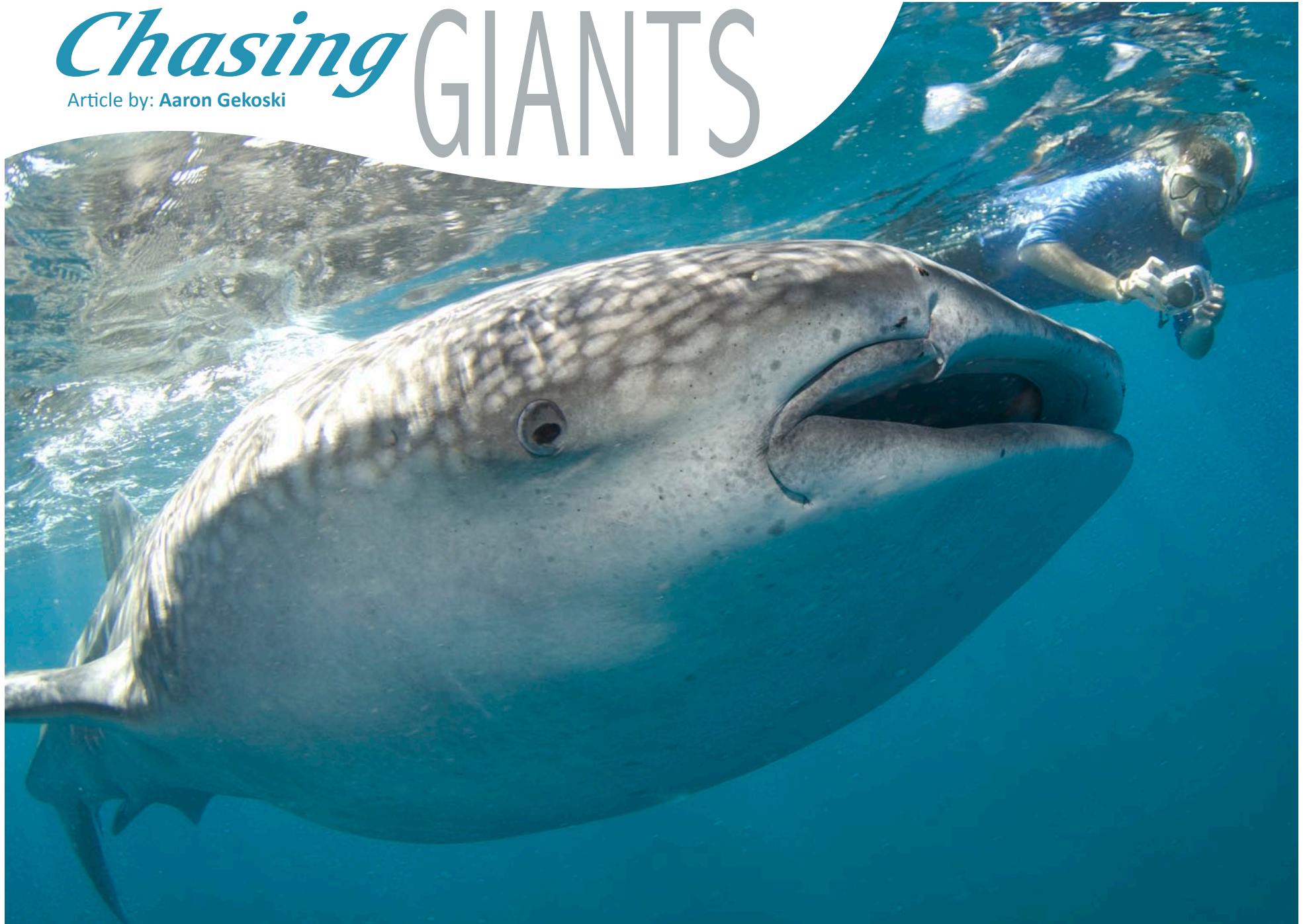


# *Chasing* GIANTS

Article by: Aaron Gekoski





Photograph by: Aaron Gekoski

Dr Simon Pierce with plankton

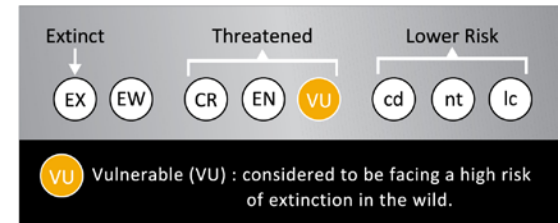
Six years ago, Dr. Simon Pierce had never even seen a whale shark. Now, he has spent more time in the water with this enigmatic giant than anyone in history. Aaron Gekoski speaks to a man whose job involves firing lasers and shooting satellite tags at the biggest fish in the sea.

