

Going long and deep with two of the world's greatest freedivers



# On One Breath

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STORY BY MICHAEL SHAPIRO

PHOTOS BY SERGIO GOES

## In the training pool at Jack's Diving Locker in Kailua-Kona, I am about to attempt the impossible.

In morning air redolent of neoprene and sunblock, I am standing chest-deep in the water, breathing up in preparation for static apnea—that is, holding your breath without moving. Inhale, hold, exhale for ten seconds, pause, inhale again. Mandy stands next to me, counting softly so I don't lose my place. Her presence is reassuring; she's done this dozens of times. Kirk walks the edge of the pool, coaching the other buddy teams as they breathe up. "Thirty seconds," he calls. "Start your clearing breaths." We switch to a new breathing pattern, a 4-second strong exhalation that clears carbon dioxide. Thirty seconds from now, we will all drop face down in the water and attempt something impossible. Something, at least, that I once thought impossible: We're going to hold our breath for four minutes.

Before we go further, try this. Loosen your seat belt, relax and take a breath. See if you can hold it for as long as it takes to read the next paragraph (*without* speeding up). Ready? Go.

Kirk Krack and Mandy-Rae Cruikshank are freediving superstars. He's coached six different freedivers to more than twenty national and world records. She's held seven of those records. Her most recent, in 2007, was an 88-meter (289-foot) "constant ballast" dive. (Constant ballast is when the diver kicks down to depth and returns carrying the same weight; it's the most respected of the eight competitive freediving disciplines.) She's been deeper than that, though: Her first world record was a 136-meter (446-foot) "no-limits" dive (wherein the diver rides a weighted sled to depth and ascends with the aid of an air-filled bag). Outside the world of competitive freediving, the husband-and-wife team is almost famous for having coached extremophile David Blaine during his 2006 "Drowned Alive" performance at Lincoln Center, when he lived in a water-filled sphere for seven days and then tried (but failed) to complete a 9-minute breath hold. Had he succeeded, he would have broken the then-current world record of 8:58. (It was Mandy who eventually dived into the sphere to pull Blaine out.) They went on to train Blaine for his subsequent (and successful) attempt to break the world record by holding his breath for a lung-bursting 17 minutes on *The Oprah Winfrey Show* last April.

OK, breathe. If you're an average person, you may have felt your heart rate increase, followed by the tingle or throb of blood in your head. (You might also have to reread that paragraph when your head clears). By the end of the second sentence, you were perhaps scanning down to see how long the paragraph was. If you got as far as Oprah, your diaphragm

might have begun nudging you. Maybe the urge to breathe felt primordially irresistible much earlier, and you gave in. Maybe you could have struggled on longer—a minute, two even if you're very relaxed. But 4 minutes? Good luck. *Seventeen* minutes? To the average person, that sounds not only impossible, it sounds fatal.

But 4 minutes at least is not only possible; it is (I'm assured) within reach. When they're not training for record attempts, Kirk and Mandy travel the world, teaching average people how to hold their breath and freedive to 100 feet—or deeper. Their four-day workshops, which come to Kona about twice a year, are popular with spearfishers, amateur competitors, snorkelers, underwater photographers and the occasional extremophiles-in-training who just want to see if they have what it takes to go deep and long.

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Archeological evidence suggests that people have been freediving for at least 4,500 years (for the last 2,000, the female Ama pearl divers of Japan have been diving deeper than 100 feet), but it's gone mainstream only in the last twenty. With films like *The Big Blue* and pioneering freedivers Umberto Pelizzari and Pipin Ferreras sounding unheard-of depths through the '90s, popular interest has grown. The sport is still in its adolescence, but it's maturing swiftly as competitors dive ever deeper—at the time of this writing, the record is Herbert Nitsch's 2007 no-limits dive to 214 meters (702 feet)—and hold their breath for durations that scientists once thought would cause brain damage if not death. The current generation of freedivers, including Kirk and Mandy, has refined the training techniques to a point where a reader on an airplane who struggles through a 30-second breath hold might, after a single training session, go 4 minutes or longer. Since they started Performance Freediving International in 2000, Kirk and Mandy have trained about 2,500 people; their students have included a few celebrity alpha-types like Tiger Woods, who's an avid freediver. (Tiger brought his mojo; he made it just over 4 minutes and reached 100 feet.)

Given, I enjoy doing extreme-ish things.

