EYE OF THE WHALE

Also by Douglas Carlton Abrams

The Lost Diary of Don Juan

DOUGLAS CARLTON ABRAMS

EYE OF THE WHALE

A NOVEL

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For the young and all who are working to protect them—
and especially for my children, Jesse, Kayla, and Eliana

Leviathan. . . .
On earth he has no equal. . . .
Will he speak soft words unto Thee?
—Job 41

NOTE TO READERS

WHILE THIS is a work of fiction, it was inspired by humpback whales that swam up the Sacramento River in California in 1985 and in 2007. The descriptions of whale behavior and intelligence are informed by the lates research about what we can and cannot know about these giants of the deep. The discoveries about endocrine disruption and the environment revealed in the story are also based on thousands of well-documented studies. I never could have written this novel without the expertise and guidance of dozens of scientists, physicians, scholars, and journalists who have worked tirelessly to uncover the truth about what is happening to marine and terrestrial life on our planet. I have tried in some small way to thank them in the acknowledgments. You can learn about their research and the facts on which the story is based at EyeoftheWhaleNovel.com/Facts. Our understanding of this research and the story it tells about the future of life on our planet could not be more important.

EYE OF THE WHALE

PROLOGUE:
SIREN SONG

11:14 P.M.
Thursday, February 15
Near Socorro Island, Pacific coast of Mexico
18°48'N, 110°59'W
Clear night, wind SW 5 knots

APOLLO HOVERED silently as a school of hundreds of hammerheads encircled him in the rich upwelling—

His massive forty-foot body hung just below the surface, cradled by the swell of the sea—

Moonlight filtered through the shrouded water of night—

Every inch of his skin straining to hear—

Waiting—

Silence—

Only the slow throb of his giant heart—the pulse pounding in his skull—

Slowly, his tail floated up until he hung upside down—his twelve-foot pectoral fins splayed outward from his sides like a cross—

Rotating almost imperceptibly—he began to sing again—

Creaks and moans—cries and whistles—animated the water with the pulsing power of song—

The echoes cascaded back to him off the ocean floor as the sounds revealed the texture of the deep—

Then again silence—

At last—he heard two other males singing—amplifying the sound—

Then others—males and females—young and old—swam closer and closer—

THE *PACIFIC SQUALL* bobbed on top of the cresting waves, the steel hull of the research vessel vibrating from the whale song. The otherworldly music spilled out from the speakers strapped to the walls as whale biologist John Maddings accompanied on the cello. His weathered fingers pressed the strings against the neck as if taking its rhythmic pulse. The other hand lovingly rocked the delicate bow across the strings in a hypnotic melody.

With his eyes closed and his head tilted to the side in concentration, Maddings effortlessly played along with this year's song. He had begun to accompany whale song out of musical curiosity, but it had proved a powerful research method that let him enter and understand the structure in a way that his most technologically advanced spectrographic software could not. Now, six weeks into the breeding season, he knew this year's slowly evolving song practically by heart.

Maddings had studied many kinds of whales, but there was nothing like the song of the humpback. Its rhythm was scored to the rolling ocean; its haunting sounds gave voice to the abyss.

Maddings stopped playing. He quickly put the cello in its case and jumped to the computer console. His trembling fingers flicked on a desk lamp. Its bulb cast a spotlight revealing the computer console, a black synthesizer, and a photograph of a gray-haired woman in her fifties whose radiant smile made her beautiful.

Anxiously, Maddings adjusted the black knobs of the recording

equipment, unable to believe the sounds coming from the directional hydrophone. Built in to the hull of the boat, this underwater microphone picked up the sounds echoing through the sea. Maddings made sure he was recording and then grasped the black joystick. He rotated the hydrophone 360 degrees. In every direction the song was the same—in every direction the song was new.

"Switch to the sonobuoys, Old Man. Switch to the sonobuoys." Maddings barked directions to himself in what was left of his British accent after years of living abroad. The other members of the crew were all asleep or up on deck.

Maddings squeezed his eyes closed to focus his mind completely on the sounds coming in from the sonobouys. Used by the U.S. Navy to listen for enemy submarines, declassified sonobuoys now allowed marine biologists to listen for whales in vast expanses of the ocean. There was no doubt—the song was definitely diverging, shifting dramatically.

A wave of excitement flooded Maddings's body as his hands grew hot and his breath short. A voice in his head warned, *You're too old to get excited about what might just be your imagination or faulty equipment or both.* But he didn't believe this lying voice of caution.

