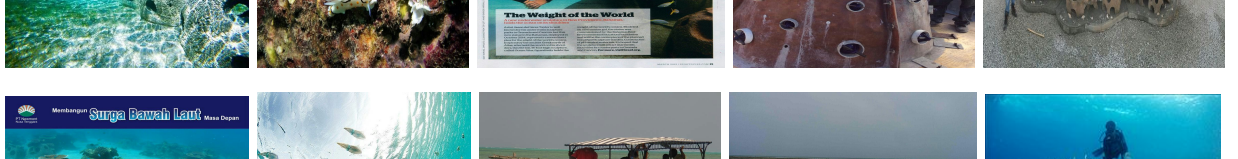
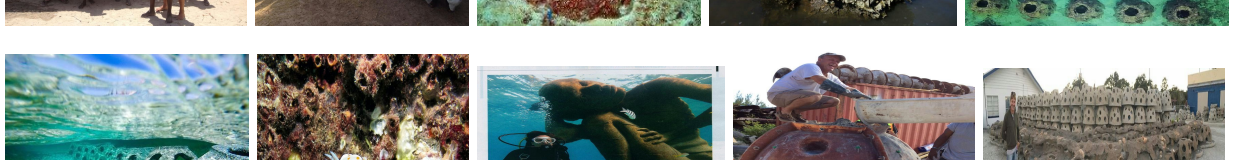
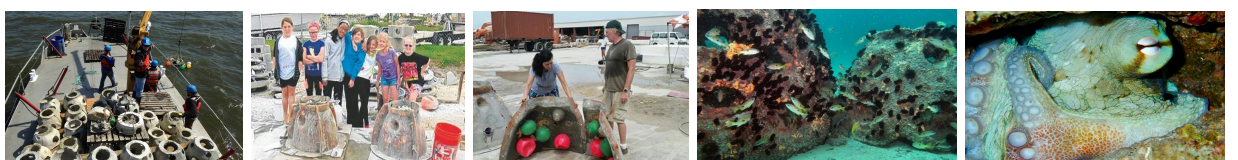
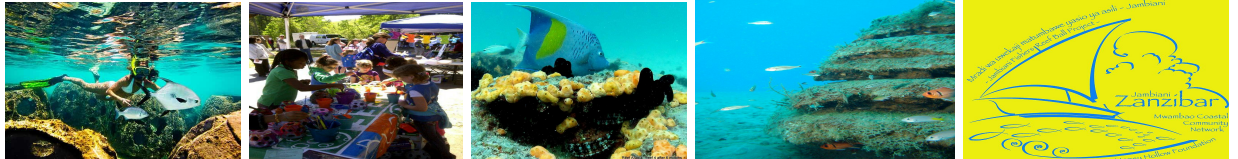


REEF
BALL
F O U N D A T I O N



ANNUAL REPORT: UPDATE ON PROJECTS 2016





IMPACT

Conducted over **6000** Projects Worldwide

Deployed over **1/2** million Reef Balls

Global Reach of **70** Countries

9 Billion Kilograms of Biomass Will Be Added
to the World's Oceans in the next 500 years
as a result of Reef Ball efforts

We make our impact through education, raising public awareness, community involvement and innovative Reef Ball technology.



Education

At the Reef Ball Foundation, we believe it's far easier to save our ocean ecosystems than rehabilitate them. Here is snapshot of some of our educational activities.



Todd Barber instructs students in the Bahamas





Above: Kathy Kirbo speaks at primary school in Zanzibar, Tanzania.



Above: The Girl Scouts of Sarasota, Florida win the Bronze Award with their Reef Ball project. Watch video about their project produced by the city of Sarasota. [Girl Scouts Reef Ball Project Video](#)

Public Awareness

At the very least our many projects bring to the light the importance of our oceans and why they are worth protecting and restoring. To further our mission, Reef Ball has received extensive press coverage on CNN, ENN, the Discovery Channel, National Geographic, Weekly Reader, Popular Science, The Wall Street Journal, Mother Jones, Wired, Scientific American, The Economist and various diving publications and in numerous newspapers throughout the world.