Last summer, I hiked 60 miles through Glacier National Park. I've fasted for two weeks. I've surfed a 10-foot wave. I've summited Mount Rainier and scuba-dived to 200 feet. But I balked when Sergio Goes, the intrepid photographer who shot the images for this story, suggested we go to Kona for the workshop, which he had taken once already. None of my prior exploits required intentionally putting myself 100 feet down, cut off from sweet Mother Air. "Don't worry! You're going to *lahv* it, dude," Sergio had said in his assuaging Brazilian accent. "You'll get addicted!"

I don't have an addictive personality. But given the sorry state of my golf game, it would be nice, thought I, to beat Tiger Woods at anything.

**There are risks.** You could rupture an eardrum. You could squeeze—quite painfully—any of the airspaces in your body, some you didn't

even know you had. And you could black out.

There are about five different ways to black out—low oxygen, high carbon dioxide, loss of blood pressure and others—but they all have the same result. You might not feel it coming; one minute you're ascending, grooving on the cerulean hues of the sea, the next, bam! Slumbersville. But the danger from blackout itself is exaggerated. "I've had maybe twelve blackouts," Mandy says, "all on record attempts. But I was well cared for. In a few seconds I came around, disappointed that I didn't make it."

While a severe blackout can be spectacularly scary to watch, the only serious risk it poses, Kirk assures me, is when one dives alone, as spearfishers often do. Last year, blackout claimed twelve spearfishers in Hawai'i and about that many in California. The 2004 death of Gene Higa, one of Hawai'i's most accomplished spearos, was a stark illustration that even experienced watermen are vulnerable. When diving with a buddy, though, there's not much danger; a few moments after rescue, a blacked-out diver will wake up. They might be disoriented, sheepish and physically exhausted, lips blue or even black from hypoxia, but they're otherwise undamaged.

The idea that brain damage occurs from extended breath holds—even after a blackout—



(Opening spread) Mastery of breath: [redacted] coach Kirk Krack ascends through one of his nearly perfect bubble rings. (Previous spread) How low can they go? Over the past twenty years, freediving has quietly become an intensely competitive sport with worldwide appeal. Kirk films a diver during a US record attempt. (This page, left) Mandy-Rae Cruikshank practices "no-fins" dives, an event in which she broke the world record in 2003. (This page, right) Safety divers escort Jessica Wilson to the surface after a competition dive. Advances in gear, like Jessica's carbon-fiber monofin, have helped bring unheard-of depths within the range of a single human breath.





One breath shy: Mandy rescues Kurt Chambers, an accomplished O'ahu spearfisher who blacked out near the end of his attempt to break the US no-fins record last February. Blackouts are common, but nothing to worry about as long as there's a safety diver ready to perform a picture-perfect rescue like this one. After a few moments on the surface, Kurt regained consciousness, none the worse.

is a myth. "Brain damage occurs 4 to 6 minutes after you have no pulse, or when you're *anoxic*," says Kirk (anoxia being a total lack of oxygen). "When you hold your breath, you're only *hypoxic*; there's still oxygen in your lungs, your muscle tissue, your hemoglobin. Holding your breath for 4 minutes in the workshop, you're not even close to brain damage." He smiles. "Except maybe for the brain damage necessary to be there in the first place."

Freediving, then, even to triple-digit depths, is, ironically, pretty safe as far as extreme sports go. "I can't think of many other sports where you don't end up with bruises or broken bones if you mess up," says Mandy. "I've never broken anything freediving," she smiles her characteristic sweet smile. "Except records."

Still, I'm curious. I ask Mandy whether in her freediving career she's ever had any truly harrowing moments.

"Have you smelled Kirk's wet suit?" she says. "That's truly harrowing."

**The first day of the workshop** is devoted to the basics: safety, mock rescues and breath work. We learn to hold a "peak inhalation," to completely fill the pulmonary airspaces, even the trachea. We lock the throat and relax the rib cage so the sensation of pressure doesn't create an urge to exhale prematurely. We learn an advanced technique called glossopharyngeal inhalation, or "packing"—taking extra sips of breath, as though through a straw, after peak inhalation. (Don't try that at home; freedivers have broken ribs and perforated tracheas from overpacking).