Maddings wiped a trickle of sweat from his forehead. He hadn't felt like this in forty years, not since the day he and a colleague had discovered that the sounds made by the humpback whale were actually songs with recognizable structures. Four decades of research had documented repeatedly that the songs, sung exclusively by the males, evolved gradually over a season, even over years. New musical phrases were introduced by individual singers and gradually adopted by all males, but whole songs were not completely replaced in a night. What Maddings was hearing over the speakers was contradicting forty years of careful research.

He checked the recording levels again. The sound was getting louder as he picked up more singers. He turned the volume down to

avoid distortion; the lights flickered green and stopped erupting red. Maddings needed confirmation. He grabbed the watertight case and pulled out the sat phone. From memory he dialed the number of his closest collaborator at the Woods Hole Oceanographic Institute.

"Mike, Maddings here. Sorry to wake you. Something . . . something unprecedented is happening."

"Maddings, good to hear from you. For you to use the word 'unprecedented' must mean you're talking about a goddamn miracle."

Maddings knew that neither of them believed in miracles, but he had woken Mike in the middle of the night only once, and that call had made both of their careers. Perhaps that was why Mike was so uncharacteristically courteous even at this hour. "What is it?"

"I'm still in Socorro, recording song. There's rapid transformation. Mike, the song sung yesterday is gone. Overnight the humpback population is singing a completely new song."

"That's impossible."

"I know it is. I'm calling to find out whether you've heard about anything like this happening. I want to know if anyone else is observing it."

"Actually, there was some controversy about something similar a few days ago on WhaleNet. I invoked your research to dismiss her."

"Dismiss who?"

"That old graduate student of yours down in Bequia."

Elizabeth . . . Maddings said to himself. A smile warned his face as he began to shake his head in amazement and satisfaction. *Of course it would be Elizabeth,* he thought. *Brilliant Elizabeth.*

Elizabeth's face leaped to mind. Her unusual genetic heritage—half Jewish, half American Indian—made her beautiful face look almost Asiatic. How she ever got a good Irish name like McKay, he never knew, but the Irish did seem to get around. Elizabeth was not only arguably the most gifted graduate student he'd ever taught, she was also a marvelous violin player and had been a vital member of

his research quartet. That was until she had to follow her doctor husband across the country for his residency. It had been a great loss to the department and to him. He did become very fond of his students, which was a real liability, since they invariably left him to pursue their careers.

"Professor Maddings! Come quick!" The voice echoed down through the metal corridor from up on deck.

"I'll call you back, Mike."

Maddings felt the sharp pain in his not-so-young knees as he bounded up the stairs and practically stumbled to the gunnels, looking beyond them. If it had not been for the ache in his joints, he would have sworn that he was dreaming. To see one whale breaching was always extraordinary, but to see so many was unfathomable.

As the song ended Apollo thrashed his massive tail back and forth—propelling his forty-ton body straight out of the water—

His black shimmering skin glittered in the moonlight as white foam spilled off like a waterfall—

His winglike fins rose slowly away from his body as he began to twist—

Pivoting on his fifteen-foot fluke—his back arching—the spray bristling from his body—

A moment of suspended time—weightless in the moonlight—

His earthbound bulk—refusing to linger in the sky any longer—fell back into the sea—

The resounding crack—the white lava waves—his flipper reached toward the sky as the dark waters enveloped his body at last—

All around him the others began following his lead—countless whales launching themselves skyward under the full moon—

They tore their bodies from the water in an endless cycle of flight and fall—erupting out of the molten water—

At last the moon reached its zenith—

Apollo and two other males began to swim quickly away from the rest of the group, which would follow north in the days and weeks ahead—

Yet Apollo's destination would be different from that of all the others—

ONE

Five days earlier
Saturday, February 10
12:00 P.M.
Shark Bay, Bequia, Caribbean Sea
13°01'N, 61°12'W

"THERE, LIZA!" Milton pointed toward the bay.

Elizabeth McKay saw the blow before it vanished in the wind. The aching tiredness in her legs from five hours of standing and scanning the horizon disappeared as the excitement of the chase began.

She looked through her large waterproof binoculars. The afternoon light reflected off the water like shards of glass, making her blue eyes burn, but she forced her eyelids open wider to take in more information. She squeezed the hard rubber eagerly when she saw the back of the whale floating in the water where it had surfaced.

"Head into the wind," she said as she braced her leg against the bench.