Our featured article: The Economist: “Watery Dwellings-New Ways To Construct Underwater Environments Are Encouraging Marine Life and Boosting Fish Stocks.”

[The Economist article on Reef Ball](#)

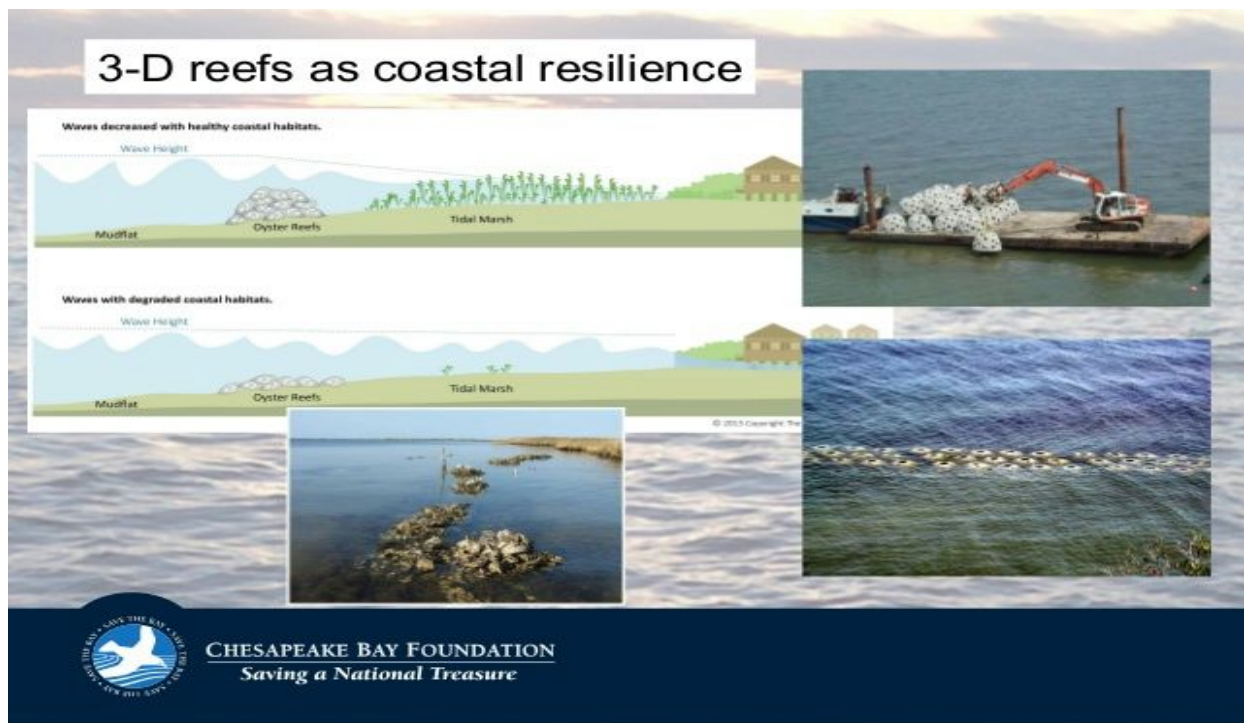
Awards

The Reef Ball Foundation won the National Environmental Protection Prize in 2012 by the Classy Awards which is the largest philanthropic awards ceremony in the country, is a Laureate of the Intel's global environmental award, The Tech Award, for technology that benefits humanity in 2005, CNN Hero-Defender of the Planet in 2008, and my Hero Project selected the Reef Ball Foundation as a science here in 2005.



Community Involvement

Working with local partners, community organizations and other nonprofits creates ownership for the community in reef ball projects. Here are just a few of valued partners.