“Dr. Pierce, you must have one of the best jobs on earth?” is my opening question to the lead scientist at the Marine Megafauna Foundation (MMA) in Tofo, Mozambique. “Yeah, I must admit, it is pretty cool. Though it’s not always as glamorous as you may imagine”. Dr. Simon Pierce is king of the understatement, the quintessential modest scientist and Kiwi. In fact, being referred to as “Dr. Pierce” makes him shift uneasily in his seat. “Please, call me Simon”.

The whale shark is an iconic species; a tourist trump card that attracts people from all over the world desperate to snorkel or dive with this placid pelagic. The whale shark’s popularity with divers is mirrored within the scientific community. On a daily basis, Simon is inundated with applications from students and marine biologists, begging him for a work placement or job. Have a glimpse into his life and it’s easy to see why. This is no ordinary job. Luckily, Simon is no ordinary guy.




### Conservation Status



<b>Kingdom:</b> Animalia	<b>Order:</b> Orectolobiformes
<b>Phylum:</b> Chordata	<b>Family:</b> Rhincodontid <small>(Müller and Henle, 1839)</small>
<b>Class:</b> Chondrichthyes	<b>Genus:</b> Rhincodon <small>Smith, 1829</small>
<b>Subclass:</b> Elasmobranchii	<b>Species:</b> R. typus



A diver in a blue tank and yellow fins swims in clear blue water. A large, dark manta ray with white spots is swimming in the background, its body filling much of the lower half of the frame.

Yet his story begins, like so many great adventures, with a simply telephone call.

Back in 2005, Simon was studying for his PhD at the University of Queensland in Australia. His doctorate was on sharks and rays; animals Simon had grown up fascinated with - at age 8 he was already penning letters to famous marine biologists from his home in New Plymouth, New Zealand.

The telephone call was from his good friend Dr. Andrea Marshall (*star of the BBC documentary: Andrea - Queen of the Mantas*) {to view please [click here](#)}

She was studying manta rays in Tofo, a small village in the Inhambane province of Mozambique. Tofo lies nearly 400kms from the capital Maputo, though over 12 000kms away from Queensland. "Forget the distance" Dr. Marshall told him. "You won't believe the diving here".

She went on to describe seas brimming with behemoths - mantas, humpback whales, giant stingrays, dugongs, and most notably, whale sharks. Andrea was witnessing unprecedented congregations of up to 50 strong. "She had my attention" smiles Simon.

Dr. Marshall wanted Simon to join her, though she was frank about the frustrations of conducting research in a third world country. As recently as the mid 1990's, when Mozambique was recovering from a civil war, it was officially the poorest country on earth.

Although slowly recovering, it remained a work in progress. The internet - when it worked - was painfully slow. The country only possessed one motorway, which was strewn with potholes. Malaria was rife.

Yet Simon remained intrigued. *“Even though I'd never actually seen a whale shark before, Tofo sounded magical and Mozambique fascinated me. I actually believed I could make a difference there if I could avoid being eaten by lions,”* he jokes. Thankfully, Tofo's only lions are the lionfish that parade their flamboyant fins around these fabulous reefs.

Simon took the plunge and booked his ticket. Now, after only six years, Simon is a world-leading scientist who has identified more whale sharks than anyone - over 580 - that's 19% of the world's known population

Thankfully, due to their immense size, whale sharks pose no threat to humans. You are more likely to get gnawed to death by a fluffy bunny than eaten by a whale shark. They are the gentle giants of the sea - big, zooplankton-filtering softies. Their diet consists almost entirely of small organisms such as krill, fish eggs and crustaceans. Somehow, this nutritious diet propels the biggest sharks to over 18 metres long and 40 tonnes in weight.

For a 40-tonne mass of conspicuousness, the whale shark is shrouded in mystery and myth. The first myth is one regarding categorisation. Whale sharks are not hedging their bets by being both 'whales' and 'sharks'. They are most definitely sharks - filled with cartilage - rather than bones, like whales. The 'whale' part of their name is simply in reference to their gigantic frame.

African legend has it that God was so pleased with himself when he created this beautiful fish, that he gave his angels coins to throw down from heaven onto its back. So when whale sharks swim near the surface, catching the sun on their backs, it's their way of saying thank you to their Maker.



▲ **Zooplankton** - are heterotrophic (sometimes detritivorous) plankton. Plankton are organisms drifting in oceans, seas, and bodies of fresh water. The word “zooplankton” is derived from the Greek zoon, meaning “animal”, and planktos (πλαγκτος), meaning “wanderer” or “drifter”. Individual zooplankton are usually too small to be seen with the naked eye.



Photograph by: Andrea Marshall Photographic

▲ Whale shark feeding

The answer as to why they are covered in spots is more likely a case of simple biology. Yet many real sources of mystery remain, which Simon and his team of scientists are dedicating their careers to solving. For instance, the whale sharks that pass through Tofo are predominantly juvenile males – over 70%.

