

BLUE GOLD

Diving decommissioned
Texas oil rigs in search
of aquatic riches

By James Sturz

CHRIS LEDFORD/TPWD ARTIFICIAL REEF PROGRAM

I'm sinking slowly through a column of clear blue nothingness 77 nautical miles southeast of Galveston. Forty feet turn to 60, and then to 80, but not until I've descended a dozen more feet do the remains of the abandoned El Paso Corporation oil rig appear.

Lopped off at its top with diamond-wire saws, hydraulic shears, and underwater torches, the rig is one of roughly 200 sitting at 90 feet or deeper off the Texas coast in the Gulf of Mexico. And far from forgotten, the structure is bustling with life. Its legs are lushly covered with algae, sponges, corals, mollusks, and darting crabs. Above me, almaco jack dash in to dismantle a swirling bait ball of mackerel scad. Before me, cocoa damselfish and sharpnose puffers dance along the crossbeams, while hogfish, angelfish, blue tangs, and blennies cruise the stanchions that extend another 130 feet to the Gulf's muddy floor.

I've never seen nature transform anything more: Hard edges have turned mottled and soft, unexpected outgrowths appear wherever I look. Suddenly, as if to accentuate this post-apocalyptic dream, two green stereoscopic lasers focus on a massive angelfish. They follow it like a sharpshooter's sight, except here the fish is being targeted for, well, life.

Divers conduct fish surveys on the bow of the *Kraken*.



Surrounding me in the clear blue Curaçao water are 11 scientific divers from Texas Parks and Wildlife's Artificial Reef Program, along with another three divers from the U.S. Geological Survey. Intern Jill Thompson-Grim holds the laser, while Artificial Reef Technician and Assistant Dive Safety Officer Allison Baldwin cruises by clutching a ZooKeeper lionfish containment unit. The device resembles a cross between a scuba tank and an umbrella stand, and Baldwin uses it to remove invasive fish. The squad employs wax-coated pages to log the abundance of fish species, while far below us another team of decompression divers surveys marine life around the rig at greater depths.

I'm lucky to be here. I've been given the rare opportunity to join these divers on a three-day trip into the Gulf of Mexico to collect information about these extremely unusual artificial reefs. The Gulf's 600,000-square-mile floor is predominantly mud and sand deposited by the Mississippi and other river systems. It's almost completely barren, so introducing structures to the environment creates habitats for coral and marine life to grow. Scientists have found that artificial reefs in the Gulf don't simply aggregate life, they help create it—and every time a new reef is born, it takes the pressure off the natural reefs at risk of being overfished. While Texas officials have been sinking ships in the Gulf for just this purpose since the mid-1970s, not until the late 1980s did anyone realize the potential for oil rigs.

More than 1,000 rigs operate off the Texas coast. They can run for up to 40 years, but federal law mandates their removal once they stop producing. In the past, this has meant using explosives to blast them from 15 feet below the mud line, before putting them on a barge to take to shore and scrap. The explosions alone can kill thousands of fish; toppling the structures kills even more. But the Artificial Reef Program's Rigs-to-Reefs initiative, started in 1989, creates an alternative.

Instead of removing the rigs, owners

decommission them and remove the part of the structure above the water as well as some 85 feet below the surface, so that ships can safely pass. The bottom of the rigs—along with the thriving reefs that have developed around them—remain intact. A typical four-leg rig produces 6 to 8 acres of habitat in 200 feet of water, and even more when it stands at greater depths. Some 500 rigs have been permanently converted to reefs in the Gulf of Mexico, predominantly off Texas and Louisiana. Meanwhile, half the money the rig owners save on removal from Texas waters—\$27 million to date—helps pay for Texas Parks' reef monitoring and research, including the data collection during my trip.

The evening before we dive the El Paso Corporation rig, our group of 15 divers and six crew sets out from the tiny Texas town of Freeport in the M/V *Fling*, a 100-foot crew boat refitted as a scuba charter. We motor through the night, passing shrimp boats, tankers, and flickering rigs, until the coastal lights fade away and are replaced by stars. Inside the galley, we go over the fish we'll see and the dive-safety protocols we'll use. Then we set up our gear in the stern and try to sleep in bunks below, wondering what the next day will bring.


