



CAN-037-Oyster Reefs-GOM

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FORWARD: its not only coral reefs it's oyster reefs as well

it's our ocean to save.....Executive Director WFCRC

Oyster reefs: How many do we really need?



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© The Nature Conservancy (Erika Nortemann) - Oyster habitat exposed at low tide along the Texas coastline attracts a wide array and large numbers of shorebirds and helps prevent coastal erosion.



A new oyster calculator can help rebuild oyster populations for maximum benefit to people and nature.

By Bryan DeAngelis, marine habitat scientist and North America Oceans program coordinator for The Nature Conservancy



Oysters are amazing. Like many, I love their cold, salty taste, and that the freshest ones still smell faintly of the sea.

Although oysters appear on the menu at some of the newest, hippest restaurants around the country, our desire to



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consume them is nothing new. Oysters were a dietary staple for Native Americans and then for early European settlers, who collected them by the handful from shallow coastal waters and who described the abundance of oysters along North America's coasts as "navigational hazards." But oyster populations have dramatically decreased over the years with over-harvesting. Oyster reefs are now the most imperiled marine habitat on Earth; some 85 percent have disappeared over the past two centuries.

This is a huge problem, and presents us with a remarkable challenge for the future. Oyster populations need to be rebuilt not only because they taste great, but also because they play a critical role in the environment by forming reefs that serve as critical habitat for fish and other marine life. What's more, oysters act as water filtering machines that improve water quality and clarity. Clean water in turn promotes the growth of seagrasses, another important habitat. And if you like fish—whether catching or eating them—oyster reefs provide essential habitat for fish to feed and grow. Oyster reefs also benefit people because they provide protection for shorelines against storm surges, acting as natural breakwaters.

It's for all of these reasons that The Nature Conservancy is working alongside partners and nearly 20,000 volunteers to restore oysters with the aim of restoring the benefits that they provide for people and nature.

© Clay Bolt - Nearly 20,000 volunteers have helped the Conservancy and its partners restore oyster reefs along U.S. coastlines.

Above, volunteers from Boeing used oyster 'castle reefs' to restore habitat in South Carolina.

The online oyster calculator

When restoring oyster reefs for cleaner water, more fish, or any other benefits they provide, it raises the question, "How many do we really need?" Until recently, we couldn't provide answers based on clear-cut science if, for example, leaders of a bayside community who wanted more fish asked, "How many oysters would solve this problem?"

Now we can start to answer such questions. In 2010, the Conservancy began working with the National Oceanic and Atmospheric Administration (NOAA), the National Fish and Wildlife Foundation, and a large group of shellfish, marine and fisheries scientists, to develop the science and tools to determine how many oysters would be needed to filter water in a given



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estuary or bay or how many are needed to produce a desired increase in fish. Of course, figuring this out requires a lot of math that involves a lot of different input and parameters, which is why one of the tools we produced was an [online oyster calculator](#) that makes it easier on those who are planning or implementing restoration projects.



The partners also recently published an accompanying [Manager's Guide](#) to assist natural resource managers and restoration practitioners in making the case for oyster restoration and in setting quantitative objectives for restoring oyster reefs at an estuary, or bay-wide scale.

© Jerod Foster for The Nature Conservancy - Researchers at Matagorda Bay conducted extensive studies before efforts to restore oysters began in 2013.

Oyster calculator: real-world applications

Matagorda Bay in Texas was once home to over 40,000 acres of oyster reefs—more than enough to fully filter all the water in the bay. Today, only a fraction of that habitat remains. The Conservancy and its partners began plans and preparations to restore oysters at Half Moon Reef in Matagorda Bay in 2006, and construction began in 2013. Since then, the partners have restored more than 54 acres of oyster reef habitat at Half Moon Reef, and have monitored the results closely.

Using data from the last monitoring at Half Moon Reef, the Manager's Guide and online calculator to compute water filtration provided by this project, the restored reefs now filter 12.4 million liters of water per hour, or 7 percent of Matagorda Bay during the summer months. So when setting objectives for oyster reef restoration here, aiming for the full filtration of the estuary may be a suitable long-term goal.

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Calculators for other habitats?





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The initial interest in the oyster calculator and Manager's Guide and its potential to help set achievable objectives for oyster reef restoration have spawned the question, "Can we create similar tools for other habitat types that provide valuable ecosystem services?"

Our answer—yes. The Conservancy is working with NOAA to do just that for salt marshes and seagrass, which can help improve water quality, protect shorelines and provide critical habitat for wildlife, including fish, shrimp and crabs, as well as shorebirds and land animals.

Learn more about The Nature Conservancy's Work with Oysters at oceanwealth.org.

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*The only thing necessary for the triumph of evil is that good men do nothing"....**Edmund Burke***