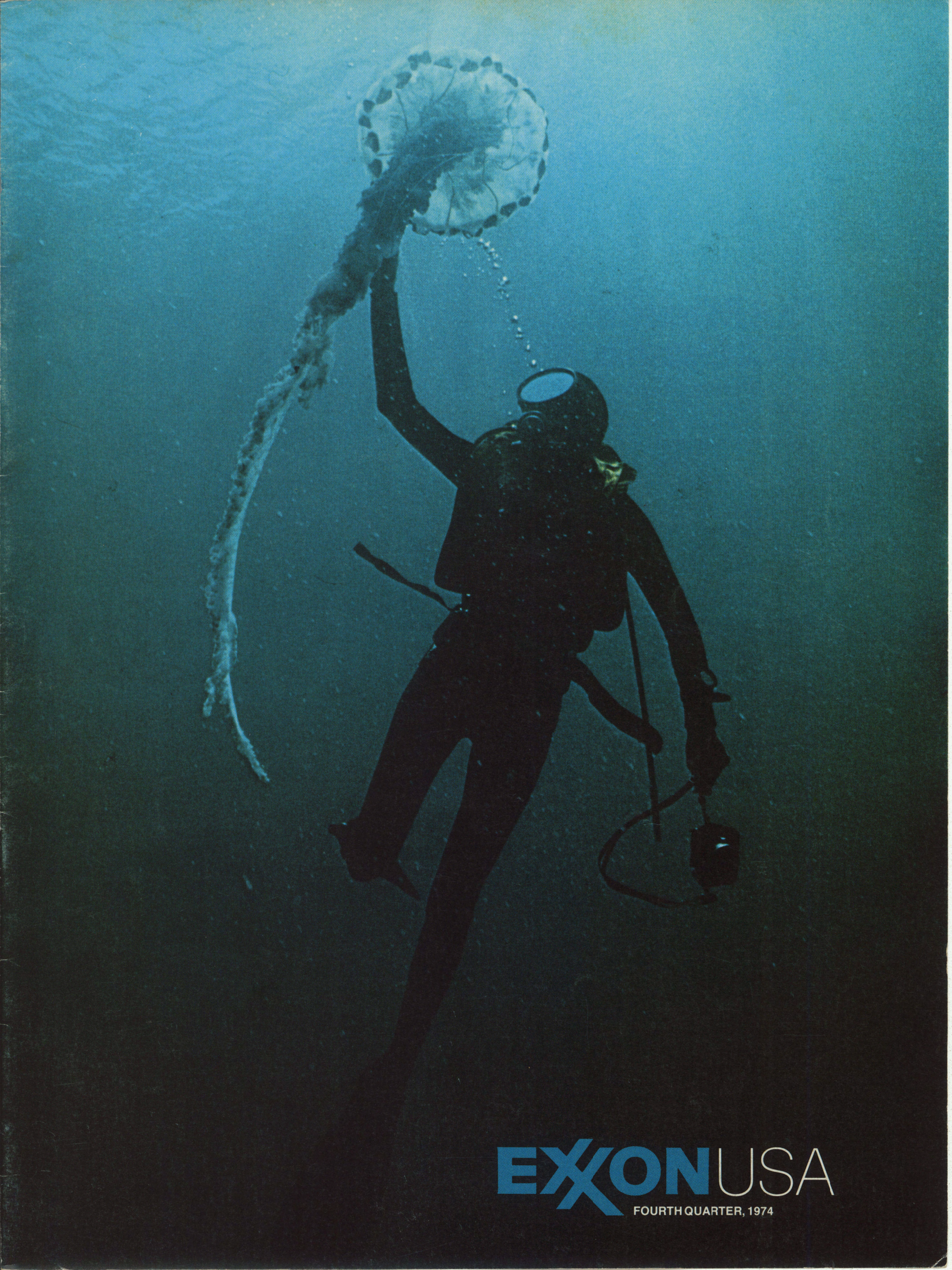