"HAUL BACK!"

The action on deck starts early the following morning. Baldwin's team is baiting 10 hooks spaced across a single line. "Fishing!" one of them yells, as it goes overboard. Then Baldwin clocks five minutes of "soak time"—she uses a high-tech computer on her wrist to dive, but prefers a pink fitness watch, paired with a pink hoodie and matching pink work gloves adorned with Disney princesses for this. "Haul back!" she yells.

Texas Parks and Wildlife Natural Resources Specialist Adriana Leiva inspects the first round as it comes up: "Hook 1, no bait, hook 2, red snapper, hook 3, red snapper, hook 4, red snapper." Baldwin gasps. "Ugga bugga," she shouts, "that fish is big!"

CHRIS LEDFORD/TPWD ARTIFICIAL REEF PROGRAM



An underwater photograph showing a large, dark, rectangular structure covered in coral and marine life. A whale shark with a white and black spotted pattern is swimming in the foreground, partially visible. The water is clear and blue, with many smaller fish swimming around the structure.

The transformation of
the massive hard-edged
structure into
an aquatic forest—
an Atlantis or
Eden—is
fascinating.

A whale shark swims past
the High Island-A-389A rig.

Clockwise from top left: The M/V *Fling* before heading out into the Gulf; weighing a red snapper; divers preparing to enter the water.



“Ugga bugga,” she shouts, “that fish is big!”

Once the fish are unhooked, they’re measured, weighed, tagged, and returned to the Gulf with SeaQualizers—pressure-activated vises that open at predetermined depths to help offset the barotrauma that occurs when their air bladders swell during the quick ascent, preventing them from swimming back down.

“We look at the sizes, weights, and morphometrics,” Baldwin explains. “The information gives us population structure for stock assessments. Larger fish produce more eggs, and have reproduced more because they’ve lived longer.” Over the three days, the team’s goal is to collect as much data as possible, using the long-line fishing, water-quality samples,

“roving diver” surveys that assess the fish species’ abundance, stereoscopic laser surveys to gauge size, and documenting things with video. They also remove invasive lionfish, against which the native species have no defenses. After completing the fishing, Baldwin shouts, “Let’s go diving! The water’s not going to sample itself!”

This morning, the second of our expedition, the team has been fishing off the controversial High Island-A-389A. No longer producing oil and gas, this rig has to be removed to 15 feet below the sea floor within five years or turned into an artificial reef. The wrinkle? This particular rig sits within the boundaries of the Flower Garden Banks—the vibrant

56-square-mile area about 100 miles south of the Texas-Louisiana border that was designated a National Marine Sanctuary a dozen years after the rig was erected. Removal would be a massive undertaking, and one that would doom the surrounding sea life, but there’s no protocol for leaving the rig as is. The existence of the Artificial Reef Program has helped federal officials reach a compromise: The portion above the water and 65 feet below the surface will be removed, but the rest will stay. That work will likely be done later this year. For now, the rig is diving heaven.

Before we jump in, we check the oxygen-enriched blend of air in our tanks that lets us stay down longer.

JAMES STURZ



Tommy cod and blue angelfish (partially hidden)

FISHING THE RIGS

Texas' decommissioned oil rigs are ideal spots for sportfishing. In addition to red snapper, the rigs' reefs are home to kingfish, sailfish, amberjack, grouper, black drum, wahoo, ling, tuna, barracuda, tarpon, and bonito. A fishing license is required for all anglers age 17 and older. You will need a saltwater or all-water endorsement for your license to be valid in the Gulf.

Four fishing charters that visit the rigs:

RIG RUNNERS FISHING CHARTERS runs a 32-foot center console and 35-foot sportfishing boat out of Freeport and Galveston, with half-day and full-day options. Trips are priced per outing, so it's the same whether you're one person or six—as good an excuse as any to organize a small fishing party. rigrunnersfishing.com.