On the morning of the second day, we're in the pool at Jack's, ready to test our pulmonary mettle in static apnea. We'll start with a 1-minute hold and work our way up. In between holds, we'll do our breathe-ups, ventilation patterns that lower the heart rate, load the blood with oxygen and blow off carbon dioxide. I tell myself I'll be happy if I can just beat my personal best, 1:28, but the truth is I won't be satisfied unless I hit that magic 4:00.

I finish breathing up, take a peak inhalation and go down. Now my only job is to relax. Muscle tension burns oxygen, so I go gelatinous. Just as I'm getting comfortable, Kirk calls 1 minute. Easy. I surface, breathe up and go back down for two. Easy again. Suddenly, 4 minutes doesn't seem so improbable. I've already beaten my personal best, so I relax even more; I'm playing with the house's money now. After a 2-minute breathe-up, I go down for three, thinking it's going to be all sweetness and light.

And for 2:20 it is. But at 2:21 my diaphragm decides it's had enough. It starts kicking, which feels like being punched from the inside.

"That contraction is a false sense of fear," Kirk had told us. "You're not out of oxygen. When the diaphragm is stretched, it sends the signal, 'breathe.' But once you understand what that feeling is, you control it. It doesn't control you." Reassuring in an abstract way, but those contractions are extremely concrete, and they don't ease up. I struggle to 3 minutes, but all my confidence has evaporated. Three minutes is pretty good, I think. Good, but not Tiger Woods good.

The contractions start again 2:30 into my 4-minute attempt. The idea of pushing through them for another 90 seconds is intolerable, so I stop thinking about it. Thoughts of David Blaine renew my determination, but it's going to take something more powerful than force of will; it's going to take surrender. "Beyond 3 minutes you hit some real physiological roadblocks," Kirk said. "About eight different mechanisms are throwing up sensations like you're out of air. If you're not ready for it, you panic: 'Get me the hell out of here,' your body says, when all you need to do is relax, and the sensation subsides."

Yes, "get me the hell out of here" pretty well describes it. By 3:15 all eight of those mechanisms are in open mutiny. The carbon dioxide receptor in my brain is worried that the captain has gone stark mad, and the oxygen receptor near my heart radios to my diaphragm

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for help. My body's going into oxygen conservation mode by shunting blood away from my extremities to vital systems—the heart and brain. If I persist, my body will eventually resort to more stringent conservation measures, i.e., blackout. By 3:30 I'm fighting, certain I won't make it. By 3:45 I surrender to the suffering. At 4 minutes, I'm inexplicably relaxed again (what do you know—Kirk was right), even though various new tremors are wracking my body, so I keep going: 4:15, 4:20. When I surface, it takes a moment for the world to untwist itself. I give an OK sign to Sergio, who's grinning. "4:30! You rock, Shapiro!"

I have buttered my toast with Tiger Woods, and I have eaten him for breakfast.

Every student has ticked off a personal best; even the shortest hold surpasses 3 minutes. But the valedictorian is Sergio. He comes up wobbly from hypoxia, a loss of motor control

that freedivers call a samba (because that makes it sound kind of fun, actually), but he's made it to 5:45. Two days ago that would have seemed stratospherically remote. Today I wonder if maybe I could do it.

I get it now, the addiction, why people push their limits even to the point of blackout. "You're never satisfied," Mandy says. "If you come up clean, you know you could have done more. But how much more?"

Indeed. How much more? It's liberating; I've exceeded what I had assumed was a hard-wired physiological limit—exceeded it by orders of magnitude. "Once you break boundaries in this area of your life," says Mandy, "you start breaking them in others. You realize that you can do more than you ever dreamed possible. It changes you."

"Yeah," I say. "But is it worth it? I mean, does it help you get chicks or something?"

Kirk shoots a glance at Mandy. "I have no complaints," he says.

**In the waters** off Pu'uuhonua o Hōnaunau, I'm clinging to a floating training rig, breathing up for a dive. Far below, at the end of a 100-foot-long rope, is my destination: a bright yellow plate hovering in the blue void, beckoning. One hundred feet might not seem very far when you're walking down a street. But take that distance, upend it, add four atmospheres of

water pressure and cut off your air supply. Suddenly 100 feet might as well be a mile. Especially because getting there is only half the journey.

A 4-minute static breath hold translates into an active 2-minute dive. Since the average rate of descent and ascent is 1 meter per second, I should—theoretically—be able to freedive to at least 200 feet. But pools are not oceans, and out in the big blue, things get complicated. For one, you must contend with pressure.