Milton had already anticipated her command and was steering upwind of the whale. It was hard to believe that eight years had passed since they started working together, when she first came to study North Atlantic humpback whales in their most southerly breeding grounds. Finding Milton had been like discovering a treasure of devotion: He had tirelessly helped her to navigate the dangers that she and her research subjects faced in these waters.

The old Evinrude 35 whined quietly as Milton drove his beloved lime-green boat into the trade winds that endlessly lashed these eastern Caribbean waters.

Elizabeth looked back at the viridescent mountains that thrust sharply from the water to a ridge stretching the length of the island like the spine of an emaciated animal. Bequia,—or "bekway," as the natives called it—meant "Island of the Clouds" in Carib, but today there was not a cloud in the sky. The land was densely forested, mostly with the knotted and wind-curved trunks of white cedar, which the boatmen handpicked to fashion the ribs of their double-ender sailboats. From where she stood, Elizabeth could also see towering palms and prickly cactus, along with brightly colored houses that hugged the steep slopes and flat harbors. Their roofs were topped with corrugated metal, which the islanders used to capture rainwater.

Milton cut the engine, and they silently drifted back toward where they had seen the blow. "The whale he not far now," Milton said in the warm accent of the islander—a cross between a Scottish brogue and a Jamaican drawl. When Elizabeth heard Bequians speaking to one another, she sometimes had trouble understanding them, but when they spoke to outsiders, they often tried to speak "proper," as they called it. "There the whale!" Milton shouted.

Elizabeth looked where he was pointing and saw the glistening black back and dorsal fin just as the whale began to dive. Grabbing the camera from her yellow Pelican case, she anxiously pulled off the lens cap. *Will I get the image? Will I recognize it?* She pressed the shutter-release button halfway. As the image focused, the whale fluked up, and she saw the pattern on the tail. She stopped breathing as she shot several photos, but she could hardly restrain her enthusiasm. As the tail sliced through the surface, she shouted back, "It's Echo, Milton! It's Echo!"

She magnified the digital image on the camera's small screen to

prove it to herself, but the three lines on his left fluke were unmistakable. With a little imagination, they looked like the ever widening circles of a radar display. These distinctive markings had inspired Elizabeth to name him Echo during her first season of fieldwork with Professor Maddings. Entering his unique tailprint into the fluke catalog had sealed her fate as a scientist intoxicated by the thrill of discovery and the patterns of nature.

Elizabeth scanned the water through her black binoculars with the precision of a radar-tracking device, searching for the wispy white plumes that would hang in the air for only a moment. Echo could stay down for as much as twenty minutes and surface anywhere within a radius of miles. Her stomach dropped at the thought of losing a chance to swim with Echo on her last day on the island.

Every minute that Elizabeth waited for Echo was like an hour, but she did not dare get into the water too early and risk losing track of him. Handing the binoculars to Milton, Elizabeth pulled on her yellow fins. Her weight belt pressed down against her hips. She spat into her mask and positioned it on her forehead, ready to slip silently into the sea at any moment. Her long black hair was already braided, but she swept a few untamable strands out of her face and behind her ears.

With her mask and snorkel, she was limited to the border world of the surface, but scuba diving, with its clouds of bubbles, would disturb the whales and interfere with her recording. She had become quite expert at free diving and could hold her breath longer each year. Every movement was done precisely and quietly. Sound travels great distances in the water, as light cannot, making hearing as important to whales as sight is to humans. She didn't want to scare Echo away. Not all were benevolent in these waters.

Like on many small and remote Caribbean islands, almost everyone on Bequia depended on the sea for their livelihood. While some were master boat builders whose craftsmanship was prized far and

wide, most were simple fishermen. Yet a handful of men continued the hundred-year-old tradition that their ancestors had learned aboard the Yankee ships. They hunted in small sailboats, using old-fashioned harpoons, and they were allowed to take only four whales a year by the International Whaling Commission. This was a small number in comparison to that of the Japanese and Norwegians, who each killed hundreds of whales annually.

In the distance Elizabeth saw the Japanese factory fishing boat that had been trawling these waters all season. Her jaw tightened. She knew they were offering development money on the island to gain access to the fisheries and who knew what else. They had even paid for the whaling station.

When she first came to the tight-knit community on Bequia, eight years ago, she quickly discovered that if she was going to have any hope of doing her research, she would have to make friends with the whalers—the local heroes who fought the giants.

