

Background: Parched Amargosa Desert. Above: Dr. James Deacon ready to dive in Devil's Hole. Below: these pupfish are found nowhere else in the world. Left: the area has other springs.



DEVIL'S HOLE

The Tiny Pupfish Is Under The Gun Again In The Desert War For Water

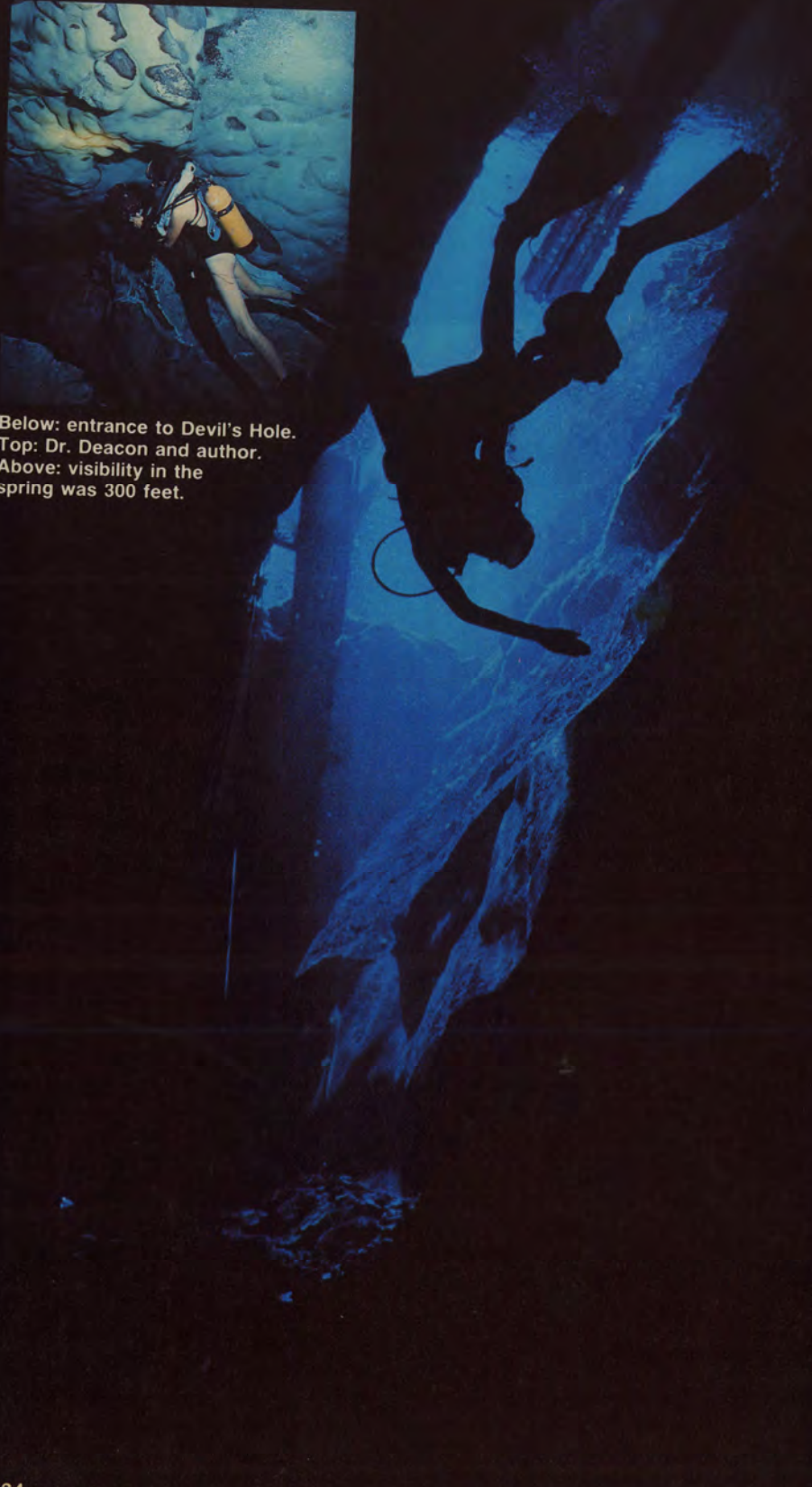
By Hillary Hauser

"Beware of wild dogs and buckshot!" I looked at the sign and then I looked at my friend Jack McKenney. This decision was going to be up to him. Out in a remote corner of the Amargosa Desert of Nevada one didn't just drive into a place that had a sign like that without giving it a little thought. On the other hand we were lost, had been driving around on hot, dusty, bumpy roads for over an hour, and it was almost dark. This was the first hint of civilization we had seen in awhile.

