Carbon Sink?

29 Years of

Habitat Enhancements

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Abstract

Carbon sequestration is highly important, and the next most important part is protecting our existing marsh grasses and mangroves. Keeping the carbon sequestered in marsh grasses and mangroves means countering wave action, and sea level rise. Years of experience using Reef Balls™ for shoreline protections have shown some best practices to follow. Reef Ball are successful at sequestering carbon. Reef Balls™ research shows they add resiliency. Reef Balls™ stay put in the storm. Research shows successes in the accretion of sediment. Reef Balls™ provide protection of existing marsh grasses and submerged aquatic vegetation. Reef Balls™ provide successes growing and planting mangroves in areas of high wave energy. Reef Balls™ are excellent substrata for oyster growth that further protects the marsh grasses. Reef Balls™ are a complex module providing benefi-

Case Studies

Reef Ball™ projects are spread around the world in over 80 countries and in a wide variety of ecosystems. Projects range from over 800ft depths of the Oculara Coral Banks to the shallow intertidal zones, from the warmth of the Caribbean to the cold waters of Nova Scotia.

1. Reef Ball Reef, Hernando County, FL
2. Tampa Bay Oyster and Shoreline Projects
3. Stratford Point, CT
4. Morris Landing, NC
5. Sarasota County Artificial Reefs, FL
6. Bahama's
7. Cayman Islands
8. Texas
9. Alabama
10. California
11. Virginia

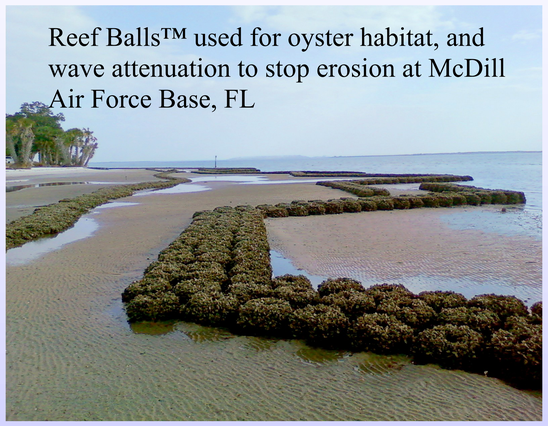
Additional sites are available on the map at ReefBall.org

Reef Ball™ on artificial reef sites provide surfaces for calcareous algae that could prove to be an excellent carbon sink. The encrusting sponges may also play a roll in carbon sequestration.

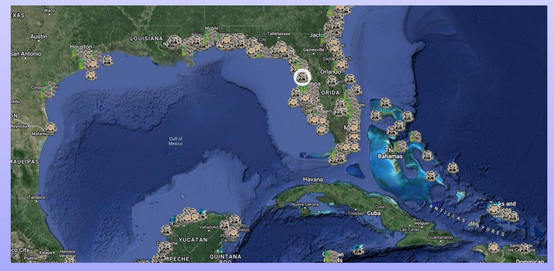
Corals transplanted to Reef Balls™ are sequestering carbon long term and thus qualify as a carbon sink. Around the world at peril corals are rescued and added to reefs.

Stratford Point project Reef Balls™ provided wave attenuation necessary for the marsh grasses to take hold. The marsh grass are a carbon sink and in this case are locking lead into the substrata and stopping erosion.

Mangrove forests are excellent at sequestering carbon. My raising mangrove in a nursery setting they can then be moved to a high energy coast and held in place by the oyster size Reef Ball™.



Reef Balls™ used for oyster habitat, and wave attenuation to stop erosion at McDill Air Force Base, FL



The Reef Ball Foundation, has a map for locating Reef Ball Projects. This map is tagging only offshore and shoreline reefs. Permitted sites should be posting regular surveys.

Conclusion

Monitoring of Reef Ball™ projects over the past years show enhancements to the local environments. The majority of projects can be directly linked to systems that are sequestering carbon. Ocean acidification will have an impact on the successes. Studies have show reef organism such as conk and urchins are growing larger and could be additional contributors to carbon sequestration in these systems as carbon dioxide levels rise. Using Reef Balls on shoreline or off shore reefs are a benefit and continue to contribute over time. With large amounts of marsh grass and mangroves restored behind the Reef Balls, in addition to macro alga, and organisms that qualify as sequestering carbon, the total amount of the carbon sink from Reef Ball projects is ever growing. In the future a formula that keeps a running total of carbon sequestered would be beneficial for those wanting to receive Blue Carbon Credits.