Monterey Bay's
Marine Mammals

What does the future hold?

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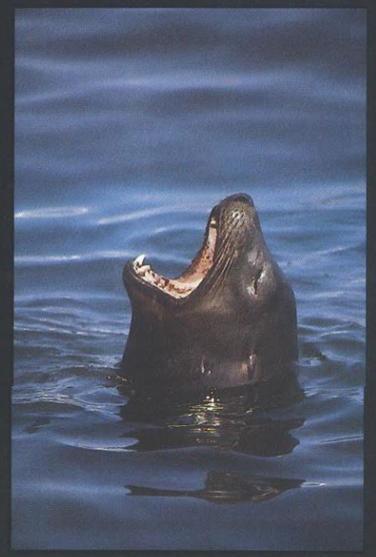

PRECEDING PAGE: Bull Elephant seals engaged in battle.
ABOVE: Young Elephant Seal
RIGHT: California Sea Lion
CENTER: Sea mammals to the maximum
FAR RIGHT: Monterey Bay Sea Otter

Off the wharf in Monterey a group of out-of-state tourists watch with fascination as a young sea otter repeatedly dives, retrieves discarded coke and beer cans, tears them open, and gobbles down small octopi hiding inside. Later, the otter emerges floating on his back with a rock balanced on his chest. While gripping a mussel in his front paws, he beats it against his chest-held anvil until the shell shatters, allowing him to slurp out its meaty contents. As the cameras click away, one tourist exclaims, "I knew otters were one of the few animals that used tools, but I didn't know they were clever enough to find a meal in a coke can."

Up the coast, twenty miles north of Santa Cruz at Ano Nuevo, two sixteen-foot, 6,000-pound bull elephant seals are about to do their thing for thirty fourth-graders from Oakland, who stand with a Park Service docent on a dune overlooking the activities. These inner-city

kids are about to see an uncompromising, primeval struggle that will undoubtedly become etched in their memories for the rest of their lives.

Below them on the beach, two huge bull elephant seals stand chest to chest amidst a carping mass of cows and pups. They seem to stretch skyward to show who's tallest. They cock their heads to one side and threaten

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each other with low hoarse croaking sounds. Their flaccid noses dangle down, giving them the vague appearance of two turkey toms with full wattles, but no beaks. With their open mouths croaking belligerance and showing inch-long teeth, they push and sway. They strike each other fast and hard, delivering twisting bites that rip at each other's flesh. Each bull's chest and neck is covered with a thick shield of callous material; deep wounds come from blows that hit an unprotected fleshy area.

The fight wears on. The intruding bull delivers more solid blows than the harem's defending patriarch, who seems near exhaustion, lunging erratically. If it were a boxing match the challenger would win, but among elephant seals there's no rule other than holding one's ground. In a desperation lunge the defender clamps down on the challenger's nose. The challenger bellows, lunges, and struggles, and finally pulls his shredded nose free and heads for the water. But the defender doesn't allow a dignified retreat. He pursues, biting down and lacerating his opponent's back. With his pathetically bloody, shredded nose, the loser must turn and continue to fight while he backs into the sea.

The school children stand goggle-eyed, mouths agape. "Boy those animals don't mess around," one mutters to his friend. The docent tries to reassure the group. "Don't worry, chances are the loser will show up at Bachelor Beach to rest and heal before fighting again, that is, if a great white shark isn't attracted to his blood."

Maybe not in numbers, but in variety, the ocean and shores along the Central Coast, contain as rich an assortment of fur bearing mammals as can be found anywhere on earth. When all their uniquely crafted paws and flippers are added up, it comes to seven different species; six pinnipeds and the sea otter. Pinnipeds—carnivorous sea-going mammals whose flipper-like limbs propel them gracefully through the water while rendering them comically clumsy on land—are more commonly known as seals and sea lions.

As a group, they've spent most of this century replenishing their numbers after a century of near annihilation from intensive hunting. Although the future looks much brighter for most species, there are concerns. The California sea lion has had a high rate of premature births in recent years and the immense Stellar sea lion has all but vanished from Monterey Bay. In addition, the much celebrated sea otter, whose population had grown five percent annually through the 1960s and early 70s, has mysteriously plateaued at about 1,400 animals for about a decade.

As trainable as a dog, the California sea lion is probably the most noticed in terms of numbers and noise, followed by the shy, spotted harbor seal who often shares rocky outcroppings with them. Of course there's the northern elephant seal whose antics at Ano Nuevo have attracted tourists form throughout the U.S. Besides the regulars, there are visitors: the Guadalupe fur seal and northern fur seal, who travel along the coast on their way to more northern and southern points around the globe.

