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SCIENCE

Marine Life Thrives in Unlikely Place: Offshore Oil Rigs

By **ERIK OLSEN** MARCH 7, 2016

EUREKA OIL PLATFORM OFF CALIFORNIA COAST — Eight miles off the coast of Long Beach, Calif., the oil rig Eureka, which has stood here for 40 years, is a study in contrasts. From a distance, it looks like just another offshore platform, an artifact of the modern industrial landscape.

But beneath the waves, the Eureka and other rigs like it in the area are home to a vast and thriving community of sea life that some scientists say is one of the richest marine ecosystems on the planet.

“They are more productive than coral reefs, more productive than estuaries,” said Milton Love, a professor of marine biology at the University of California Santa Barbara. “It just turns out by chance that platforms have a lot of animals that are growing really quickly.”

Dr. Love, who has published research on marine life at offshore drilling sites, said the location of these rigs — in marine-protected areas in a cold current that swoops down from British Columbia — have made them perfect habitats for fish and other sea life.

Scientists and divers have been aware of the abundant life here for years, but a 2014 paper that Dr. Love co-wrote, published in *Proceedings of the National Academy of Sciences*, confirmed what many experts had already suspected: that most of the life was actually created at the rig rather than having come from other parts of the ocean and settled around the massive concrete pylons.

“For some of these major economic species like the rockfishes, there’s no question that there are more of them out in Southern California waters because the platform is there,” Dr. Love said.

This insight is adding momentum to efforts to convert some of these rigs into artificial reefs once they are decommissioned. Blue Latitudes, an organization founded in 2014 by two young scientists with degrees from the Scripps Institution of Oceanography in San Diego, is trying to increase awareness of the value of rigs as permanent homes for sea life.

“I think it’s time for us to step outside the box and think creatively about the resources we have,” said Amber Jackson, an oceanographer and conservation biologist who co-founded Blue Latitudes with Emily Callahan, a marine scientist. “To lose these ecosystems just because they are on an oil platform structure, I feel, is shortsighted.”

While so-called rig-to-reef programs in the Gulf of Mexico have existed for decades — more than 400 rigs have been approved for conversion since 1985 — the idea of leaving rigs in place as reefs is controversial in California. So far, none off the coast of California have been converted into artificial reefs.

“It’s seen as something which benefits the oil industry, and opposing the oil industry is the role taken by many environmental groups,” said George Steinbach, the executive director of the **California Artificial Reef Enhancement** program, a nonprofit advocacy organization funded by the oil industry.

The Eureka, owned by the Houston-based oil company Beta Offshore, is

one of 27 oil rigs off the California coast. Several major oil spills have occurred since they were built half a century ago, giving rise to a passionate environmental movement that has long advocated complete removal of the rigs.

“People here have been waiting for these oil platforms to go away,” said Linda Krop, an environmental lawyer with the Environmental Defense Center, an advocacy group based in Santa Barbara, where several offshore rigs can be easily seen from shore.

Ms. Krop disagreed that the science is settled on the role of the rigs in fostering marine life. Regardless, she said, leaving the rigs up would be tantamount to rewarding polluters with the windfall of not having to pay to remove them.

“When they built those platforms, that was a cost that they took into effect,” she said.

In an enormous oil spill in 1969, released 80,000 to 100,000 barrels of crude, leaving a slick over 40 miles of coastline and killing thousands of animals. The spill was national news and gave rise to powerful anti-drilling movement here.

Subsequent spills have hardened opponents’ resolve. In 2015, a pipeline owned by Plains All American Pipeline sprung a leak that released 3,400 barrels of crude into the ocean, fouling several newly created marine protected areas.

“It was like déjà vu all over again,” said Kathryn Phillips, the director of Sierra Club California. “I saw what it looked like, what it smelled like, and it was heartbreaking.”

But over the last decade or so, divers and scientists have discovered that the rigs harbor an unexpected bounty of life. Just beneath the surface at the

Eureka rig, sea lions prowl in the crystal clear waters; half a dozen species of rockfish and bright orange Garibaldi swim in the swift currents; and florid carpets of invertebrates and crustaceans cling to the rig's pylons.

“It’s the most amazing diving that I’ve ever done,” said Ashleigh Palinkas, a San Diego-based conservation biologist who came out to dive the rigs last October. “It’s like an oasis. The structure itself is really impressive. It gives you a sense of total weightlessness.”

Over the last few years, word has spread about the pleasures of diving the rigs. In 2014, Ms. Jackson and Ms. Callahan started advocating to allow oil companies to keep large sections of many of the rigs in place after they are no longer functioning.

The process of removing a rig and cleaning the site, known as decommissioning, is complicated and expensive, and includes plugging and cementing wells to make them safe. A total decommissioning means the removal of the entire structure. In a typical rigs-to-reefs effort, only the top portion of the rig is removed, usually to a depth of about 80 feet, so that they don’t pose any risk to ship hulls. The rest of the rig remains in place as a haven for sea life and for recreational diving or fishing.

California has a law that allows rigs to be converted into reefs. In 2010, then-Gov. Arnold Schwarzenegger signed a bill to allow partial decommissioning of rigs, but it immediately encountered resistance from some environmental groups that considered it too favorable to the energy industry. ,

Companies never took advantage of the law anyway, industry experts say, in part because they found the law’s requirements too byzantine and onerous. Another reason was that until recently, oil prices were high enough to justify keeping the rigs in place.

But that may be changing. And an amendment to the 2010 law, seeking to streamline the approval process, was introduced in the California legislature

last year and will be debated this year.

“I think with the current oil-price scenarios, there is an opportunity to try and establish a workable rigs-to-reefs program,” Mr. Steinbach said, adding that many rigs were nearing the end of their productive lives, raising questions about their ultimate fate.

The potential savings to the oil industry from converting all of the rigs off California to reefs, rather than removing them, could be more than \$1 billion, by one estimate. But under the law, oil companies would be required to put at least half of the money they save into state coffers to fund conservation programs. That has some groups here speaking out in favor of the rigs-to-reefs program.

“Nobody wants to see more oil spills,” said Mary Gleason, the lead scientist for the Nature Conservancy in California. “But in some cases it may make more sense and have more environmental benefits if we could do a partial decommissioning and use any cost savings to fund more ocean conservation and management, and fill some of the important funding gaps we have in the state to manage ocean resources.”

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