FIN TASTIC COASTAL CHARTERS runs the 24-foot center console *Catz Meow* on Matagorda Bay, which is particularly productive for speckled trout and redfish. fishfcc.com.

OSPREY CRUISES sails the 70-foot wheelchair-accessible *Osprey II* up to 100 miles from its base in South Padre Island. The 150 feet of rail space means there's plenty of room to cast and reel. A fleet of smaller vessels, as well as a 75-foot pirate ship, is available for private charters. ospreycruises.com.

DOLPHIN DOCK runs the 80-foot *Dolphin* out of Port Aransas, for fishing trips lasting anywhere from 5 to 80 hours. A larger and newer 95-foot *Dolphin Express* is available for single-day trips, as well as for private charters. dolphindocks.com.



High Island-A-389A, a defunct Gulf rig and a favorite spot to dive

Because oxygen itself becomes toxic at depth, we have to be careful. I descend alongside J. Dale Shively, the Artificial Reef Program leader, and the reef appears as soon as we hit the water.

The transformation of the massive hard-edged structure into an aquatic forest—an Atlantis or Eden—is fascinating. After 36 years in the water, the beams and stanchions are covered in wide swaths of coral. Big-eye jacks and barracudas swim by, while fireworms slither along the pipes, turning as bright as golden sapphires in the beam of my underwater light. We drop deeper, past 100 feet, and the rig is engulfed by a maddened throng of angelfish. And yet I realize I'm still far closer to the rig's top than the bottom.

There's a world below me, farther than I can see, and I'm meeting only the emissaries, the outliers.

I'm so distracted by the life around me that while I model for Texas Parks and Wildlife's TV producer, who's shooting footage for a weekly PBS show, I swim headfirst into one of the beams—a blunder I hope he'll edit out. As I ascend, 50 hammerhead sharks pass alongside the rig—the first time I've seen hammerheads in open water in 30 years of diving. I watch in awe.

These rigs are important, Shively tells me afterward, because they create a complex marine environment. In this case, sea life is supported along the rig's entire 410 vertical feet. "We've

learned that these platforms function as their own ecosystems,” Shively says. “Estimates show there’s up to 10 times the amount of life on artificial structures in the Gulf than on the natural ones. We’re bringing life up the water column.”

Abundant marine life doesn’t benefit just the organisms themselves. Texas Parks and Wildlife’s mission is to conserve the state’s natural and cultural resources for the benefit of everyone—including anglers. The American Sportfishing Association estimates that Texas is home to some 2.25 million sport fishermen who account for more than \$2 million in retail sales each year and more than 30 million total fishing days.

One challenge the Gulf faces is an annual “dead zone” roughly the size of Connecticut, principally caused by agricultural runoff and inadequate wastewater treatment. But another problem has been spills. When Deepwater Horizon blew in 2010, scientists didn’t have enough background information about the Gulf’s marine life to calculate the real loss, Shively says, “so we’re trying to get basic biological data on these trips on as many reef structures as we can so we have somewhere to start from.”

For now, the team is concentrating on the same five reef sites to create a long-term database. Thanks to the likes of a sonde—a 2.5-foot tubular device that looks as if it might have detached from a lunar module—divers can collect data to help determine correlations between water quality and the health and sizes of fish.

At the end of each day, back on the boat, the divers busily complete their surveys, and I work on mine, which is admittedly about them. As TV monitors alternate between *Game of Thrones* and *Robin Hood: Men in Tights*, and fish and crustacean ID books circulate among several tables, we sip iced tea and munch on pulled-pork sandwiches and lasagna, as well as the cookies and ice cream that emerge late at night. The views aren’t bad. Off the boat’s starboard side one evening, I spot flying

fish hurtling into the air—and barracuda leaping to grab them.