The Chesapeake Bay Foundation helps restore the bay using Reef Balls and together we have created a great network of Reef Ball projects. You can read more about this work and watch the video of the 11 year monitoring video showing remarkable growth here: [Chesapeake Bay Monitoring Video](#)



Mwambao Coastal Community Network in Zanzibar, Tanzania initiated a reef ball project to help restore reefs and fisheries in the Jambiani area as the village relies on fishing and tourism for their livelihood. The Reef Ball team worked within the local community with our partners educating the village on conservation and restoring reefs. Other partners include Marine Cultures and the local fishing association. One year monitoring results indicate fish stocks and corals are rebounding and helping the local economy. This project was

funded by the Honey Hollow Foundation. For more information on this project: [Mwambao Network](#)

[Zanzibar Project Photo Book](#) [Zanzibar Project Slide show](#)



Official meeting with village leaders of Jambiani, Zanzibar



Partnered with the **Bahamas Reef Environmental Education Foundation (BREEF)** on the Sir Nicholas Coral Reef Sculpture Garden in Nassau, Bahamas. This project is the perfect fusion of conservation, art and education and provides habitat for fish, coral and other marine species. The snorkel and diving trail diverts tourists away from natural reefs providing space for restoration. The new reef acts as an outdoor classroom for environmental education and citizen science. The centerpiece sculpture, Ocean Atlas, is the largest underwater sculpture in the world created by Jason de Caires Taylor who uses reef ball technology to create an environmentally friendly reef. Local artists also contributed sculptures to the reef with Reef Balls

being the backbone of the trail. Other partners include the **United Nations** and the **Nature Conservancy**.

BREEF SIR NICHOLAS NUTTALL
Coral Reef Sculpture Garden

BREEF has created an exceptional snorkeling and diving experience in the beautiful Bahamian waters. Home to "Ocean Atlas" the world's largest underwater sculpture-art by renowned Bahamian artists, and reef balls that will transform into living reefs. The underwater garden is a perfect fusion of art, education and conservation.

Located in the waters off the Clifton Heritage National Park, Western New Providence.

Coral Reef Sculpture Garden

Featured on major international diving guides including: "Bahamas" by Peter G. Meyer, "Bahamas" by Peter G. Meyer, "Bahamas" by Peter G. Meyer, "Bahamas" by Peter G. Meyer.

Ocean Atlas - by Jason deCaires Taylor

Victims Mask - by Wilfrid Yerns

Luxury Mask - by Andrew John

Benefits of The Coral Garden

- Reef balls provide a hard substrate for coral and other reef-building organisms.
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Partial Funding Provided by the Grand Exuma Island Small Business Development Fund. Please contact BREEF if you would like to contribute to this project.

BREEF, P.O. Box 26, Little Harbour, New Providence, The Bahamas. Email: breef@breef.com Website: www.breef.com

Bahamas Reef Environment Educational Foundation

LIFE on the BAHAMIAN CORAL REEF

A FUSION OF ART CONSERVATION AND EDUCATION

The sculpture garden highlights the importance of coral reefs which provide food, employment and a living environment for many Bahamians. It also provides an opportunity for visitors to learn about the importance of coral reefs and the threats they face.

CORALS

Reef balls provide a hard substrate for coral and other reef-building organisms.

HERBIVORES

Reef balls provide a hard substrate for coral and other reef-building organisms.

