

## Let There Be Life! Kelp Forest Grows Over Once-Barren Seabed

**R**ecreational boaters and anglers now enjoy a 174-acre canopy of healthy kelp where once only barren seabed existed off the California coast at San Clemente. The new man-made ecosystem comes courtesy of an artificial reef created by placing approximately 120,000 tons of quarry boulders on the seafloor.

The reef, about two miles long by a fifth-of-a-mile wide and located roughly halfway between Los Angeles and San Diego, was built to mitigate possible damage to natural kelp caused by cooling-water discharge from Southern California Edison's San Onofre Nuclear Generating Station. It's believed cloudy water passing through the power plant's outflow pipe hinders kelp growth so the \$46 million project is designed to offset any loss.

Kelp forests in Southern California's ocean waters provide important habitat for baitfish, which in turn attract bass, halibut, sharks, and other aquatic species. Sea lions and seabirds such as gulls, pelicans, terns, and cormorants also frequent kelp forests, much to the delight of boating sightseers.

Construction on what's being dubbed the world's largest artificial reef was completed in 2008. But the wavy copper-colored fronds only recently reached the surface from 30 to 60 feet below.

"The builders did an excellent job

of boulder placement," says Stephen Schroeter, a University of California, Santa Barbara research ecologist who supervises monitoring the reef. "Moreover, the profile is much improved over past artificial reefs." Schroeter explains that formerly artificial reefs were built on sandy seafloors, but because the heavy boulders tended to sink in sand, they were piled high to compensate. But kelp never seemed to grow on these tall boulder fields and even vigorous replanting failed to help.

Scientists made a breakthrough when they discovered an association between boulder height and sea urchin populations. Sea urchins eat kelp, and artificial reefs high off the seafloor support huge colonies of sea urchins. After building a lower-profile test reef, with only a foot or two of sediment covering the bedrock, allowed kelp to flourish, the reef was expanded to its present configuration.

"I've fished the area 20 years and it looks like the reef works perfectly," says Orange County businessman Matt Stabley. "This year the kelp became super thick and I began taking my son out there. We catch halibut, calico bass, and white sea bass. It's interesting to be there. Lots of sea lions and birds to see." Wheeler North Reef, named after the late biologist and diver, is a half-mile from shore, making it a popular diving destination. — Jack Innis



## YOU'VE HEARD OF "ROLLING THUNDER"? HOW ABOUT "ROLLING TIDE"?

That's the name Cleveland Sea Scouts gave to their entry in the Great Lake Erie Boat Float last September — and they rolled away with the Most Artistic Style Award. Made from 600 recyclable Tide-brand detergent bottles and designed like a hamster wheel to roll over the surface of Lake Erie, its power came from — you guessed it — a Sea Scout named Andrew running inside, just as fast as he could.

The revolving craft with the recycling message crossed the finish line at Edgewater State Park Beach in the middle of the field of a dozen floats. The event, sponsored by the Cleveland Natural History Museum and Cleveland Metroparks, highlighted the responsible use of plastics and aimed to help limit the material entering our waterways. The high-density poly-



ethylene detergent bottles are readily accepted by recycling companies, helping manufacturer Procter & Gamble Co. meet its sustainability goals.

Ship 41, of Bay Village, Ohio, is no stranger to high honors. It won the 2008 BoatU.S. Sea Scout National Flagship Award as top performing Sea Scout unit in the country, and a few months later, landed a cool \$30,000 cash prize in the Interlux Waterfront Challenge for designing an innovative tool to clean up floating debris. Sea Scouting is open to all boys and girls, 14 to 21, and like all Sea Scout units, Ship 41 uses boats, seamanship, and nautical skills to develop character and leadership qualities in young people. For more information about Sea Scouting or to find a ship near you, visit [www.SeaScouts.org](http://www.SeaScouts.org).

— Ryck Lydecker