I was beginning to feel a little depressed. We had tried for weeks to get permission to dive and photograph Devil's Hole, an enormous, water-filled underground cave that is part of the Death Valley National Monument. The restrictions were severe for two reasons: One, a number of divers had died in the hole, and two, the cave was the only home in the world for the endangered Devil's Hole pupfish. Just as the snail darter had halted the mega-million dollar construction of a dam in Tennessee, the Devil's Hole pupfish had stopped the pumping of water in the Amargosa Desert. In this atmospheric frying pan of the world, water means life, and in the heated battle of farmers vs. fish it was a choice between living crops or the survival of a species. The odd thing was that the pumping was being done some miles away from Devil's Hole yet the water level within the hole was going down little by little—enough to dry out the shallow habitat of the pupfish. Concerned natu-



photo/Jack McKenney



Below: entrance to Devil's Hole. Top: Dr. Deacon and author. Above: visibility in the spring was 300 feet.

ralists knew that if farmers kept it up, the Devil's Hole pupfish would become extinct. They took the issue to court. By 1976 the issue had progressed to the Supreme Court and, in a landmark decision which for the first time made the legal connection between surface and ground water, the fish won. The protection of the fish is now a matter taken very seriously by the National Park Service, guardians of the pupfish. No one is allowed in Devil's Hole, period.

What was this mysterious water system of the desert? Underneath the hot and arid sands of Death Valley, California and the Amargosa Desert just across the border, was a volume of water rumored to equal that of the Great Lakes. Water was pushing up in springs, ponds and sink-holes and then there was this "bottomless" cavern called Devil's Hole.

Every month a scientist made a dive in Devil's Hole to count the pupfish. This scientist, Dr. James Deacon, had been a star witness in the Supreme Court trial, and when I told Deacon that I wanted to investigate the pupfish situation, the sink-holes and springs of the desert, I also told him that I wanted to see Devil's Hole. This last request was slightly reckless. No one ever got into Devil's Hole. Deacon thought about what I wanted to do, and then he said that, well, he needed a safety diver to accompany him.

I jumped at this suggestion. Immediately I called the National Park Service in Death Valley, and not so immediately I got their permission to make a dive as Deacon's safety diver. I was told that I could make one dive. Just one. I was lucky to get just one. After that, no one would get in, and even Deacon's monthly dives were being cut to two per year.

Jack and I arrived in Death Valley during one of its big heat spells and Death Valley is, in summer, the hottest place in the world. Hotter, even, than the Sahara Desert. So far, all we had managed to do was become very lost. We hadn't found any of the springs, or even Devil's Hole for that matter. If we were going to meet Jim Deacon early the next morning at Devil's Hole, we needed to find the place before dark, which was coming fast.

Jack McKenney is an old friend I'd worked with for years on various magazine projects. He does everything with a high degree of professionalism. I'd talked him into this wild goose chase in the desert, and I wondered what he was thinking as we now looked at the wild dogs and buckshot salutation.

"What the hell," said Jack. "Let's give it a try."

I was relieved to hear it. Jack's sense of adventure was far from dead. We drove past the sign into a fenced area toward a tin shack set in the middle of a large collection of rusted bedsprings, old appliances, benches, kitchen sinks, ma-

DEVIL'S HOLE PUPFISH

chinery, and other odds and ends. The only thing missing from this permanent swap meet was a rusted-out car.

Immediately two big dogs came running at the car, barking and snarling, one at each door. "Nice doggy," said Jack. On top of his sense of adventure Jack was displaying an enormous amount of optimism, and I really liked him right then.

A man emerged from the tin house—without a gun. He was youthful in his baseball cap and didn't seem belligerent. He called off the dogs.

"We're lost," Jack called out. "Could you tell us where Devil's Hole is?"

"Shore!" said the man. "Why don't you come in and sit a bit?"

