

Search input field

Search input field

- Home
- News
- Technology
- Markets
- Personal Journal
- Opinion
- Leisure
- Autos
- Careers
- Real Estate

TODAY'S NEWSPAPER MY ONLINE JOURNAL

Special Offer

Subscribe to the print Journal today and receive 8 weeks FREE! Click Here!

Advertiser Links

Featured Advertiser RBS and WSJ.com present "Make it Happen" find out how RBS and WSJ.com can help you "Make it Happen". Click Here ...

A Special Advertising Section on SIBOS 2007 presented by Citi

A Guide to Financial Planning sponsored by John Hancock

Check Out The New Porsche Showroom Here.

HP Notebook & Verizon Wireless

Find out what's Behind the Screens. Presented by SHARP

The Virtual Handshake sponsored by CIT

See what's new at AA.com

AGILITY a new logistics leader

From Balls of Concrete To Habitats for Sea Life

'Designer Reefs' Proliferate As a Tool to Counter the Toll Of Pollutants, Overfishing

By GAUTAM NAIK
October 26, 2007; Page B1

ISLA MUJERES, Mexico -- During a recent dive here, Todd Barber hovered above such familiar tropical sights as red sea sponges, iridescent fish and a half-hidden moray eel. But the coral reefs -- hollow, spherical and made entirely from concrete -- were anything but typical.

Mr. Barber wasn't surprised, though. A decade earlier, he created the artificial reefs using 300 concrete "reef balls." Now, those once-bare and ugly spheres have been transformed into minireefs, rich with life.

"They're in pretty good shape," said Mr. Barber after he climbed onto a boat and stripped off his scuba gear. He was particularly pleased by the presence of a Pederson shrimp, a translucent creature with blue flecks making a reef ball its home.



Mr. Barber is leading a charge to build "designer reefs" that will replace or support natural ones as the effects of overfishing, pollutants and disease take a growing toll on these vital ecosystems. His nonprofit Reef Ball Foundation has so far cultivated about 4,000 reefs in 55 countries. Projects range from a mile-long reef in Malaysia to a half-mile one at a millionaire's island in the Caribbean.

Artificial reefs aren't a new idea. For years, fisheries have made faux reefs by dumping junk -- old boats, airplanes, washing machines -- into the sea. But such unscientific efforts can go haywire. In 1972, about two million tires were dumped in the waters near Ft. Lauderdale, Fla., in an attempt to provide a habitat for fish. The tires failed to attract marine life and instead littered the ocean floor. They are now being removed.

The new "designer reefs" are much more sophisticated. EcoReefs Inc., of Jackson, Wyo., sells ceramic structures shaped like branching corals, essentially a prefabricated kit for making a customized reef. A Philippine company molds artificial coral whose shape, texture, color and even chemical signature are much like the real thing. One quixotic scientist tries to spur coral

EMAIL PRINT

Start a FREE trial of the Online Journal



Subscribe to The Print Journal



Free US Quotes:

Symbol Name

Search input field

Get FREE E-Mail by topic

Check Out our Mobile & Wireless Services

DIGEST OF EARNINGS

Details of the latest corporate earnings reported for FREE.

advertisement

TODAY'S MOST POPULAR

1. Fashion Bullies Attack -- In Middle School
2. Leopard: Faster, Easier Than Vista
3. BofA's Wall Street Retreat
4. Pioneer Helped Merrill Move Into CDOs
5. Debt vs. the Dream Car

MORE

PEOPLE WHO READ THIS...

Also read these stories:

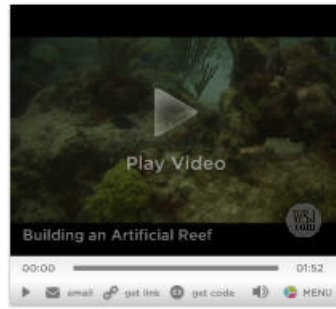
- Genetic Maps Stir Concerns Over Profiling
- Marketers Use Trickery to Evade No-Call Lists
- The Pop-Up Mansion
- Beer Makers Get Crafty
- Atlanta's War on a Little Bivalve

Recommendations by loomia What's This?

Personalized Home Page Setup

Put headlines on your homepage about the companies, industries and topics that interest you most.

growth by piping low-voltage electricity through large metal mesh placed unde



Designer reefs made from concrete balls help replace and support natural ones as overfishing, pollutants and disease take a toll on vital ecosystems. WSJ's Guatam Naik reports.

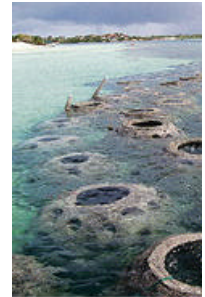
But copying Mother Nature isn't e reef may work in one location but Some coral fragments thrive only waters. Others must be oriented j won't grow. On the Caribbean isl reef-ball team made the mistake o upright instead of sideways, and t big storm. In Oman, which isn't k hurricanes, a storm earlier this ye: some coral growth on reef balls.