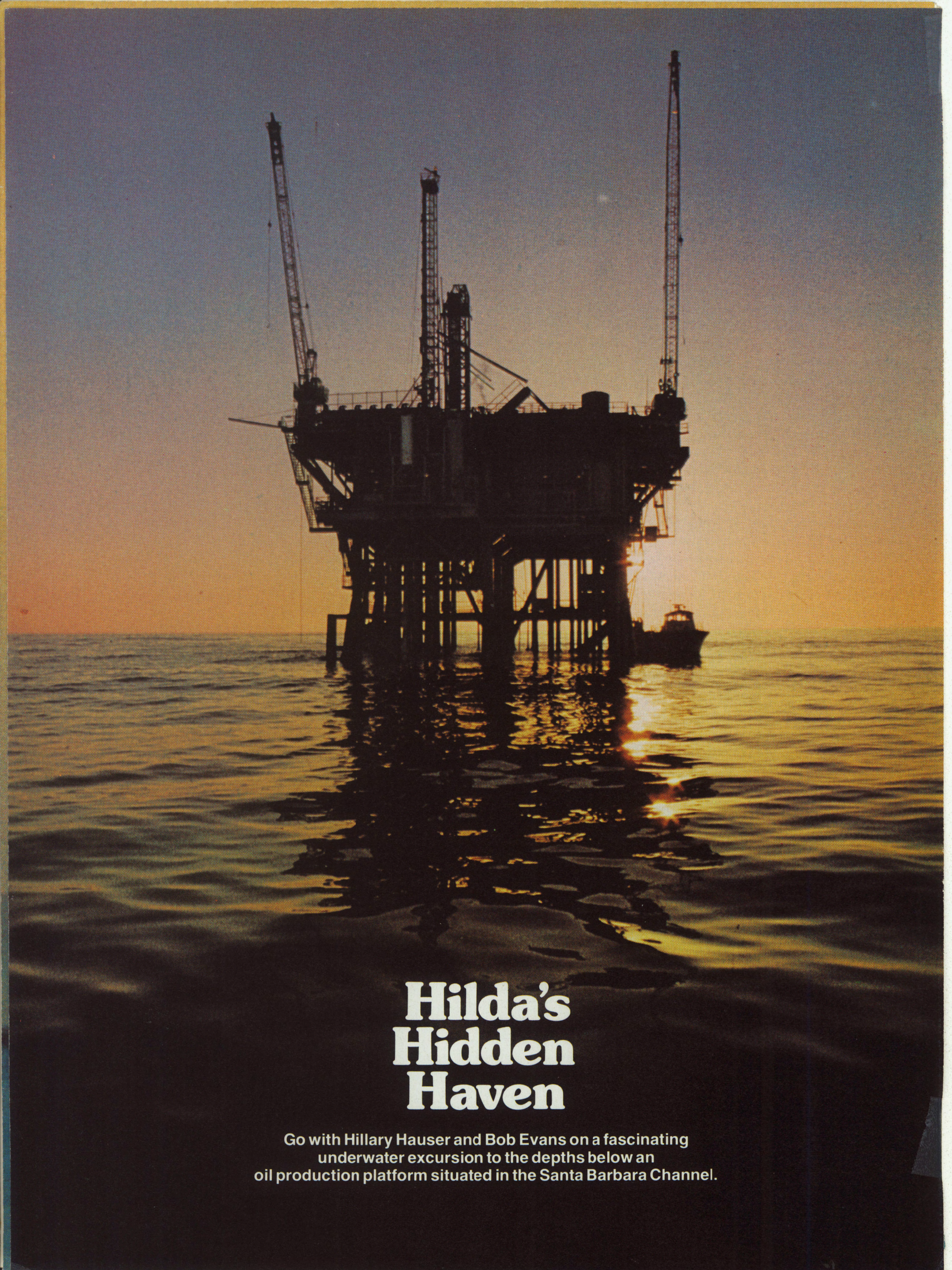