Conventional wisdom had it that the human body could not withstand the pressures of extreme depth. Airspaces like the lungs are compressible, and it was once believed that even as shallow as 100 feet, these airspaces would be crushed. But freedivers have cracked every theoretical limit that's been set so far; at 100 feet and well beyond, lungs have not collapsed. Only recently have researchers learned why.

“It took me six years of training to hold my breath for 6 minutes,” says Jessica Wilson. “Some of it is natural talent, but most is mental. Anybody can hold their breath for a lot longer than they think they can.” Here, Jessica relaxes into her attempt to break her own US women’s record for static apnea (holding one’s breath without moving). She succeeded by a mere 3 seconds, reaching 6:30. With neck weights to keep him level and a Lycra skin to reduce drag, Kevin Busscher (right page) goes for a US record in dynamic no-fins apnea.





"You think you're really graceful in the water until you're next to them," says Mandy. "Then you realize: You're nothing." Still, humans and dolphins are in some ways more similar than different. Like dolphins, humans have a mammalian diving reflex that adapts our physiology to extreme depths and long breath holds. Freedivers describe the accompanying sensation as a kind of euphoria: "You're not fighting for air," Mandy says. "You're relaxed, you're exploring."



Kirk ascends through a cloud of bubbles blown by a safety scuba diver below. "Scuba diving is like driving a Hummer through the woods," he says. "You can turn on the AC, roll up the windows and try to experience the forest. Or, you can freedive, which is like throwing on a backpack and walking through it. You smell the air, hear the sounds, go places you can't go in your Hummer. It's really about freedom."

Humans share a set of adaptations with deep-diving mammals known as the "mammalian diving reflex." Like whales, seals and dolphins, our bodies adjust to increasing pressure in nifty ways: by moving blood away from the extremities, slowing the heart, boosting the red blood cell count and, my favorite, "thoracic filling." As you descend, plasma from the blood fills your lungs. Because fluid, unlike gas, cannot be compressed, the plasma-saturated lungs become essentially squeeze-proof. The effect is unnoticeable on shallower dives, but when returning from extreme depth—300-plus feet—"it feels like a chest cold," Mandy says. "You hear a gurgling sound when you breathe, but within 15 minutes the liquid is absorbed back into your bloodstream."

The diving reflex would be essentially useless to a landlocked mammal; some theorize that it might therefore be a vestige from our distant evolutionary past ... or, to hear Kirk tell it, a harbinger of our evolutionary future. "We're water people," he muses. "We've probably been water people longer than we've been terrestrial people. We evolved out of the water, and now there's a whole group of us trying to evolve back into it." That might sound a hair past crackpot, but it's not a new theory. Jacques Mayol, one of freediving's early patriarchs—the first man to reach 100 meters, in 1976—predicted in his book *Homo Delphinus* that returning to the sea is humanity's evolutionary destiny. Whales and dolphins have already done it, he argues; their skeletal structure indicates they were once land mammals that re-adapted to the water. If they did it, why not us? Humans are already exceeding the breath hold capacity of dolphins, which averages about 8 minutes ("but if they took our workshop, they could probably do 14," says Kirk). Those who actively develop their innate diving ability are taking the tentative first strokes back to our ancestral home, the ocean. We have a few million years to go, but we're probably further along today than at any time since our ancestors left the water. With divers now closing on 1,000 feet and 20-minute breath holds all but inevitable, there's no telling how deep we can go. "Just when you establish a physiological cap," says Kirk, "the body adapts and changes, like it's been doing for millions of years. There is no theoretical limit." He stops and reconsiders. "Well, Challenger Deep, in the Marianas Trench: 36,000 feet. That's the limit."

**I'll hit Challenger Deep tomorrow.** Today I'll be satisfied with 100 feet, which after a weekend with two of the world's greatest freedivers seems a mere bounce to the bottom of the kiddie pool.

In wet suits, weight belts, low-volume masks and long-blade fins, we swim out into the bay

off Pu'uhonua o Hōnaunau. Kirk and Mandy set up the training rig and drop lines down to 66 feet.

We warm up with "pull-downs"—taking a peak inhalation and slowly pulling hand over hand down the rope, first to 33 feet, then 45, then 66. This progressively acclimates our bodies to increasing pressure and initiates the diving reflex. Since we're not burning oxygen by kicking, these *should* be easy.