OTHER REEF DWELLERS

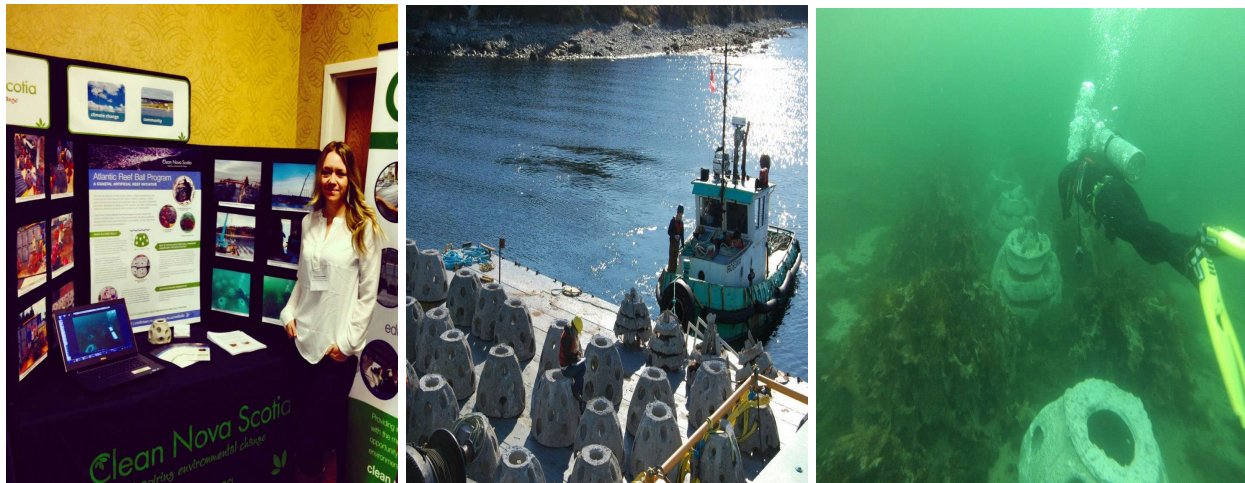
Reef balls provide a hard substrate for coral and other reef-building organisms.

BREEF is happy to have you come to see the sculpture garden and appreciate our support.

Bahamas Reef Environment Educational Foundation



Clean Nova Scotia initiated a Reef Ball project through the **Clean Foundation** to help restore the Halifax Harbor as part of a mitigation project with the government. With favorable results after one year monitoring they have expanded the program to the Atlantic Reef Ball Program.



One year's successful growth on Reef Balls in temperate waters.

Deepwater Horizon Oil Spill: As part of the BP oil spill restoration projects off the Gulf coast, The Reef Ball Foundation collaborated with the **Nature Conservancy** and many local organizations like **Mobile Baykeeper**, the **Alabama Coastal Foundation** along the coast of Alabama. The coalition with over 30 partners is working to build 100 miles of oyster reefs and plant 1000 acres of marsh and seagrass. The Nature Conservancy reports that once the reefs were installed the waves were breaking before they reached the shoreline and several months later scientists began seeing increased bird and fish activity around the reefs. For more information on the results of this project, please see the Nature Conservancy's video and article in Scientific American:

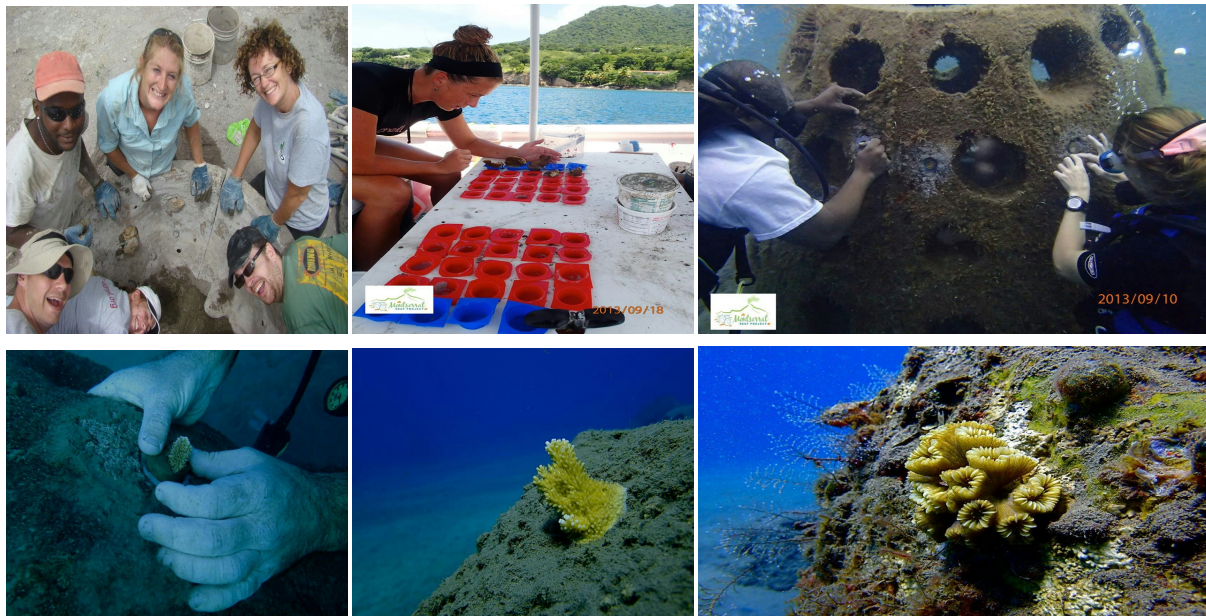
[Coastal Alabama Rebounds by TNC](#)