EXXON USA

FOURTH QUARTER, 1974



Hilda's Hidden Haven

Go with Hillary Hauser and Bob Evans on a fascinating underwater excursion to the depths below an oil production platform situated in the Santa Barbara Channel.

HILDA IS A LARGE, grey lady whose concrete and steel legs stand firmly on the bottom of the Pacific Ocean. Her home is about two miles out to sea in the Santa Barbara Channel, in 106 feet of water. Here, Hilda works as an oil production platform, producing oil and gas from the Summerland field for Exxon Company, U.S.A. and Standard Oil Company of California. She's been on the job for 15 years, and has never missed a day's work.

Of course, Hilda doesn't get around much. She never goes visiting. But as photographer Bob Evans and I discovered, she never lacks for company. Hilda's protective bulk and her structural underpinnings house an unseen world of marine life as rich in numbers and variety as any tropical reef. Desending in scuba gear into Hilda's waters we found ourselves completely taken with the sea creatures living there in happy harmony with their environment. In spite of her remoteness, Hilda is hostess to a bewildering variety of house guests.

Among her constant companions were barnacles, which clustered in dense colonies along her underwater surfaces. We watched one perform a miniature subsea fan dance. A red, feather-like feeler would twist out of the small opening at the top of its tiny, volcano-shaped shell. It would wave its fan, combing the water for food. At the base of the feeler was an orange, eye-like orifice into which it would tuck diatoms snagged by its tentacles. It was a lively act, and I was amazed at how different this animal seemed from the motionless barnacles I had so often seen in tidepools.

In company with the barnacles, mussels clustered in vigorous colonies on Hilda's legs. Every beachcomber has seen mussels, but few have seen them in action as we did. As Bob was preparing to photograph the familiar black mollusk, a member of the colony released a stream of milk fluid that spread quickly among the other shellfish. It was the first step in mussel reproduction. These animals release sperm and eggs directly into the water where the two unite. The fertilized egg settles to the bottom, or substrate, where it begins the business of growing a shell. We were actually witnessing life in the making! But Hilda had other surprises in store for us.

As we descended further along the legs, I thought about the diversity of life that had become dependent upon Hilda's presence. This sort of thing is not normally associated with oil production or offshore drilling; yet, here, beneath an oil production platform, was a hidden haven for plants and animals. In all my years of diving in Southern California waters, I had never seen such a concentration of fishes. There were thousands! The sea perches were the most numerous – white sea perch, black sea perch, rubberlip sea

Platform Hilda produces oil and gas from the Summerland field in the Santa Barbara Channel.

Resting on one of Hilda's crossmembers, Hillary Hauser watches swarms of fish attracted to this artificial reef.





Author Hauser peers into the inner workings of a transparent comb jelly.

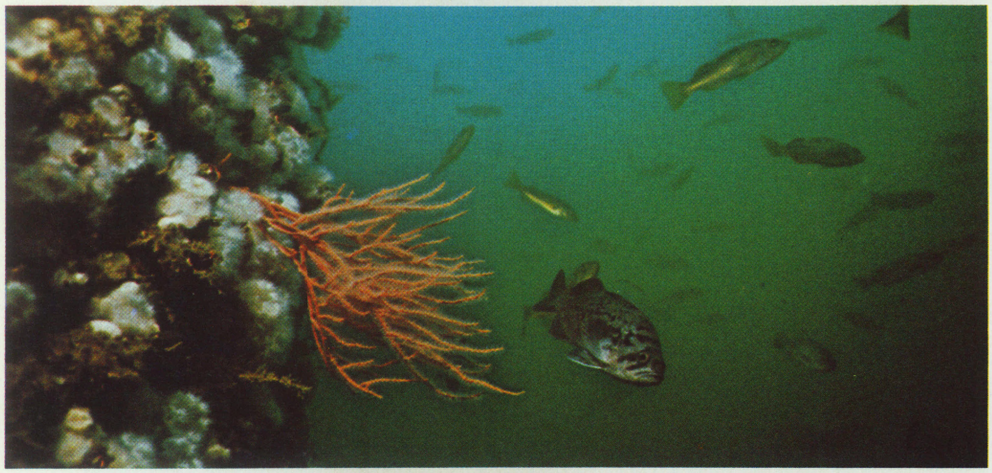
About The Author And Photographer

Hillary Hauser is a freelance writer specializing in ocean affairs who makes her home in Los Angeles. She has served as West Coast editor for *Ocean Science News* and is currently a contributing editor to *Skin Diver Magazine*. At present she is working on a book on California's Channel Islands with photographer Bob Evans.

Bob Evans is a freelance photographer whose favorite subject is marine wildlife. He has developed special skills in underwater photography, and his pictures of reef creatures, marine mammals, and Pacific tidepool life have appeared in several national magazines, including *Exxon USA*. Evans makes his home in Santa Barbara, California.



One of the many varieties of anemones, this specimen was photographed at a depth of 40 feet.



A sea fan reaches out to sift food from the current, as scores of rockfish swim by.



A convict fish, so named because of his stripes, rests among mussels and soft corals.

perch, pile perch – all were there. They swam in and out of Hilda's stanchions and cross-members, nibbling on mussels, scallops, and hydrozoans. Rockfish were right behind the perches in numbers, but they stayed closer to the substrate. Spiny, frog-like sculpins sat motionless on the outgrowths of shells and soft corals. When we came too near, they darted for cover. Huge sea bass and calico bass cruised lazily around Hilda's sheltering legs, eyeing us carefully, but they were not too worried about our presence. Here, a juvenile cabezon hid against a starfish as we swam by. There, a huge treefish remained motionless in the angle of two crossmembers, zipping away as we approached. And there were more – many species that we couldn't even identify.

