

Completion of world's first artificial kelp reef praised

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SAN CLEMENTE – State and utility officials applauded the completion Monday of the world's first artificial kelp reef that they say will provide a thriving habitat for fish and marine organisms for decades.

Spread over two miles south of San Clemente Pier, the pioneering reef was undertaken by Southern California Edison to make up for environmental damage caused by the San Onofre Nuclear Generating Station.

“In the end we have both the energy and the environment we need,” Cecil House, a Southern California Edison vice president, said during a ceremony attended by about 100 people on the pier.

The 175-acre reef was constructed by dumping 120,000 tons of rock ranging from the size of a soccer ball to a miniature refrigerator in a patchwork over an area about 1 mile by 2.5 miles, at a depth of 30 feet to 50 feet.

It began in 1999 when scientists built a 22-acre experimental reef to learn the best way to make one.

The reef is named for the late Wheeler North, a California Institute of Technology scientist and kelp researcher.

“There have been many failed attempts to build a kelp forest,” House said. “We learned you just can't pile high rocks and expect a successful reef.

“There's a preferred depth ... and an ideal type of ocean bottom,” he said.

David Kay, Southern California Edison's manager of environmental projects, said the rocks must be large enough to anchor the kelp, which are algae that can grow 1½ to 2 feet a day to a length of 120 feet.

Some of the rocks have to be light enough so the ocean can toss them about, to shake off organisms that crowd out the kelp.

Each kelp plant has gas-filled bulbs that buoy it to the surface and enables the long-stemmed organism to lift and carry lighter rocks to new locations as a way to propagate, Kay said.

“If the oceanography conditions are good over the six to nine months, ... we should see a giant kelp canopy all over the surface of the ocean next summer,” Kay said.

Peter Douglas, executive director of the California Coastal Commission, praised the reef's completion as “the closure of a circle, but the continuation of a process that's taken us about 35 years.”

“It wasn't easy. It was a lot of difficulty,” Douglas said in his only mention of a fight between the Coastal Commission and Southern California Edison over San Onofre's impact on ocean life.

The plant draws water in to cool its generators, killing fish and small organisms in the process. It also sends a plume of warm, cloudy water out into the ocean, which inhibits growth of kelp forests.

Douglas praised the partnership that the state coastal agency and the utility have formed.

“Once Southern Cal Edison understood what needed to be done, they accepted it,” Douglas said.

In addition to the kelp reef, the utility is restoring 440 acres of wetland at San Dieguito Lagoon, near the San Diego County Fairgrounds.

The utility has agreed to monitor the new kelp reef for 40 years to assure its success, but it's likely to last well beyond that period.

Kelp forests have sometimes been called the “rain forests of the sea,” because they provide shelter and sustenance for up to 800 species.

Besides providing habitat, the reef likely will attract sport anglers, commercial lobster fishers, and recreational divers.

The reef's \$46 million cost will be borne by ratepayers for Edison and the owners of San Onofre.

Edison owns 78 percent of the nuclear power plant, San Diego Gas & Electric owns 20 percent and Riverside County the remainder.

When fully operating, the plant generates 2,200 megawatts of electricity, enough to power about 1.4 million average homes.

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