SIDE BY SIDE
William Winram swims with a tiger shark in Aliwal Shoal, South Africa

Swimming With Sharks

William Winram can hold his breath for minutes at a time. He can also dive to astonishing depths under water while doing it. That's making an ocean of difference for researchers who study sharks

BY RYAN STUART

FRED BUYLE

QUIET TIME
Winram describes free-diving as a peaceful experience. "At a certain depth, my mind goes calm."

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To just about anyone else, it would have been panic time. William Winram watched as a large female great white shark charged towards him, her mouth open, dozens of teeth bared.

WILLIAM WINRAM

Suspended 20 metres below the surface of the Pacific Ocean near Guadalupe Island, Mexico, Winram couldn't even take a deep breath to steady his nerves. He wasn't wearing a scuba tank. But rather than shoot to the surface in fear, Winram relied on a lifetime of ocean experience. The shark was just trying to exert her dominance, he figured. As she prepared to bite, Winram bopped her on the nose with what he had at hand: a spear gun.

Chastised like a puppy, the shark turned tail. Then Winram did what only a man with his CV could do: He fired his spear gun into the back of the retreating animal, pulling a tissue sample. The shark would have barely noticed the sting, and Winram casually floated up to the surface. Mission accomplished.

Obviously, Winram is not your average shark researcher. Born and raised in the waters around Vancouver, he's now a world champion free-diver, a sport that challenges athletes to dive to astonishing depths without the aid of breathing apparatus. He is today the owner of two world records for diving up to 145 metres deep on a single breath of air. More than that, he's using his unique skills to help scientists better understand sharks — and to reinvent the public image of the ocean's top predator and promote conservation of marine environments.

"William challenges people's understanding of sharks," says Imogen Zethoven, the director of shark conservation at The Pew Charitable Trusts. "They are not the mindless killing machines that the *Jaws* generation was led to believe. William can speak firsthand about how sharks are as intrigued by us as we are by them. And he is a witness to the role they play in maintaining the balance of marine food webs and ocean health."

Born in the 1960s (he won't be more specific) in Vancouver, and raised in the water by his scuba-diving father, Winram has spent most of his life wet. Sharks fascinated him from an early age, but it wasn't until he came face to face with a man-eater that he realized just how misunderstood they are.

A four-metre tiger shark surprised him while he was spearfishing in Mexico. "I was freaking out," Winram recalls. But the shark didn't want the fish he had just killed and it seemed just as afraid of Winram as he was of it. So, man and shark swam to shore within sight of each other. By the time Winram hit the beach, his understanding of sharks had fundamentally changed. "I was surprised it was not the bloodthirsty beast people said it was," he says. "It didn't attack. Its behaviour was so contrary to what I expected."

Since then, Winram has spent decades swimming with sharks. Their true nature, he insists, is that they are "shy, curious and cautious creatures." Predators, yes, but in no way evil. "I think they're the coolest animal."

After his encounter with the tiger shark, sharks in general became a private infatuation for Winram (one he kept to himself lest people call him crazy). He worked a variety of jobs to fund chances to dive with them. Then, in 2005, he stumbled on the sport of free-diving, also known as breath-hold diving. Winram quickly rose to the top of the sport, winning competitions and, in 2013, setting his first world record. "I like the peacefulness of going deep," he says. "At a certain depth, my mind goes calm."

Beyond the physical and mental challenge of holding their breath under immense pressure, free-divers have to be in tune with their body to understand what they are capable of on that particular dive. Screw up, and death or brain damage is possible. "There are lots of factors to consider," he says. "The biggest is my ego."

SILENT APPROACH
Scuba gear is noisy and disturbing to sharks. Winram can approach them quietly, making tagging more successful.

LAURENT EGLI

The more Winram competed as a free-diver, the more he came to appreciate that the world's oceans are in trouble, and no species more so than sharks. According to Pew's Zethoven, nearly 30 per cent of shark species are endangered and 26 per cent are close to becoming threatened. Only 37 per cent of shark species are considered safe from extinction, the lowest percentage among studied vertebrates. The biggest threats: the market for shark fins and by-catch in commercial long-line fisheries.

The consequences of losing shark populations extend throughout the ocean. Take a coral reef. Small fish maintain coral health by eating algae. Bigger fish eat the small fish, and then sharks eat the big fish. Take sharks out of the equation, and the big fish population explodes. They overeat the small fish, then algae chokes the coral while the declining population of small fish undermines the life cycle of the larger fish. And so on. The same pattern extrapolates to just about any marine ecosystem.

"There was a Mexican fishing village where I went diving over many years," Winram recalls. "The marine life was amazing. Then one year I returned and saw hundreds of sharks slaughtered on the beach. The villagers were tired of competing with them for fish. When I returned a couple years later, there were no fish bigger than a twoonie."

Winram wanted to do something to help sharks. One of his free-diving colleagues had the perfect opportunity. In 2005, Fred Buyle, a Belgian diver, had worked with a researcher in the Malpelo Archipelago, off the coast of Colombia, using his breath-holding skills to tag sharks. He invited Winram to join him on another tagging expedition in 2008.