**Which poses the question - where are the females? Or the bigger males? Or the babies? Or the pregnant females for that matter? To this day, only one pregnant female has ever been studied. It's safe to say there's still a lot to learn.**

To help solve the bigger questions, Simon has reached for the stars and enlisted the help of **NASA**, no less. The US space agency is supplying Simon and his team with satellite imagery to help them track satellite-tagged whale sharks. This helps him pinpoint the shark's location and feeds back information on how far it has travelled and how deep it has dived. This method has helped Simon understand the sharks' migratory patterns and provided other, unexpected insights. We now know that the sharks dive much deeper than previously thought – one tagged male plunged nearly 2kms on one of its descents, making whale sharks the deepest-diving fish in the world.



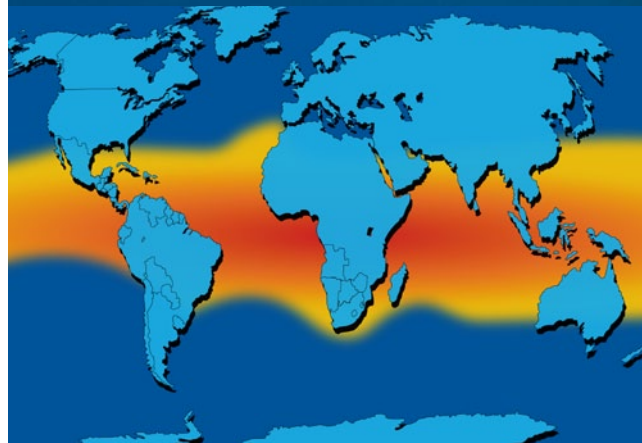
Photograph by: Aaron Gekoski



Photograph by: Aaron Gekoski



Photograph by: CJ Coetzee / Moz Images



- ▲ **Top Left** - Simon with satellite tag from NASA
- Top Right** - The Team
- Middle** - Measuring a Whale shark using lasers
- Bottom Left** - Map showing where Whale sharks can be found in the world

Photograph by: Andrea Marshall Photographic



**Studying these giants is a surprisingly high tech job, requiring high tech equipment. Along with satellite tags, Simon and his team have been using lasers, to provide more accurate measurements of the sharks than ever before.**

The device works by mounting two lasers to a camera, 50cm apart. The lasers project small dots onto the shark, which provide a fixed scale so the photographs can be analysed with greater accuracy. Along with providing more precise estimates of size, it is hoped that the results will reveal more about the lifecycle of whale sharks.

*“The lasers have been a revelation. It’s not easy to estimate the size of a 10 metre long shark just by eye-balling it”.*

Worldwide, whale shark populations have been decimated: the species is officially listed as globally threatened. A whale shark’s huge dorsal fin is highly sought after in China, where it is used as a vulgar display item at the front of shops. The biggest fins have been known to fetch \$75 000. Whale sharks are also hunted for the oil in their livers, which is employed to coat boats, as well as for their meat.

Luckily, Mozambicans don’t particularly enjoy eating whale shark meat due to its spongy, oily texture. However, whale sharks are occasionally – and completely legally – hunted here.

It remains an astonishing fact that given the beauty, rarity and popularity of this species to tourists, the government still hasn’t granted them protected status. In the Philippines, the whale shark is not only protected, but revered by its people. Every year, thousands of people attend a carnival in Donsol in celebration of this beautiful leviathan.



*Photograph by: Aaron Gekoski*



Education remains integral to the survival of this species. At a local level, Simon and his team give talks to the community on whale sharks and other marine animals.

*“Unfortunately there is very little education surrounding the ocean here. I want to show people that a gigantic shark is actually pretty cool and not something to be scared of”.*

On an international level, whale shark tourism remains the best solution for raising awareness of the sharks’ plight. Though this must be well regulated.

*“I would hate to see Tofo turn into Holbox in Mexico, where there are over 250 licensed whale shark tour operators. At the moment less than 10 operate here. If expansion happens, we need to make sure it’s managed to ensure we don’t love this species to death”.*

Simon has been at the forefront of efforts to protect the sharks in Mozambique, applying pressure on the government to make fishing illegal. He is edging closer to this goal every day.

*“I don’t want to leave until whale sharks are effectively protected in Mozambique. The great thing is that, by protecting the whale shark, we’ll also be helping the other species that share its environment.”*

Let’s only hope he succeeds, as the world’s oceans are in a mess: warming, rising, polluted and catastrophically overfished. Plenty more species could do with the help of a dedicated and humble scientist like Simon. 🐙



Photograph by: CJ Coetzee / Moz Images