As she got to know the whalermen, a mutual respect had developed between them. Milton had warned her against getting too friendly with his half brother, Teo, who was the whaleboat captain and a heartbreaker. Elizabeth knew she could handle herself, and to her surprise, Captain Teo had a great deal of knowledge about the whales. It was the Bequia whalers, after all, who had correctly guessed that the males were whistling—the word they used for singing—down in the depths.

Elizabeth continued to scan the horizon through her binoculars. She had given Captain Teo an identical pair when it looked like he might give up the hunt and start a whale-watching business. Elizabeth had explained that individual whales could be identified by the pattern on their flukes, like a fingerprint, and he had told her how devoted whale mothers were to their young. As they shared their knowledge, they became friends and eventually lovers. It was still hard for her to believe that she could have fallen for a whaler. She

could have escaped his handsome face and bewitching eyes—one green, one blue. She could have resisted the warmth and confidence of his island smile, but ultimately, she was caught by his love for the sea and his desire to share it with her.

For two months her desire and her doubt had wrestled like predator and prey. Elizabeth had ended their relationship over the phone the day after she met Frank for the first time, back in Boston. She knew that in the shelter of Frank's embrace, she could create a life and have a family. Despite what Frank said, she *did* want a family. Six years was not that long to be married, and Elizabeth argued that there was still plenty of time to have children after she finished her dissertation.

The blow finally came, *and it was only fifteen meters away.* Elizabeth threw down her waterproof notepad. She hoisted herself overboard and, biceps straining, lowered herself slowly into the water.

"Mind the sharks," Milton said softly as he handed her the video recorder. "Is plenty in these waters."

"Don't remind me." Elizabeth took the bulky gray waterproof housing that protected her video camera. She wished Milton wouldn't mention the sharks every time she got in the water. Many of the fishermen could not even swim, and Milton was even more afraid of sharks than she was.

Elizabeth pulled her mask down with one hand and then placed the snorkel in her mouth. She could hear her anxious breath rattling through the blue plastic tube and tried to slow it down. Ever since she had seen the movie *Jaws* as a girl, she had been afraid of sharks, which was very inconvenient for a marine biologist. She controlled her fear by never looking behind her in the water. If she was going to be eaten, she did not want to know in advance.

Elizabeth reminded herself of the facts that helped to keep her fears at bay. Unprovoked attacks by sharks were extremely rare. In these parts there were mostly reef sharks, which were rarely aggres-

sive. Even tiger sharks—while second only to white sharks in reported attacks on humans—were generally safe if one understood their behavior.

She knew that those who thought the wild was ferocious and endlessly dangerous were wrong. There was a homeostasis in nature where predator and prey existed in close proximity. Only occasionally at feeding time was the calm disrupted in a convulsion of violence as one animal died and another was able to continue living. Survival was unkind, but it was not cruel.

Elizabeth kicked her fins slowly and smoothly, trying to make as little disturbance as possible. Only forty or fifty feet below her, she could see the marbled light dancing on the gray-brown coral and a blue parrotfish darting around. The crackling of the reef's snapping shrimp filled her ears, although most of the coral looked bleached and dead. She felt a wave of sadness as she recalled how colorful the reefs had looked when she first came to the island. She thought of her colleagues who were trying to understand why the reefs here and around the world were dying faster than anyone had predicted. Was it warmer waters? Pollution? Disease? No one knew for sure.

She turned her gaze to the gray housing of the video recorder she held in front of her, putting her finger on the trigger, preparing to record Echo's every sound and movement. Elizabeth was one of the few researchers who had started to record vocalizations while simultaneously observing and recording whale behavior. Whales spent the vast majority of their lives in an alien and distant world, so the work of studying them was long and difficult. Nonetheless, at moments like this, it was thrilling.

Elizabeth kicked more quickly. Her hands floated ghostly white in front of her. She stared at her naked ring finger. Tomorrow she would be going home to California. While she hated to leave the whales, she needed to return to Frank. Elizabeth remembered the fight they'd had

the day she left for the island, and her stomach tightened as she thought about Frank's ultimatum.

Echo appeared out of the shadows, interrupting any other thought, leaving only this moment of awe. She saw his huge head, from the rostrum on top down to the jaw, ending just before his enormous flippers. It was truly impossible to comprehend the vastness of his body. Behind the jawline, a third of the way along his length, she saw his eye looking at her serenely. With increasing size came ever greater calm in the order of nature. What had amazed Elizabeth most about these titans of the deep was not their power but their gentleness. In her imagination, whales were the very eye of the storm around which the whole world hurried and worried. She knew that Echo's massive heart was beating only once every three seconds as hers continued to flutter like that of a hummingbird. Humans were small and nervous creatures.

