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# Coral Reef Restoration Project Will Create First-of-its-Kind Built Coral Ecosystem in Antigua & Barbuda

New 'Ocean-Shot' program combines philanthropy and business with science and government to restore a thriving and resilient coral ecosystem and leverage emerging technologies effectively to create transferable, scalable solutions

WASHINGTON, D.C., -- Deborah Brosnan & Associates - leader in environmental risk reduction and problem solving across government, civil and private sectors - in partnership with global philanthropist, entrepreneur and environmentalist, John Paul DeJoria, announced today the official launch of a massive, first-of-its-kind 1-ha coral reef restoration in Antigua and Barbuda. The project, dubbed "Ocean-Shot," will create a world-class coral reef program with solutions that are transferable, scalable, and can be deployed to other nations in urgent need.

Coral reefs are among the most ecologically and economically valuable ecosystems on our planet. They cover less than 0.1% of the world's ocean, support over 25% of marine biodiversity, and support over 1 billion people with a wide range of ecosystem services, such as coastal protection, fisheries production, sources of medicine, recreational benefits, and tourism revenues. Without reefs, coastal populations will become more vulnerable to environmental risks, jeopardizing their homes and economic wellbeing which could push millions to flee to more stable countries. Strong coral reefs and resilient island nations will help reduce the likelihood of climate-forced migration in the future.

Recent studies have concluded that well-planned, well-funded, and long-term coral reef restoration can be a useful tool to support coral reef resilience. The Ocean-Shot project is aimed at meaningfully contributing to that effort.

"Humans have mapped the human genome, landed astronauts on the moon, and, in less than a year, developed a viable vaccine for humanity-threatening virus. It is time to focus the same attention on our oceans with bold, ambitious, and achievable initiatives," said **Dr. Deborah Brosnan.** "We must build new partnerships, models, and funding to tackle climate change and restore our oceans at scale -- Ocean-Shot is pushing the envelope on tech in a way that's never been done before. This is going to be the hub of coral testing innovation in the Caribbean."

Dr. Brosnan and her team spent nine months developing the project, which included evaluating the environmental and hydrodynamic marine conditions, conducting reef assessments, and climate risk analyses. They explored the range of restoration techniques currently available and under development and identified all the different elements (e.g., personnel, equipment, travel, reef and nursery construction and installation) required to make this a successful program with longevity.

"We have the responsibility to make the world a better place for our having been here," said **John Paul DeJoria**. "I am committed to furthering new and advanced environmental conservation efforts, and am proud to partner with Dr. Brosnan on this innovative and impactful initiative."

## UTILIZING EMERGING TECHNOLOGIES TO FOSTER SUSTAINABILITY

- The Ocean-Shot "Living Lab" will be a place to test new technologies to see how quickly we
  can restore reefs, plant and grow viable corals, and ultimately create solutions for other island
  nations to readily deploy.
- Reef Architecture Determines Reef Function. The "shape" of a reef plays a key role in biodiversity and the ecosystem services it provides. Dr. Brosnan's team selected a design and shape for the reef that will mimic the natural reefs (now dead) that occur in the area, and also provide key services (such as storm surge and sea level rise protection).
- Coral Nursery to Seed the Reef and Restore Species. While reef architecture is critical to
  coral reef function and stability, it is vital that the reef be populated with viable coral species
  that can withstand future conditions and that the ecosystem be in balance (e.g. herbivores to
  maintain space for coral recruitment and growth). A coral reef nursery is currently being
  planned to support the reef habitat restoration, several species have been proposed as initial
  candidates and the final location is to be determined.

The built reef will consist of a series of reef modules with a range of interior interstitial and isolated cellular chambers to provide opportunities for colonization by corals and other organisms. Working with a designer to create the most appropriate structure for the habitat, the built coral will be constructed on site at the project's batch plant and maneuvered into the location.

Designed to attract innovators in technology, as well as divers and citizen scientists -- Ocean-Shot's 2.58 acres of coral reef restoration will collectively address the most pressing sustainability problems that are impacting all coastal nations across governance, science and technology, and industry.

### **LOCATION**

The project will be established in Antigua and Barbuda, which is ideal for many reasons:

- The team's knowledge of the biodiversity, ecosystems and culture and deep connection with the Island.
- The depth, historic reef structures, and local hydrodynamics, and amount of uniform space available, as well as the supporting resources, are ideal to create a successful program.
- The Nation of Antigua and Barbuda represents many Island nations around the world that rely
  directly on coral reefs, and where critical interventions are needed. This goal is that this model
  can be replicated globally in these regions.

### **INSTITUTIONAL PARTNERS**

- PADI: Dr. Drew Richardson, President and CEO. As the leader in the dive industry, PADI's
  engagement and partnership helps the wider reach of this effort and ensures that it will be
  embedded in dive practices. In addition, this program will form the basis of PADI AWARE
  Foundation's development of best practices guidelines for coral reef restoration and monitoring
  that will be the dive industries' standard practice and approach.
- Government of Antigua and Barbuda (GoAB): Prime Minister Gaston Browne is directly involved in this project, as is the Minister for Environment and Health Molwyn Joseph. They have pledged their full support and that of their agencies to advance the effort. In addition, the project links with the policy of ocean resilience and blue economy being developed.
- Community: Individuals and entities in Antigua and Barbuda and globally. In the development
  and execution of this project Ocean-Shot is engaged with individual colleagues in institutions
  across the globe. Locally, they have engaged, hired, and trained local personnel all of which
  will continue as vital parts of the project.

#### **ABOUT DEBORAH BROSNAN & ASSOCIATES**

Deborah Brosnan & Associates brings 25 years' experience of successfully crafting innovative science-based solutions to environmental challenges for discerning clients worldwide who want the best for their project, environment, and community. Led by renowned scientist Dr. Deborah Brosnan, they are sought out by companies and governments seeking lasting solutions to climate-change and environmental issues.