[Scientific American Gulf Restoration Article](#)



Mobile Bay Shoreline Protection with Reef Balls

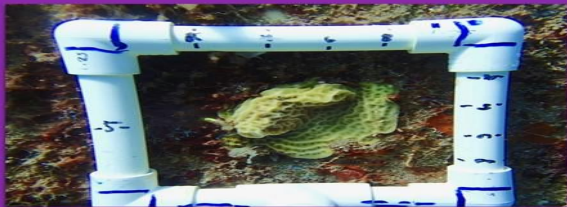
Montserrat Nearshore Habitat Restoration Project: Volcanic activity has damaged Montserrat and the surrounded waters. A Reef Ball habitat and coral transplant project was funded by the government of Montserrat, The Overseas Territories Environmental Program and the Montserrat Tourism Challenge Fund. The nearshore reefs are especially important for juvenile fish habitat and the island reports that the Reef Balls are covered with juvenile fish and the coral transplant are progressing well.



Montserrat Reef Project Lettuce Coral



At first glance this coral might not look that different... but look CLOSER. The small changes are great changes and all part of why we need to protect and save our reefs!



July 2014



October 2015

Great Star Coral



December 2010-
Original Piece



October 2012



October 2012- Outside of Reef
Ball



October 2014



October 2014- curling into the
inside of the Reef Ball

PT Newmont Minahasa Raya: PT Newmont funded the construction and monitoring of the largest coral reef program undertaken by a private company with more than 3,000 Reef Balls deployed in Buyat Bay and Totok Bay in Indonesia. PTNMR worked with the Tourism Office of South Minahasa in mapping existing coral reefs in both bays more than a decade ago. The objective was to slow reef loss, enhance fish stock and thereby sustain livelihoods of local fishermen while also developing underwater tourism in the area. Annual studies from 2001 show that the Reef Balls have become home to more 80 marine species and as a result of this work Buyat Bay has received international acclaim.



PT Newmont
Nusa Tenggara

Membangun **Surga Bawah Laut** Masa Depan



Pelestarian Terumbu Karang

2004



2006



2008



2010



www.ptnnt.co.id

Coral Growth on Reef Balls measured annually-Indonesia

Innovative Reef Ball Technology

Though the **Reef Ball Foundation** initially concentrated on coral reef restoration we have continually expanded our technology to meet the challenges of environmental problems. Our latest technology, **Living Seawalls**, is launching in the spring of 2016. The foundation was approached by the local government of Palmetto in the Sarasota, Florida area to help them restore their ailing sea wall. Traditional sea walls add to coastal erosion by removing the shore's ability to carry out a natural tidal process. The new living seawall will protect the shoreline and promote marine life. Traditional seawalls are not environmentally friendly.