Echo's tail floated up until his body was pointing down at a forty-five-degree angle in the singing posture. As he sang, Elizabeth's rib cage began to vibrate. She recorded every discrete sound, every phrase, and tried to remember each of the recurring themes from her earlier recordings of this year's song. She drifted closer, the song growing louder.

High-pitched whistles and ethereal, ghostly moans surrounded her, vibrating through her. The deeper grunts and groans felt like a pressure wave, similar to the bass of a giant speaker pinning her to a wall. Her whole body shook, and her teeth started to rattle. The song began to overwhelm her senses as it spilled into her middle ear, disorienting her balance, invading her. She had never been this close before. She tried to steady herself but didn't know if she could withstand the intensity of the vibrations.

She was panting through her snorkel and starting to sweat under her mask. She needed to back up, but she did not want to leave, to miss anything. It was her last day of the season with the whales, and

she would have to wait a whole year for another opportunity like this. She focused her mind on the sound, closing her eyes, becoming a part of the song.

When Elizabeth opened her eyes, she saw another whale swimming toward Echo. Her heart beat even more wildly. Interaction between whales was always the most dramatic and potentially important part of her work. It was where her research on communication came alive, and she said a scientist's prayer to the whales to give her something good, something she could write up and use to convince her department to give her another extension on her dissertation.

As she watched the languid aquatic dance of the two gentle giants, Elizabeth forgot about her deadlines. She knew that the function of the songs was one of the great mysteries of the ocean, with courtship and competition as the two predominant theories. What she was about to witness might reveal a piece of the puzzle.

Elizabeth released some of the air in her lungs and sank below the surface. If she was to understand the interaction, she had to know the sex of the new whale. Almost immediately, she could see the hemispherical lobe on its belly, revealing that this was a female. Elizabeth let out more air and sank down farther, holding the video camera out in front of her with rigid arms and pointing it where she was looking. The whale swam right next to her. Although four thousand times more powerful than Elizabeth, the female did not knock her out of the way. Instead, she gracefully raised her fourteen-foot flipper up over Elizabeth's head. And that was when Elizabeth saw it.

"Oh my God," she sputtered into her snorkel. She looked closer to see if she was imagining it. No researcher had ever seen what she was about to record on film.

TWO

THE FEMALE was in the process of giving birth. A tail, its tips curled over, was beginning to emerge from the whale's genital slit.

Elizabeth could not believe that she would be fortunate enough to witness a birth, let alone film it. In her shock, she had forgotten about breathing until her deflated chest began to ache. At times like this, she wished she could use scuba tanks.

Kicking gently to the surface, she blew water out of her snorkel and gasped for air. The whole time she continued looking down and pointing the camera at the female—she was not going to miss this for the world. Elizabeth double-checked the red indicator on the screen to make sure the camera was recording, and stayed as close as she could without scaring the mother. From what she could tell, the female did not seem agitated by her presence. Emboldened, Elizabeth let out more air from her lungs and silently descended again.

Another gasp of bubbles escaped as she recognized the notch missing from the female's tail. *It was Sliver.* She had seen Sliver several times over the course of her research, and now she felt like a midwife invited into the intimacy of the whale's birth.

Elizabeth was running out of air, but she refused to risk missing the birth.

Sliver was contracting her abdomen, trying to squeeze out the baby, just like any other mammalian mother. At last the rest of the ten-foot black body was born in a cloud of tissue and pink-tinged fluid. The calf had large fetal folds—creases caused by the cramped

confines of the womb—which made the newborn look like it was made out of origami paper.

A six-foot placenta followed soon after. Reddish brown from blood and pink from exposed tissue, it drifted in the bright blue water like a giant jellyfish. Elizabeth shivered as she remembered the man-of-war she had accidentally brushed up against the year before. She recalled the sharp pain of its stinging cells, the flush of the hives that had covered her body like a burn, and the difficulty she had breathing as her tongue and throat swelled. Frank, a physician, now insisted that she carry epinephrine with her at all times just in case she got stung again.

Elizabeth was getting dizzy from lack of oxygen. She surfaced, blowing out the water in her snorkel and gasping, both for air and from the excitement of what she had just witnessed. Her hands were numb from the adrenaline pumping through her system, but she kept the camera pointed down at the calf.

