishman*



*RRFB and Secore staff fertilize coral gametes from different colonies in RRFB's makeshift wetlab. Credit: Paul Selvaggio*



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### **Who We Are**

Reef Renewal Foundation Bonaire's (RRFB) mission is to help protect, replenish, and restore the biodiverse coral reefs of Bonaire. In collaboration with our partners, we focus on implementing innovative, science-based programs that expand and strengthen populations of keystone coral reef species. We do this so that the reefs of Bonaire can gain the necessary scale, genetic diversity, and resilience to thrive today and in the uncertain, ever-changing conditions of the future.

To learn how to get involved or lend support, please visit <http://www.reefnewalbonaire.org> or email [info@reefnewalbonaire.org](mailto:info@reefnewalbonaire.org).



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