Todd Barber stands by the “working” living sea wall at the reef ball plant. Please see this video about our new living sea wall technology by our partner Sarasota Bay Watch: [Living Sea Walls Video](#)

Reef Ball technology includes designed artificial reefs, ground breaking coral propagation and planting systems, estuary restoration, mangrove restoration, oyster restoration, erosion control, beach restoration, living shorelines, living seawalls and expert collaboration on on a variety of oceanic issues.

Marriott Hotel Grand Cayman: The Marriott Hotel enlisted the Reef Ball Foundation to restore the lost beach using our environmentally friendly beach restoration technology.



Before and after photos of beach restoration with Reef Balls.

For more information on the Marriott project see link: [Marriott Hotel Reef Ball Project Summary](#)

Living Shorelines: Innovative living shorelines project in Statford Point, Connecticut. This project is to protect the coastline from erosion caused by storms like Hurricane Sandy (**global warming**) and to improve wildlife habitat. This project

includes a partnership with the **Connecticut Audubon Society** as it will greatly improve bird habitat. Other partners include **U.S. Environmental Protection Agency, National Fish and Wildlife Foundation, U.S. Fish and Wildlife Service, Long Island Sound Funders Collaborative** and Dupont. For more information on this project: [Audubon Article](#)



Stratford Point, Connecticut Erosion Control Project

Malaysia Sea Turtle Conservation Project: Innovative use of Reef Balls to protect sea turtle inter-nesting grounds and curtail illegal trawlers. Reef Balls were randomly deployed in areas that were identified as turtle inter-nesting grounds. These Reef Balls were specially designed with a sharp and rough surface to cut trawler nets. The goal to keep trawlers away from the sea turtle areas. The deployment of the Reef Balls Talang Salang National Park resulted in a marked reduction of dead sea turtles, increase in turtle eggs and

increase in fish habitat resulting in economic gains for the local fishermen. The project has been expanded and included in the national environmental plan. Learn about the impetus for this project from this inspiring video: [Petronas Video About Sea Turtle Project](#)

For more information about this project: [Sea Turtle Restoration Article](#)