As she descended slowly once again, she saw that Echo was supporting the calf. This surprised her. Most helper whales were females, "aunties," and there was no evidence for pair bonding in humpbacks. The male that impregnated Sliver eleven-and-a-half months ago could be anywhere. Elizabeth could not understand why Echo, who had no genetic relationship to the calf, was helping it to the surface.

Then she realized—something was wrong. She had not noticed it until now. She looked closely at the calf's body, her eyes straining to see through the streaks of sunlight spilling into the water. The baby rolled off Echo's rostrum and began to sink, listing to the side, not moving its flippers or tail flukes. Elizabeth knew from her time working with dolphins and belugas at the aquarium that cetacean babies usually swim at once. But this whale's body was limp and looked like a corpse slowly sinking in the water.

Elizabeth heard the mother's contact call: *w-OP.* And again a few

moments later: *w-OP.* But there was no answer from the calf. She heard the sound again. Still no answer from the calf.

Sliver swam to the baby and nudged it with her head. The baby responded to its mother with a weak nod. It was not dead. But without the movement of its fins to keep it buoyant, the baby continued to descend. Sliver responded more urgently. She swam under her sinking baby, supported it across her head, and carried it to the surface forcefully. Her massive body created a current of water that pushed Elizabeth away.

Elizabeth's eyes were wide as she held her head above the water, waiting. She saw the two adult blows, but no breath from the baby draped across its mother's back. *What was wrong?* she wondered. *Why was this baby in distress? Had it been born prematurely? Had it been a prolonged labor?* She swam toward the calf, wanting to help it live. *But how?*

As they all bobbed above the surface, the calf's small blowhole caught her eye. It was slack. Elizabeth had an idea. It was crazy, but if it worked, it could save the calf's life.

Elizabeth flipped onto her back and began to propel herself with her fins back to Milton's wooden boat. She held the video camera against her chest and rocked back and forth, trying to make her body as streamlined as possible.

"Open the first aid kit!" she shouted as she reached the boat and hoisted her video camera onto the bench.

"You hurt?"

"*No, just give me the case!*" There was no time to explain.

"Blood in the water," Milton said as he handed her the first aid kit. Elizabeth pried open the hard plastic tabs and grabbed the pack of prefilled hypodermic needles. There were four Twinject pens, each calibrated for two doses—not enough for the calf's body weight. But dosing of epinephrine was not an exact science, and she had no alternative. The calf's muscles, including its heart, were not responding

to life. The baby's whole body was shutting down. The cardiac stimulant in her hand was the only hope.

"Listen for the horn," Milton said, holding the air horn in his hand. It was their signal to alert her if he saw sharks.

Elizabeth's flippers propelled her forward quickly, and she twisted her body rhythmically to increase her speed. As she approached the whales, she tried to stay focused, but her eyes were drawn to the edges of her mask, scanning for sharks. Maybe she did want to know if she was going to be eaten.

"Bruuuuuuuuuffff!"

Elizabeth froze. Sliver's protective underwater blow was unmistakable, as was the screen of bubbles. Elizabeth knew not to challenge a thirty-five-ton female driven by the strongest of instincts: protection of her young.

Elizabeth looked into Sliver's eye. The sclera was bulging, and it showed an anxious ring of white. *Of course she's stressed,* Elizabeth thought, and tried to calm her breath as she swam forward slowly. The baby could die at any moment from lack of oxygen. Elizabeth approached cautiously, looking for any further sign of agitation or aggression. One swipe of Sliver's tail or flipper could kill her instantly.

Instinctively, Elizabeth held up her hands, although she had no hope that this universal human gesture of peace would mean anything to a whale. *Was it possible for a whale to read emotion or intent?* Elizabeth gently moved her flippers back and forth as she held herself upright in the water.

Then she heard the jarring blast of the air horn, only slightly muffled through the water. She scanned around and saw what was no doubt adding to Sliver's agitation—a Caribbean reef shark was biting into the placenta, its white mouth shaking back and forth as it tore off a piece. Its gullet convulsed and gills pulsated as it swallowed the sizable prize.

Another gray reef shark appeared, swimming around the placenta. Fear flooded Elizabeth's veins, paralyzing her limbs, even though she knew that reef sharks were relatively harmless to humans. Fighting to retain control, she took a deep breath. Finally, her muscles responded to her command, and she turned to face Sliver, who was watching her closely. The mother was still supporting her baby on her back, helping the calf to breathe.