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The most unlike duo, the sea otter and elephant seal, offer insights into moral and scientific concerns that may play into future decisions for many of these animals. Besides living in the ocean, it would seem the two species have little in common. Biologically speaking they don't, but when comparing their relationship to man they do. Both were so decimated—the otter for its fur, the elephant seal for its

blubber—that for a time they were considered extinct.

Since 1975 the sea otter population hasn't increased, even though it is now distributed from Ano Nuevo to Morro Bay. Biologists, like Jack Aimes of the California Department of Fish and Game and Glenn VanBlaricom of the U.S. Fish and Wildlife Service, have been working hard to figure out why the otter's numbers haven't increased along a coastline that supported tens of thousands of otters a century ago.

"First we looked at birth rates, but they seemed prolific," says Aimes. "We started studying mortality by studying carcasses of dead otters and looking at human activities that might adversely affect them. We found gill netting, illegal shooting, starvation during winter months, and attacks by great white sharks were accounting for a good share of the deaths. But because we must rely on collecting evidence from whatever the ocean decides to give us, this isn't a complete picture. We have to think of what we've found out so far as indicators of where we should concentrate more effort."

Biologist VanBlaricom feels that gill nets may be the primary culprit. "From what we know, it's reasonable to conclude that fifty to one hundred otters, maybe more, drown annually in gill nets." The chief proponent of sea otter rights, Monterey-based Friends of the Sea Otter, agrees with VanBlaricom and has taken up the fight in Department of Fish and Game hearings to ban gill netting in waters used by otters.

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Naturally, halibut fishermen, whose livelihood comes from fishing in shallow waters, oppose a ban. To curb shooting otters by disgruntled fishermen and others, the California Department of Fish and Game has offered a healthy reward and anonymity to anyone giving information that leads to a conviction. Because of the otter's endangered status, anyone convicted can be sentenced to prison and given a stiff fine. And, while scientists are weeding through the primary causes for a mortality rate that neutralizes a birthrate, Friends of the Sea Otter have joined with environmental groups in attempting to halt oil development in the coastal waters. In their first round, their legal efforts went all the way to the Supreme Court, where the federal government won the right to allow development. Unlike blubber coated seals, sea otters must rely entirely on their continually manicured fur to insulate them from the cold, and once their coat is covered in oil their fur loses its insulation capacity.

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The elephant seal's resurgence presents a different issue that may not come to a head for ten years. Simply put, the elephant seal has reproduced so successfully that it has begun taking to mainland beaches to escape overcrowded conditions on their traditional island rookeries. On the one hand, taking to the mainland has afforded thousands of visitors the experience of seeing these magnificent animals go through their arduous breeding and amazing three-month fasting regimen.

Luckily the first mainland areas, Ano Nuevo and Point Reyes, are in parks because there eventually will be another side to mainland use. Scientists who've studied elephant seals point out that the chief population control until this century was the limited space available to carry out breeding activities on offshore islands. The large land predators, grizzly and black bear, mountain lion, and aboriginal man kept elephant seals from using coastal beaches. Restricted to the islands, excess animals simply couldn't find a place to haul-out to participate in breeding and birthing activities. When conditions became especially crowded on the Channel Islands, Ano Nuevo and the Farallons where the seals bred and birthed, the

pup mortality was high because the crowded adults crushed each other's young in their movements. By adopting the mainland, the breeding potential of the elephant seal is unlimited. Undoubtedly, there will be conflict when they begin hauling out on populous recreational beaches, especially since elephant seals have little fear of man and don't normally leave for three months once they've arrived. However, there is a man-made Achilles heel to this scenario.

While studying the genetic make-up of elephant seals, UCSC professor Burney LeBouef made an astounding discovery. Elephant seals—all 120,000 of them—have identical genetic make-up, as if they were identical twins. There is no genetic variability. Genetic variability, which runs about ten to thirty percent in most species, provides the margin of safety that ensures a species can adapt and survive during environmental changes.

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Accompanying LeBouef's discovery is an interesting theory: During the fifteen year period when not one was sighted and perhaps no more than a dozen animals survived, they passed through a severe genetic bottleneck that was compounded by inbreeding. Apparently, variation within the species was eliminated. This raises questions about the species' ability to adapt if it is confronted with a threat—perhaps a virulent virus or a forced dietary change without the corresponding internal capacity to digest new food—or something that could spell the end for one, which in this case is all.

So in the years to come, these two species, one incredibly prolific but possibly vulnerable, the other stymied in its comeback and threatened by our activities, will test our capacity as a caretaker. How well we prioritize our values will ultimately result in the quality of existence these animals enjoy.