We found that the most life was in the 30 to 40-foot depth. Within this range the anemones, starfish, sponges, and soft corals seemed to concentrate, and these were outnumbered only by the barnacles and mussels. Most of the fish grazed here, too. Away from the platform, schools of pelagic mackerel swam in coordinated unison, imparting a sense of terriffic activity to the motionless structure.

Altogether, Hilda was one bustling community! On every surface life blossomed. We could not put our hands anywhere on the pilings or stanchions without squashing a living, breathing thing. The huge concentrations of club anemones astounded us. These animals had grown and spread over almost every inch of surface not occupied by the mollusks. They bedecked Hilda in a riotous rainbow of reds, oranges, pinks, and magentas. Here and there, big colonies of white anemones protruded from pilings on their elongated columns, punctuating the underseascape. The fact that Hilda was in the oil business didn't seem to bother the animals in the least. Indeed, without Hilda they wouldn't have been there at all.

It has been observed that any foreign object placed in the sea will attract marine life and that fish and invertebrates immediately colonize anything that offers shelter or a surface to cling to. Divers have known for some time that open ocean bottoms are veritable subsea deserts devoid of fish. But the presence of any object – a sunken ship, a wrecked airplane – immediately attracts life. Subsea plant life begins to grow immediately on the foreign objects, and the little organisms that require protection or a solid surface on

which to attach themselves quickly colonize the spot. They are followed by larger creatures that feed upon the existing life. Finally, the predatory pelagic fishes come around to prey upon the smaller animals.

In recent decades, this knowledge stimulated a flurry of artificial reef building. In 1958, a biologist with the California Department of Fish and Game began building reefs in the Pacific Ocean, using a variety of bulky objects: worn-out streetcars, junked automobiles, quarry rocks, and concrete "fish apartments." He found that all the objects attracted fish and developed into bustling reef communities. In 1960, Floridians built a reef out of junked cars and 5,000 old rubber tires that were placed on the ocean floor five miles off the Northeast Florida shore. The reef still provides good fishing, even though metallic objects have long since deteriorated. In 1961, the Tidewater Artificial Reef Development Association sank a load of car bodies in 15 feet of water in Chesapeake Bay. Where before the area had been almost devoid of life, it was soon swarming with flounder, sea bass, blennies, hogfish, sheepshead, chubs, and other species.

Offshore oil platforms function as artificial reefs, as fishermen well know. In the Gulf of Mexico, commercial fishermen and charterboat operators visit the numerous platforms as the best guarantee of a catch.

Skeptics have decried artificial reef building as nothing but a license to dump trash in the ocean. But the fact remains that fish need a haven in order to thrive, and that whole new communities of fish and invertebrates spring up whenever the proper shelter is provided.

Platform Hilda is a good example. Little life could be found in her open ocean environment before she was set in position in 1959. Yet in her first month a Department of Fish and Game study found that hydrozoans had already begun to grow. In the second month, schools of sardines, mackerel, and bonito had moved in. Simultaneously kelp scallops, barnacles, and mussels began scrambling for space on the pilings. Not long after, nudibranchs were depositing their egg masses by the thousands and establishing their dense, phosphorescent colonies.

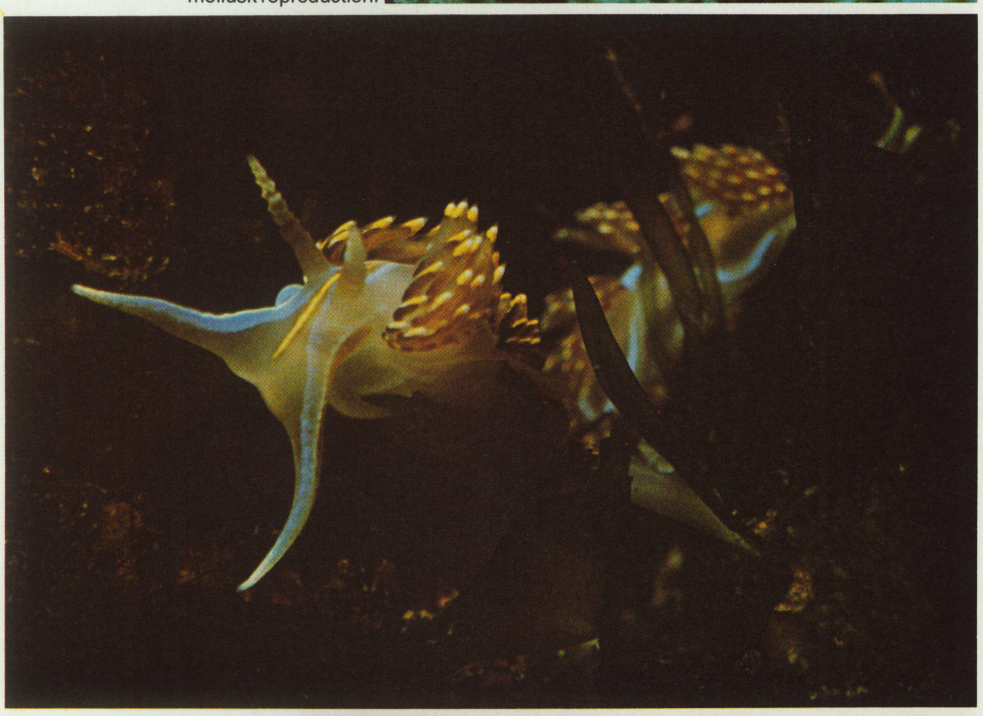
Where do they come from? How do sessile creatures – those that attach themselves permanently to some sur-