Elizabeth kicked her fins slowly, approaching. Sliver's body was still, unthreatening. Her eye, although stressed, seemed to communicate something—*was it understanding*? Elizabeth had no time to waste, so she continued forward, realizing the danger she was in if she had misread Sliver.

A moment later, she reached out and touched the soft skin of the baby whale. She placed her finger in one of the smooth nostrils of the blowhole, but it did not close reflexively. She could hear the strained rumbling of its breath—the calf was trying to live. *Could Sliver hear her baby's weak heart beating against her back?*

Elizabeth moved down the body of the young whale toward the tail that was draped over its mother. The calf's smooth skin felt like a shelled hardboiled egg. Elizabeth noticed several lesions, which surprised her—how could the calf have gotten lesions in its mother's womb?

There was no way to get to the underside of the tail, where the veins were visible. *This is not like working with dolphins at the aquarium,* Elizabeth thought. *How the hell am I going to do this on a humpback out here in the open sea?* She felt for the large veins of the tail fluke, which trainers and veterinarians used to administer injections in captive cetaceans.

She had never heard of anyone giving an injection to a humpback whale, but the physiology would no doubt be similar. She felt the little indentation where one of the veins curved along the shape of the tail. As she pushed on the black skin, she could feel the spongy

wall of the vein, softer than the rubbery connective tissue on either side. The vein might be too deep for the short needle, but there was no time for an alternative. The baby's life was draining away.

The air horn sounded again.

She looked over and saw quite a few dorsal fins and tails slapping on the surface. A pack of sharks was fighting over the coveted spoils, but she could see from the delicately curving shape of their dorsals that they were all reef sharks. She sighed with relief.

Elizabeth quickly removed the plastic cap of one Twinject and wrapped her fist around the pen, jabbing it into the vein all the way up to the hub. The spring-loaded needle shot into the whale's body.

No response.

She clutched another pen and punched it into the vein.

Still no response.

Elizabeth's limp snorkel hung next to her face as she kicked with her feet to stay next to the whale's drifting body. Despite its size, the calf seemed so fragile.

Sliver began to sink so that only a small part of the calf's back floated above the surface. Elizabeth would need to make the next injection underwater. She bit down on the hard plastic mouthpiece of her snorkel and felt for the veins as she ducked her head beneath the surface.

She injected a third pen. Still nothing.

The calf's circulatory system was large, but she had expected to see some reaction by now. As she waited, she saw the frenzy of sharks still feasting on the delicacy of the placenta. They lashed at the red-brown mass and at one another.

Then she saw what she had feared most—a tiger shark moved in, scattering the reef sharks. The vertical bars along its twelve-foot length were unmistakable, and its dorsal was sturdier and more menacing than those of the reef sharks. She stared at its wide

mouth of scalpel-sharp teeth and then saw it look at her through its large black eye.

It's just swimming, she told herself as she scanned its body for possible threat displays: pectoral fins pointing down, mouth gaping open, stiff movements. It was displaying none of these. Perhaps it was the whales that kept the tiger shark at a distance, or the placental feast. She kept telling herself that she was not in immediate danger, but she could not stop her heart from racing or the dizzy sensation caused by the cascade of fight-or-flight hormones in her body.

Sliver buoyed the calf back up, and Elizabeth took another giant breath once she reached the surface with them. It was as if Sliver were asking her to try again, although she knew the whale could not possibly have understood what she was doing. But somehow she must have known that Elizabeth was trying to help, or she surely would have protected her calf.

Elizabeth looked at the final pen in her fist and then felt for the vein with the fingertips of her other hand. She pounded against the whale's sloughing skin. The pen fired, and the epinephrine shot into the vein. *Breathe, damit. Breathe.*

The calf's desperate gasp was fast and sharp as the blowhole opened wide. The baby's whole body seemed to convulse with the desire to live as it arched its back, lifted its flukes, and started throwing its head and tail to the side spasmodically. Elizabeth kicked backward quickly to avoid being hit by fifteen hundred pounds of newborn awkwardness. She heard a sputtering sound and then saw a tiny blow. The baby, still stimulated from the injection, rolled off its mother and started to beat its tail up and down eagerly. Elizabeth laughed with relief, and her chest swelled with joy as she saw the two fifteen-foot blows followed by the six-foot blow from the calf. Its burst of vapor was an explosion of hope and survival.