Reefs that develop naturally are c colonies of tiny coral polyps. Whe die, they leave behind a limestone which other polyps grow, slowly c and larger structures. These reefs size of a small flower bed to the C

Reef, a coral edifice that stretches 1,400 miles along the Australian coast.

Sea creatures depend on reefs for shelter and feeding and mating grounds. For are a rich source of fish and, increasingly, a destination for snorkeling, diving ; recreational activities. The U.S. National Oceanic and Atmospheric Administra that coral reefs world-wide provide as much as \$375 billion of services annual

But reefs face increasing danger as traditional threats are compounded by the effects of global warming. Higher sea temperatures have weakened or killed a large number of coral reefs through a process known as bleaching. Warmer oceans may also be triggering more frequent intense hurricanes, and a single such storm can trash parts of a 10,000-year-old reef in minutes. In addition, as more carbon dioxide is pumped into the air, more gets dissolved in the oceans -- turning the water more acidic and hurting coral growth.



Shown at low tide, the b beach erosion.

"About 30% of the world's reefs have been destroyed in my lifetime," says the 43-year-old Mr. Barber. If current conditions continue, of the world's reefs could disappear within 50 years, according to NOAA.

In Mexico, authorities from the National Marine Park off Cancun are relying c expertise to safeguard their reefs, which have been damaged by boat grounding hurricanes and a crush of tourists. Many snorkelers, for example, are nowadays artificial reefs with terrestrial pedigrees instead of those that sprouted from sea natural reefs need to rest," says Jaime Gonzalez Cano, director of the Cancun who estimates 600,000 snorkelers and divers visit the area every year.

Molded from concrete, a reef ball can be as small as a basketball or as large as inflatable bladder placed in its hollow center allows the ball to float, making it and maneuver in the water. Fragments of living coral are glued to the surface c is then submerged. If all goes well, the coral grows and eventually attracts fish life.



Rescued corals growing

At the second location, where 100 balls were planted in 2004, large sea fans waved in the current and fish darted through the reef's hollows. But even artificial structures are vulnerable: A hurricane hit Mexico in August, it tore a lot of soft growth, including colorful sponges and barnacles, from the reef balls.

The reef balls at the third site, 30 feet down, weren't planted with coral fragments. Instead, coral, sponges and other organisms sprouted spontaneously on the surfaces and attracted a multitude of fish. When one of the divers brushed aside the growth to get a better photograph of a moray eel, the frightened creature slithered forward and lunged at him. "It almost got my hand," said the diver, who was equally startled.

Mr. Barber got interested in restoring coral reefs in 1988, when a hurricane hit the Cayman Islands reef he first visited as a teenager. Sitting on the beach with his friends, he wondered what would happen if a beach ball plastered with concrete was rolled onto the floor. Would coral eventually sprout on its surface?

Early experiments suggested it would. So Mr. Barber quit his lucrative job as a consultant for Towers Perrin and put \$50,000 of his savings toward making reef balls. In 1994, he turned his company into a nonprofit, publicly audited foundation, figuring that governments -- some of his biggest clients -- would trust it more. The group has 100 volunteers who install reef balls all over the world.

Others have licensed the technology. Eternal Reefs Inc., of Decatur, Ga., charges \$6,500 to put a person's cremated remains into a reef ball. (It asks less for animals.) The Reef Ball Foundation gets part of the revenue and has final say about where the balls are placed.

Mr. Barber says his foundation, based in Athens, Ga., will oversee the installation of 100 reef balls this year, double the number in 2006. It costs an average of \$500 to make a single reef ball. There are now 550,000 reef balls in waters around the world. The United Arab Emirates has them fringing an island he owns.

Says Mr. Barber: "We're trying to keep up with global warming" and other factors that threaten reefs. "You've got to be an optimist and keep plugging on."

Write to Gautam Naik at gautam.naik@wsj.com

RELATED ARTICLES AND BLOGS

Related Content may require a subscription | [Subscribe Now](#) -- Get 2 Weeks FREE

Blog Posts About This Topic

- [8 errores y restando](#) ecos.blogalia.com
- [Acid oceans threaten corals](#) oceanacidification.wordpress.com

[More related content](#) Powered by Sphere 

 [FORMAT FOR PRINTING](#)



[ADVERTISERS LINKS](#)

[What's This?](#) | [Get Listed](#)

[Return To Top](#)

[Subscribe](#) [Log In](#) [Take a Tour](#) [Contact Us](#) [Help](#) [Email Setup](#) [Customer Service: Online](#) | [Print](#)

[Privacy Policy](#) [Subscriber Agreement & Terms of Use](#) [Mobile Devices](#) [RSS Feeds](#)

[News Licensing](#) [Advertising](#) [About Dow Jones](#)

Copyright © 2007 Dow Jones & Company, Inc. All Rights Reserved