Their skills provided a promising alternative for researchers. Up until then, scientists had two options when they wanted to tag a shark or collect a tissue sample: they could scuba dive with the sharks, hoping to get close enough to tag or sample with a pole spear, or they could

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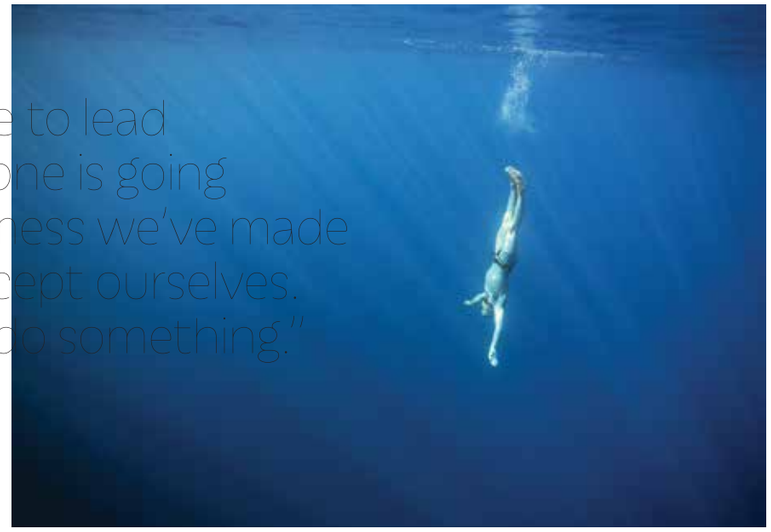
catch sharks with fishing gear and wrestle them onboard a boat. Both methods had drawbacks. Scuba is noisy and slow, making it hard to get close enough to a shark to place the tag or take a sample. Fishing lets scientists get close, but many shark species don't survive the encounters. Most hammerheads, for example, die after being caught.



"I believe you have to lead by example. No one is going to clean up the mess we've made in the oceans except ourselves. I felt like I had to do something."

Free-diving offered an attractive alternative. With little more than a mask and flippers, free-divers can descend without disturbing the sharks. Most scientists don't have the ability to dive deep enough, 20 to 45 metres typically, or the spear gun skills to hit the right part of the shark. For Winram and Buyle, the dives were no problem, and years of spearfishing meant both had the aim to hit the sweet spot for biopsies or tagging.

On their first joint expedition in the Malpelo Archipelago, Winram and Buyle tagged 40 scalloped hammerheads. It was a great success, and Winram was keen to contribute to more projects. But he was also aware that the $500 to $7,000 price per tag put them out of reach of many researchers. So, Winram and his wife Michèle Monico started to look for outside funding. After two years of searching, a Swiss charitable foundation signed on to cover the costs of the tags. To accept the funds, Winram and Monico established The Watermen Project, a charity focused on ocean conservation. Then, they began reaching out to more scientists.

One was Samuel Gruber, a veteran shark researcher and founder of the Bimini Biological Field Station. Located on the island of South Bimini, Bahamas, about 80 kilometres off the coast of Florida, the field station's protected waters are a refuge for the great hammerhead, an endangered species scientists know little about because the sharks are too delicate to catch and too wary to approach with scuba.

From years of research, Gruber knew the sharks congregated around Bimini from December to April, but not where they went or what they did the rest of the year. "They were impossible to study," Gruber says. The dynamic changed once Winram entered the picture. Working with field station staff — going out as a team improves safety — Winram would snorkel near the surface, watching for sharks, which tended to cruise the ocean's sandy bottom at Bimini.

Once he spotted one, he would exhale all the air in his lungs and dive, kicking with fins. (Empty lungs decrease buoyancy, allowing faster descents with less movement and energy expenditure.) If he got close to the shark, he would use a spear gun to place an acoustic tag, aiming just behind the dorsal fin. Some days, he would make 80 to 100 dives of two- to three-and-a-half minutes. It was exhausting work.

Winram returned to Bimini during the winter of 2014, placing 17 tags on great hammerheads. With 50 underwater receiving stations set up around the Bimini Islands, Gruber's team can now track where the sharks go and what other sharks they travel with. "There's no other way for us to get this information," Gruber says.

Gruber's is one of 20 different projects Winram has worked with so far. "We get more requests than we can support," Winram says. Yet, he's now considering diversifying beyond sharks to rays and whales.

Beyond the scientists, Winram's work is being recognized in the conservation world, too. In 2013 the International Union for Conservation of Nature, or IUCN, named Winram an ocean ambassador for the global marine and polar program. IUCN is one of the oldest and largest conservation organizations; many countries and well-known NGOs (including the Canadian Wildlife Federation) are members. In exchange for the foundation's support, Winram consults on and contributes to IUCN projects and helps spread the word for ocean protection.

The rest of his time, as it has been since he was a kid, is spent in the water, mostly free-diving, teaching courses, coaching and competing. On land he fundraises for The Waterman Project, where he remains a volunteer.

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PLAYING TAG
William Winram tagged 17 great hammerhead sharks during a 2014 expedition to the island of Bimini in the Bahamas.

LAURENT EGLI, WILLIAM WINRAM