The three whales dove, the baby following the lead of its mother and escort. Elizabeth scanned the patterns on its tail, trying to mem-

orize it. She noticed four very faint parallel lines on the left side and remembered the four injections. She'd call him Fourth Chance.

Elizabeth was alone on the surface. She looked around and realized that she had drifted twenty meters farther away from the boat, out into the open ocean. Milton knew not to approach too close while she was working with the whales, but now she heard the groan of the motor as it sped toward her. She was eager to climb in, knowing what was still lurking near the placenta. Some shark species preferred live prey, and she did not want to find out if tigers were one of them.

The bump came like a shoulder in her side. It was no doubt the infamous bump-and-bite behavior, and the shark was circling back for the second half of the equation. Elizabeth began to swim frantically, arm over arm, to the boat that was speeding toward her. In her panic, she literally tried to run from the shark, her legs kicking, her muscles steeled by the adrenaline, her chest jutting halfway out of the water.

"Shark! Liza! Shark!" Milton shouted from the boat—he must have seen the dorsal fin approaching her. Despite the frenzy and flurry of water, she felt as if time were slowing down, every second distended and terrifyingly long. A video she had seen flashed to mind. It was of a shark slowly biting off a woman's limb; it had been shockingly gradual and deliberate.

She could not help looking back at the dorsal that was only a dozen feet away. Though there was no way she would reach the boat in time, her body continued kicking desperately.

Suddenly, an enormous pressure wave of water rushed against her skin. She closed her eyes, anticipating the bite. The foaming water erupted like an underwater volcano.

Elizabeth was thrown forward.

A stream of moist air exploded above her as Echo surfaced. His exhalation was like a gunshot fired in her defense.

Elizabeth looked around her for the dorsal fin but saw nothing above the surface. She ducked her mask underwater, still searching for the shark. She was no longer breathing through her snorkel, and the salt water tasted like metallic blood. Stuffing the bite- piece into her mouth, she looked in every direction, trying to see beyond the dissipating bubbles.

In front of her, not more than a few feet away, was Echo's eye. The gaze was unnerving. She felt an intense familiarity, after all these years, and some sense of recognition beyond actual knowing.

She heard the scream of the motor and Milton's voice shouting her name, but it sounded far away. There was just this moment of presence.

Then Milton grabbed her wetsuit as Echo effortlessly sank away. Elizabeth looked up at Milton, still unable to speak. His strong fisherman's arms hauled her into the boat, and she fell against the wooden seat like deadweight, water pouring off her arms and legs.

"You all right?"

Elizabeth pulled off her mask as the adrenaline drained from her limbs. She looked up at Milton blankly, still in another world.

"That whale done save you, Liza."

Milton's words registered in her mind, along with the impossibility of their meaning. "Whales breach, Milton, that's what they do," Elizabeth said, trying to convince him—and herself—that her "rescue" was just ordinary whale behavior.

"This one done breach for save you, Liza."

"I wouldn't go that far, Milton." For a scientist, the idea that whales would care about humans was difficult to accept, not to mention impossible to prove.

"Dolphin save people—dog, too. Why shouldn't a whale save you so?" Milton was smiling, confident in his interpretation.

Elizabeth did not answer. Human-animal encounters like the one she had just experienced were always anecdotal and impossible to

study. Her father's superstitious beliefs aside, animal intent was not provable. Elizabeth unclipped her weight belt and slowly peeled off her fins, feeling increasingly human.

Milton stopped smiling as the boat began to vibrate again with the sound of the whale song.

"Cut the engine," Elizabeth said. The boat went silent with a sputter. Elizabeth grabbed the waterproof case, the clear cover revealing the digital audio recorder inside. She dropped the hydrophone over board and put on her headset.

"What's wrong?" Milton asked, perhaps noticing the expression on her face.

She pushed one earpiece closer to her ear, not believing what she was hearing. In her spiral flip pad, she quickly recorded the time and started making notes.

"What's wrong?" Milton asked again.

"The song is different—completely different."

"Maybe he just done tired of the old song."

"They don't just start singing new songs." She knew that the change in the song was as extraordinary as what she had witnessed in the water, perhaps more.

With both hands, Elizabeth pressed the earphones against her ears, trying to hear the higher frequencies better. Her eyes grew wide and her mouth opened in mute recognition. The rapid transformation was unprecedented enough, but the sounds were totally impossible in a song.

"Are we recording?" Elizabeth asked anxiously, pointing to the pelican case on the bench next to him.

Milton looked down. "Yes, Liza, we getting every last word."