This wasn't buckshot by any means. We proceeded to get out of our car, only to find that the wild dogs jumped up on us like big puppies.

We told him what we were doing.

"Follow me," he said.

He led us over to an area of his yard which was fenced in by the circular ends of enormous wood spools, near an arbor of grape vines. He pointed off in the distance. "See that mountain over there? The very last one of the bunch?"

We said that we did.

"See that dark spot . . . near the base of it?"

We made out the dark spot.

"That's Devil's Hole."

At 8:00 am the next morning Jack and I arrived at Devil's Hole. It looked like a prison camp sunk into one side of a volcanic mountain. Giant coils of barbed wire tangled with the metal mesh of a high, impenetrable fence to seal off the confining pit from the outside world, and at one end was a heavy gate, sealed shut with a massive chain and padlock. Just inside the gate was a steep rock cliff, bridged by a wooden ladder propped against its uppermost ledge. A rock slope descended the rest of the way to the bottom of the cavern, where a rectangular trough of water emerged from underneath the mountain. That trough was "bottomless," a flooded earthquake fault.

At 8:30 Jim Deacon arrived. So did Pete Sanchez from the National Park Service, Bob Yoder from the U.S. Fish and Wildlife Service, and there was also a representative from the Bureau of Land Management. It was all serious business.

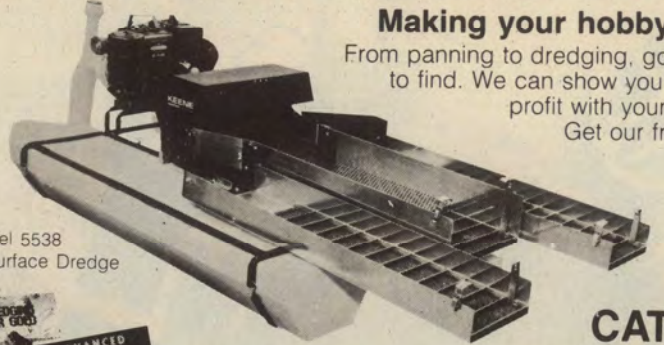
Jim Deacon prepared for the morning dive. He laid down a narrow bridge of boards over the shallow shelf of bright green algae where the pupfish lived and then we geared up. There would be three of us on the dive—Jim, myself and a Park Service safety diver named Bob Todd. As I tight-roped across the narrow boards in my heavy dive gear I looked down at the tiny fishes, each one of them no bigger

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than a minnow. They swam leisurely around their shelf, picking at algae, oblivious to the human *sturm und drang* above them. They didn't know about the badges or the barbed wire, and most likely they were even oblivious to the fact that there were so few of their numbers left in the world. They were tiny little fishes under enormous lock and key.

I carefully put one foot on the very edge of the shelf and lowered myself backward into the drop-off of clear, blue water. As I waited for the others, I looked down and could see the first ledge below me at about 30 feet. The water was a warm 92°F, which was like swimming in nothing, and it was so clear that visibility might have been 300 feet. It was like soaring in air, the closest thing to flying I'd ever known.

As the three of us sank down through that giant, water-filled crack in the earth, I almost forgot about the others. The sides of the main shaft were of white limestone—limestone that had been laid down 550 million years ago and which had been chiseled over the years by water into smooth slopes on either side. Rusty colored organic material on top of elevated ridges of stone created an ethereal effect.

At 60 feet I turned and looked up toward the surface. The bright blue of shallow water illuminated down through the main shaft and silhouetted the configurations of the sloping wall on the right side. From where I was I could see people standing around on the rocks above, almost as clearly as if there were no water between them and me. Just as distinct was the long, rectangular lamp which hung over the water, a lamp which was positioned over the pupfish shelf and turned on when algae production needed a boost. Another shaft of light beamed down from the back of the main entrance at the surface, behind a rock. The slope of limestone leading to it created a narrow ledge against the ceiling of the cave.

I turned again toward the bottom and the three of us turned on our lights. We sank to 90 feet where an enormous flat stone, appropriately named Anvil Rock, signaled the deepest part of our dive. This stone, obviously shaken loose from above, marked the deepest spot where the pupfish wander from their shallow shelf. Jim started counting at this point.