Thirty-three is easy, even relaxing. I hang onto the line in the silent blue, watching the sunlight glitter through the shifting prism of the surface. But after that the party ends. I'm dealing with a dozen different problems: My

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wet suit's too tight, my snorkel leaks during breathe-ups, my mask fogs. I'm cold and I have a bolus of phlegm in my sinuses the size of a golf ball. On the 66-foot pull-down, something goes wrong. My abdomen freezes up. It's as hard as stone, inert. Ten feet shy of 66, I pull "the chicken trigger" (Kirk's phrase) and bee-line for the surface. It takes everything I have to get back, my diaphragm now clenching all the way. Relaxing it isn't. I don't get the "Zen" hit that veteran freedivers go on about. It's only a 1:30 dive. One minute, thirty seconds of torture.

By the time we begin our active dives, I'm thoroughly freaked. And annoyed; the other divers are making it look easy. Sergio cruises past 100 feet on his first try. Remy, a spearfisher from O'ahu, "touches plate" right after. So does Hunter, who in stressful situations has the equanimity of a chopper pilot (because he is one). I confront the sad reality that of all the badasses, I am the least bad.

Over the next two days, I improve a little. My biggest enemy is pressure; past 60 feet I can't equalize my ears. I eventually claw my way to a respectable 84 feet, but I squeeze my ears every time and surface within moments of blackout. I take some comfort that I'm not the only one struggling. Josh, a dynamic apnea diver from California, has a sinus cold and can't get deeper than 30 feet. Dirk, who's flown in from Alaska (freedivers in Alaska ... news to me), also can't equalize. Sergio, who's been diving continually to shoot, squeezes his ears so badly he may have ruptured an eardrum. Hunter, who'd been popping off 100-foot dives just the day before, is kept to 20 feet by stabs of tooth squeeze.

But the pressure isn't my real enemy, Kirk tells me. "When you're stressed, you're working against your diving reflex—your breathing and heart rate increase. If you believe you can't do it or that it's dangerous, you get stressed." In other words: Chill out, Cassandra. Mandy similarly refuses to indulge weenie-ness. "It's mental," she says. "If you can't get your mind to play along, it's going to stop you cold." Logic like theirs is, I suppose, the reason they dive to hundreds of feet and I, well, don't.

Late in the day I've got one last shot. I breathe up, putting all my focus into relaxing. As I kick down, I don't look at the markers on the line in front of my face, and I lose track of

my depth. I close my eyes; it's immediately easier now that I can't see how far from the surface I am. Kick, relax. Kick, relax. Before I realize it, I reach a point in the dive I'd not yet experienced: the "sink phase," when I'm deep enough to become negatively buoyant. I stop kicking and sink into the embrace of the deep. Down here the water is cold, limpid, electric blue, viscous from the pressure. Just as I dare to enjoy myself, a savage pain electrifies my head. My ears will equalize no further, and I know I've hit the wall. I look down for the first time to see the yellow plate dangling just 10 feet beneath me, mocking. Hypoxic and with 90 feet of water above, I can't afford hesitation; I must decide: Go for it and risk tearing an eardrum, or wuss out and likely never know the glory of 100 feet on one breath. Eardrums heal, I reason. Egos stay bruised forever. I dive, my ears at the edge of implosion, and I smack that plate as hard as I can, as much in vengeance as in joy.

Then I turn and swim like hell.

**One of the first freedivers** to challenge the notion that only the elect could reach extreme depths was Brett LeMaster, who came out of nowhere (well, New Mexico, actually) to break Umberto Pelizzari's constant ballast world record with an 81-meter (267-foot) dive in 1999. "Suddenly," says Kirk, who coached Brett to that record, "people were saying, 'If he can do it, anyone can.'" In a sense, Brett broke the sport wide open, but the resulting surge of popular interest had its downside.

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## On One Breath

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"There got to be so many personalities and egos, so much bickering in it," Brett tells me as we step onto his boat in the harbor at Keauhou. "I didn't want to be a part of that." Now retired from competitive freediving, Brett settled in Kona and started Mele Naia, a dolphin- and whale-watching tour, in 2007.

He's taking Kirk, Mandy, Sergio and me out to apply our freediving skills to something other than pushing limits. We're going to play with dolphins and whales, if we can find them.