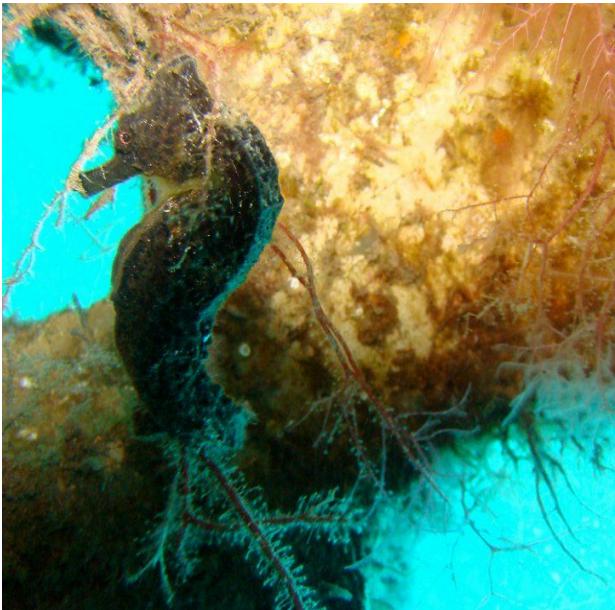


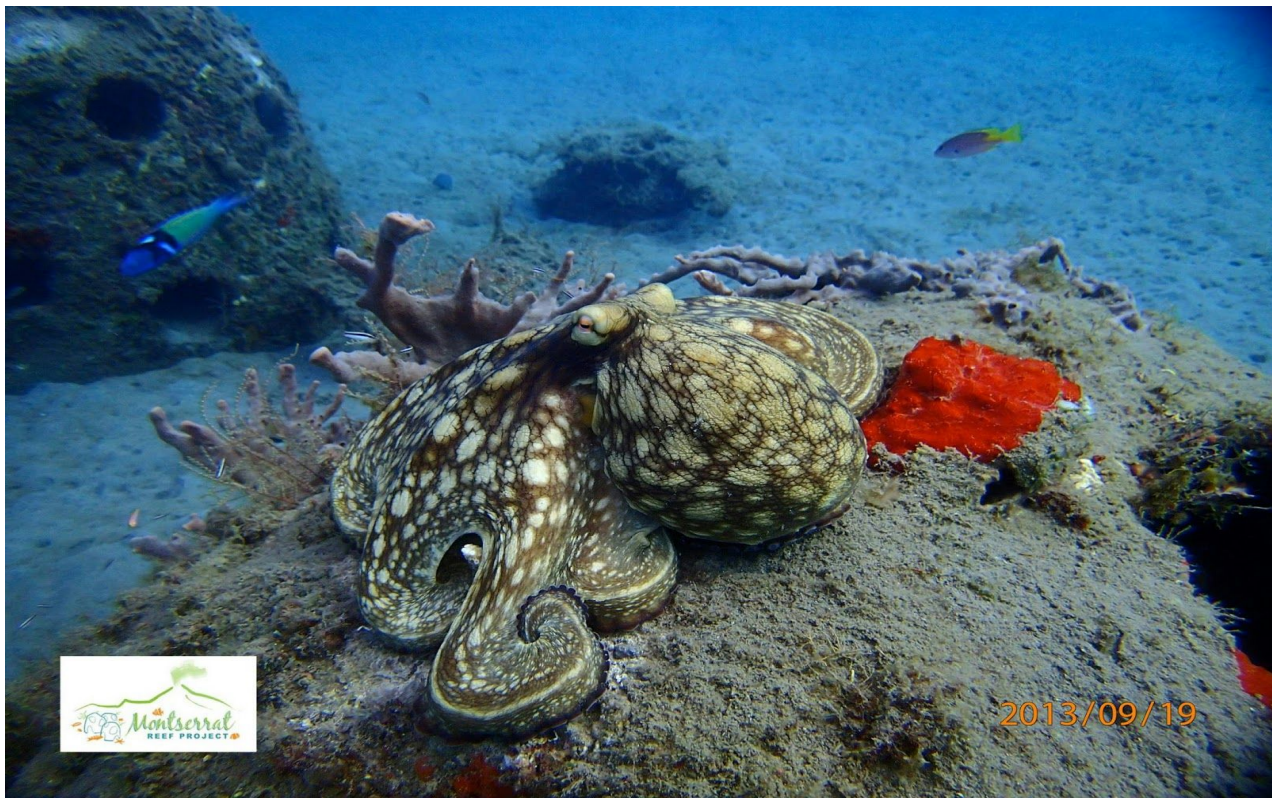
Mangroves are an important part of the coral reef system. For every 100 tons of water, 1 ton of mangrove can be grown, which in turn produces 100 lbs of fish and shellfish. **The Cayman Islands Department of Environment** enlisted the Reef Ball Foundation to help restore their mangrove population that was ailing due to hurricanes and human interactions. Using innovative Reef Ball technology, we designed Reef Ball systems specifically for mangroves. We created a protected mangrove nursery in a central location on Grand Cayman where the mangroves matured, then were re-planted throughout the

island. (Mangrove nursery below.) Video by the Cayman Islands Government TV on the mangrove restoration project:
[Cayman Dept. Of Environment Mangrove Restoration Project Video](#)



DIVERSITY OF MARINE LIFE ON REEF BALLS







Our work would not be possible without all the people who make it happen all around the world.





Research Links

[Long Island Sound Study](#)

[A Study In Sustainable Development After Mine Closure](#)

[Living Shorelines TNC](#)

[Why Biomass is important](#)

[New York Times: Climate Related Death of Coral Reefs Around the World Alarms Scientists](#)



For more information about the work of the Reef Ball Foundation please visit www.reefball.org.

The Reef Ball Foundation
890 Hill Street
Athens, GA 30606
Todd Barber, Chairman
Katherine Kirbo, Executive Director