Surrounded by strawberry anemones, a barnacle waves its fan-like feelers.



A mussel releases a cloud of seed in the first step of mollusk reproduction.



Graceful, flower-like nudibranchs by the thousands have colonized the pilings of Platform Hilda.



In kaleidoscopic colors, sea urchins, mussels, and club anemones cluster on a pipe surface.

face – find their way to Hilda? As Shane Anderson of Western Marine Lab in Santa Barbara points out, "The rig is in deep water and pretty far from any established communities of marine life. It is unlikely that any organism crawled across the bottom and up the piling." Anderson speculates that most, perhaps all, sessile organisms arrive as larval forms, drifting in upper water layers of ocean currents amid plankton. Once contacting the piling surfaces, the larvae establish themselves and begin to grow into their mature forms. It is not a matter of simply moving a viable marine population from one spot to another. Larval forms drifting in the ocean will die eventually if they cannot attach themselves to a solid substrate where they can grow. For them, Hilda's presence, along with her cousins in the channel, Hope, Heidi, and Hazel, means life itself. The recent demise of Harry, another Santa Barbara cousin removed by his owners from the channel when his wells could no longer pay the rent, left homeless countless organisms.

As I continued to explore Hilda's watery haven, Bob was focusing on some strawberry anemones which bloomed in vibrant red patches everywhere on the pilings. About 10 feet away five giant ocean sunfish (mola molas) were hanging suspended in liquid space, their big eyes watching every move I made. These pelagic fish are disc-shaped, looking as if they had been born without tails. "Mola" means millwheel, and the fish was obviously named for its resemblance to a circular millstone. Mola molas are frequently seen by boaters in the Santa Barbara Channel as they sun themselves on the surface. But often all a boater can see of the mola mola is the sudden splash it makes when it dives for safety. It is certainly not often that a human gets a chance to see one of these fish underwater. They are shy and flee at the slightest hint of danger.

I waved frantically at Bob, and when I had his attention, I turned and began swimming toward the strange fishes. They didn't move. I held my breath so that the noisy bubbles from the regulator would not scare them, and was soon in their midst. I extended my hand to one, and was totally surprised when it moved toward me. I stroked its side, which it seemed to enjoy. For a full minute, we played a massaging game. For me, it was man and wild animal establishing communciation on a fundamental level.

The mola molas drifted off, and Bob and I turned back to the platform structure. We saw a giant jellyfish, gracefully but ineffectively propelling itself through the water by contracting and relaxing its huge bell. Suspended in the water close to the jellyfish was a comb jelly, a seemingly fragile blob so transparent that you can see its inner organs working away inside. I poked around at this strange creature a bit, investigated its interior machinery, and turned to find Bob. He was homing in on something and I swam in closer to see what it was. Before us was the largest gathering of nudibranchs either one of us had ever seen. These tiny,



Perch, rockfish, and other varieties by the hundred throng beneath Hilda's protective structure.

flower-like animals are well known to California divers for their graceful, undulating movements. They come in many colors of such intensity that they seem to glow in the dark. The nudibranchs we were looking at had white bodies, their gills trimmed in iridescent blue and gold. They were bright, beautiful subjects for Bob's camera.

As we boarded our boat and headed back to Santa Barbara, Bob and I reflected on the things we had seen and the excitement we had felt beneath platform Hilda. We looked behind us at this solid, steel lady who hummed with activity – machines churning above the water, fish scurrying about below. I thought about the mola mola that had become my friend, and I contemplated Hilda herself. Indeed, she was a living example of a harmonious partnership between industry and nature.

HILLARY HAUSER



A feather-duster worm spreads its plumes amid a colony of strawberry anemones.