Later, over a lunch of pizza and beer at a mid-desert saloon near the California/Nevada border, Jim told us that the pupfish had been stranded in Devil's Hole 20,000 years before when the fresh water system of the desert began to dry up and recede. Because Devil's Hole was one of the habitats higher up, they were the first to be stranded, the first of the desert pupfishes to begin evolution into its own, distinct species.

All pupfish species have tolerated periodic difficult living conditions, usually associated with summer heat. When the sun is hot their habitats dry up, and some

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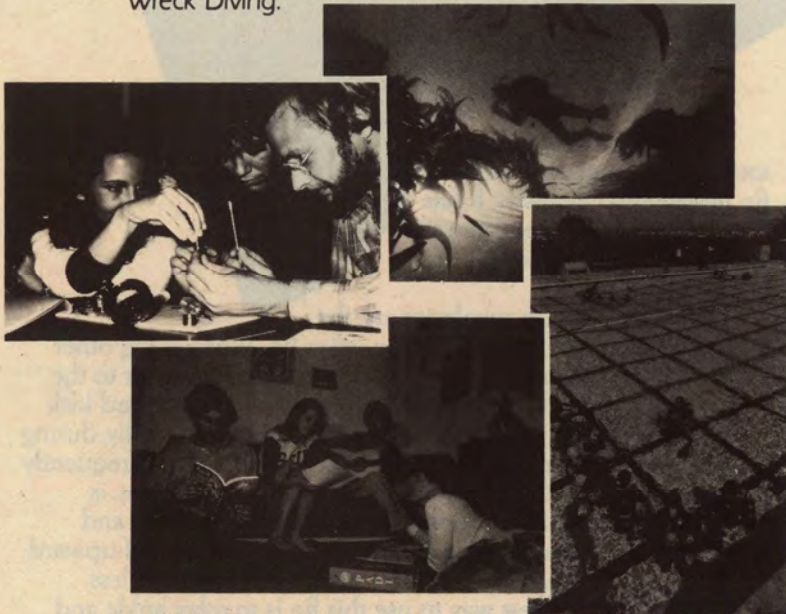
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DEVIL'S HOLE PUPFISH

pupfish survive parched summers in homes the size of a teacup. Salinity levels increase, and the desert pupfish is the only fish in the world that can tolerate such concentrations of salt. The fish also withstand the freezing temperatures of winter and a host of other difficulties which include aggressive non-native species of fish and crayfish which fight the pupfish for food and territory.

The irony is that the adaptable little fish may not be able to withstand what human beings do to it, and that is why there is yet another battle brewing in Ash Meadows over water rights. The pupfish is presently threatened by a land development scheme which would turn 13,000 acres of Ash Meadows into a recreational/housing development with perhaps a few golf courses thrown in. Again, a war for water. Again, the Devil's Hole pupfish is under the gun.

U.S. Senator Alan Cranston has introduced, for the sixth time, a bill which would create a national wildlife refuge in and around Ash Meadows. This move would not only protect the Devil's Hole pupfish, but a number of other endangered plants and animals as well, animals that exist nowhere else in the world. The bill has needed public support to get to hearing, and at the point we were sitting around the mid-desert saloon things did not look all that cheery. The 250 surviving pupfish of Devil's Hole could lose their final war for water.

It was Rex Schneehagen's 82 year old father who summed up the whole subject for us. Frank Schneehagen was alone at the tin house with the wild dogs when we went back for a visit because Rex was off attending to his firefighting duties in Las Vegas. Frank has owned that particular piece of land since the 1940's, loved it and understood it well. He laughed at our gallons of Gatorade, sodas and bottled water. He led us over to a spring which bubbled up slowly in a corner of his property at the rate of 12 gallons per minute, then spoke of his spring with affection. It had fed his trees and the trees had lowered the desert heat around his house by a good 20°F. The water fed his grapevines, his vegetables, his horses, his peacocks and him. He took two tin cans that hung upside down on sticks and dipped them into the spring. He gave one can to me, took one for himself, and toasted. His salutation was the last word in what water means to the desert, what it means to a group of unique animals that are struggling for survival in Ash Meadows, what it means to the pupfish of Devil's Hole.

"Drink this," said Frank Schneehagen, holding up his tin can of water. "You do, and you'll never die." 