SUNKEN TREASURE

Our final dive is on the *Kraken*, one of 25 local Ships-to-Reefs wrecks (a sister program of Rigs-to-Reefs). Almost half the \$3.6 million required to sink the 371-foot cargo vessel came from the Deepwater Horizon oil spill settlement, which is also funding construction and placement of 2,400 concrete pyramids in two shallow near-shore sites. Before the ship went down in January 2017, the area was practically devoid of life, Shively says, but within seven months, nearly 30 fish species were sighted. The Texas Parks divers tell me the ship looks different each time they visit. Diving here is like witnessing an ecosystem being born, so everyone’s excited as we gear up.

Swimming above, I peer into her wheelhouse at 75 feet, with a rabble of Atlantic spadefish looking on. A pair of arrow crabs sits on a compass, and then I realize more are scurrying around me in all directions. A school of rainbow runners pass, and I swim inside. The deck is already encrusted with mollusks, like a shimmering carpet. She’s gone from cargo ship to useless hull to sunken wreck and now to a pearl-carpeted yacht.

This, in other words, is the aquatic answer to *Field of Dreams*: Sink it, and they will come. As we lose habitats around the world, it’s heartening to know we also have the potential to create them. Motoring back to shore, the divers are tired but gratified. There’s even a moment to stretch out on the deck and take in the last sunset. “We’re making reefs,” Baldwin marvels. It’s a sea change as profound as going from nothing to everything—and one in which these divers play a pivotal part.

James Sturz is based in New York and Hawaii, and has written about the underwater world for the Wall Street Journal, the New York Times, Outside, Men’s Journal, Scuba Diving, and The Atlantic.

DIVING THE RIGS



CHRIS LEDFORD/TPWD ARTIFICIAL REEF PROGRAM

From Arrow
invasi
long s
urchin

You can't join Texas Parks and Wildlife on its monitoring trips, but you can dive the same sites and others with the help of a dozen dive outfits along the coast.

Here are four operators worth checking out:

FLING CHARTERS runs multiday dive trips out of Freeport on the 100-foot M/V *Fling* to the Flower Garden Banks National Marine Sanctuary and the rigs and wrecks in this article. Says Captain John Bland Ellen, "I was born in South Texas, and my perception was that the Gulf was like the coast of Galveston, muddy and brown. But I woke up on the reef, in the Flower Gardens, and it was warm and crystal clear, so I went from refusing to go to living out here." flingcharters.com.