It isn't long before we encounter a pod of spinner dolphins; Brett has an uncanny sense for knowing where to look. We suit up, slide into the water and breathe up. Anyone who has swum with dolphins knows that chasing them is futile and exhausting. You have to let them come to you, which they're more likely to do if you're relaxed. If you look like you belong there.

Brett heads to the bottom at about 50 feet and reclines in the sand like he's ready for a mai tai. Mandy has already attracted playmates. She glides with effortless grace and power, a water nymph at ease in her element. Her body, long and relaxed, seems to mirror the dolphins'. They respond, slowing to cruise with her in pairs and trios, braiding invisible helices around her as they go. They stay together for a minute, two minutes, and when finally she's called back to the surface, they turn to watch. Eavesdropping on their silent conversation, I wonder whether the idea that humans might one day return to the sea is really so far-fetched.

My turn comes later, though, when we find a pod of pilot whales about 2 miles offshore. Pilot whales, which look like what would happen if a dolphin swallowed a VW microbus, normally stay clear of humans, but we've caught them lolling during an afternoon siesta. They take little notice as we enter the water. I breathe up, keeping one eye on the pair of large oceanic white-tip sharks following the pod, and then I dive to view the whales from below.

As I drift, watching the whales hang in blue space as though affixed to some cosmic mobile, it happens. My heart slows, and a wave of relaxation passes through me. It's as if I can no longer feel the edges of my own body, as if I were dissolving into the ocean itself. I glance at the gauge on my wrist: I'm past 60 feet, and I've been here for longer than a minute. I had no idea. When finally I do head for the surface, it's because I know I should, not because my body says I must. I look down into the depths where shafts of sunlight converge on some vague, distant point and think: Maybe one day. **HH**

# In Memoriam: Sergio Goes

## I never met anyone as happy as Sergio Goes.

I'd known him for a year before he and I visited the Big Island to research and shoot the story "On One Breath" in this issue. I had never seen him angry, never depressed. His disarming smile and easy confidence made you believe anything was possible; they were powerful enough to persuade me to fly to Kona and attempt to freedive to 100 feet on a single breath.

On July 11, Sergio went freediving off Waikiki with friends; they were performing warm-up dives when his diving buddies noticed Sergio had disappeared. Fifteen minutes later they reported him missing, and search crews scoured the ocean until dark. The search resumed early the next morning, and his body was found. As we go to press with this issue, what exactly happened remains a mystery.

When things got difficult—and scary—for me during the freediving assignment, Sergio was there to encourage me (usually in the form of, "Ah, don't worry, Shapiro! It's going to work out fine!"). When I couldn't get deeper than 84 feet, he stroked my ego: "You've already been deeper than most people will ever get!" When I had family *pilikia* (drama) during that same assignment, Sergio bought me a beer and talked through it with me. Over those ten days, it got to be a joke between us: I'd complain just to see if I could rattle him. But nothing could break or even shake his almost supernatural optimism. He was fearless, impervious to negative thinking. He had the kind of expansive charisma and charm that made you want to be around him and that made your own anxieties seem trivial.

And he loved his 6-year-old son Gabriel with an ardor I wish that every child could experience. "I *lahv* that little guy! It's all about da *keiki*, brah," he'd say. His mangled pidgin, delivered in his Brazilian accent, cracked me up every time he attempted it.

But Sergio was also a serious artist. Apart from his photography, he produced an award-winning documentary, *Black Picket Fence*, an inside look at life in the public housing projects of New York City. He took risks for his craft, some of them more dangerous than perhaps his cavalier cheerfulness let him admit. Whether it was diving to extreme depth, immersing himself in the violent gang culture of Brooklyn or flying (and crashing) in an ultralight glider on the slopes of Mauna Kea, Sergio worked tirelessly to get the shot. And in doing so, he's given us some of the most daring and memorable photographs of Hawai'i and its people that have ever been taken; it's been an honor for *Hana Hou!* to publish his work.

Our October issue will feature the extraordinary photos he shot of last year's Kona Ironman triathlon, along with his personal account of running the Ironman in 1990.

All of us at *Hana Hou!* extend our deepest condolences and aloha to his family, especially to Gabriel. We dedicate this issue of *Hana Hou!* to Sergio in gratitude for the amazing photography he has produced for us over the years—and, even more, for his friendship.

Sergio Goes was 44 years old. HH



[ Michael Shapiro, Editor ]

Michael Shapiro

PAU HANA