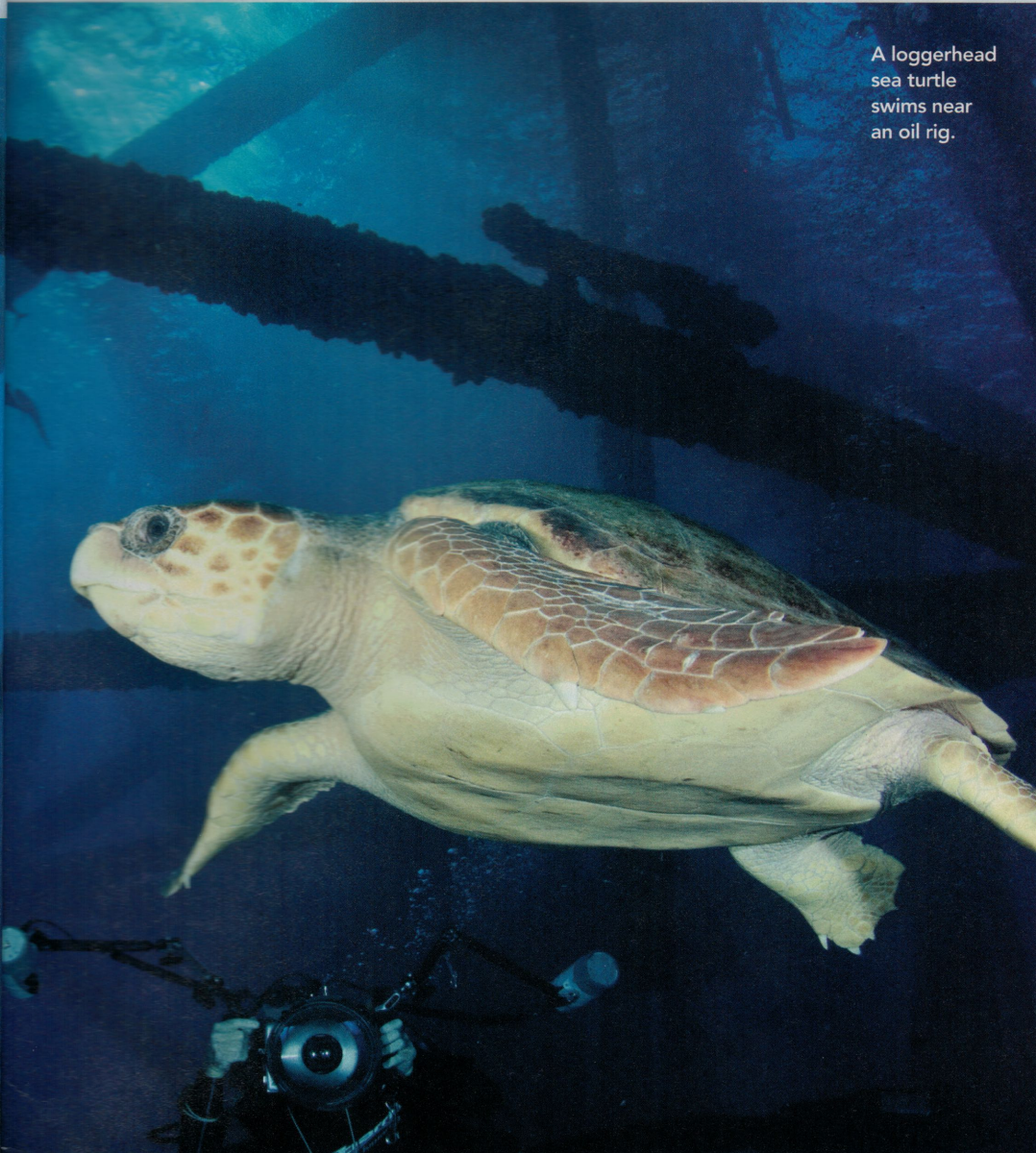
and it was warm and crystal clear, so I went from refusing to go to living out here." flingcharters.com.

ULTRA DIVE runs weekend day trips from Freeport or Galveston to wrecks and rigs on a sportfishing yacht, with a full-size bathroom and a maximum of six divers onboard. Fishing charters are available as well. ultradive.com.

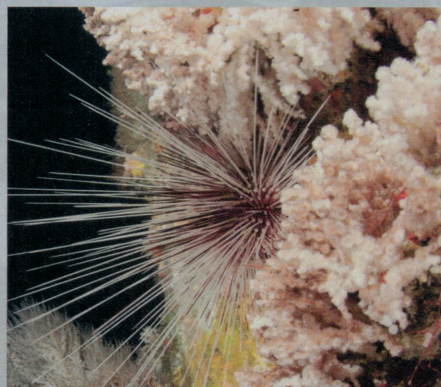
COPELAND'S in Corpus Christi says it's the oldest dive shop in Texas (founded in 1957). It organizes jetty diving trips in Port Aransas and the Packery Channel, as well as to area rigs. copelanddiveski.com.

AMERICAN DIVING in South Padre Island runs scuba trips on its 60-foot *Diver I* to nearby rigs and wrecks, including the 473-foot *Texas Clipper*, the largest ship sunk as an artificial reef outside of Florida. The company also offers shallow-water snorkeling trips in the Laguna Madre Estuary. divesouthpadre.com.

A loggerhead sea turtle swims near an oil rig.



From left: Arrowhead crab, invasive lionfish, long spine urchin



Open Water certification is required for scuba diving in the Gulf. Additional certification to breathe oxygen-enriched air, or nitrox, is recommended. Underwater temperatures range from the high-50s to mid-70s in winter, and from the low-70s to high-80s in summer.