Down deep with GREAT WHITE SHARKS

Great white sharks are superbly evolved and truly an apex predator. But, unlike their terrestrial equivalents, there is very little reverence for them. Instead, they have become widely demonized as brutal man-eaters silently prowling our coastal waters in a perpetual search for victims, pouncing with ruthless and terrifying efficiency.

It is true that great whites have been held responsible for more deaths of swimmers, surfers and divers than any other shark, but what is the reality about these creatures - are they really what the tabloid media have made them, or are they just greatly misunderstood?

That reality is quite nuanced and very much depends on how you approach it. Because unlike lions and tigers, where the images we see of them often include cute, almost kitten-like cubs that are hungry and need to be fed, great whites are predominantly shown in a sensational manner that reinforces our preconceptions. Gaining a better understanding of these creatures requires work, a degree of patience and a desire to go deeper into things that interest you.

> “At the surface the sharks approach the cage because of all the stimulation present, whereas on the ocean floor their behaviour, approach and attitude is quite different”

WHERE THEY ROAM

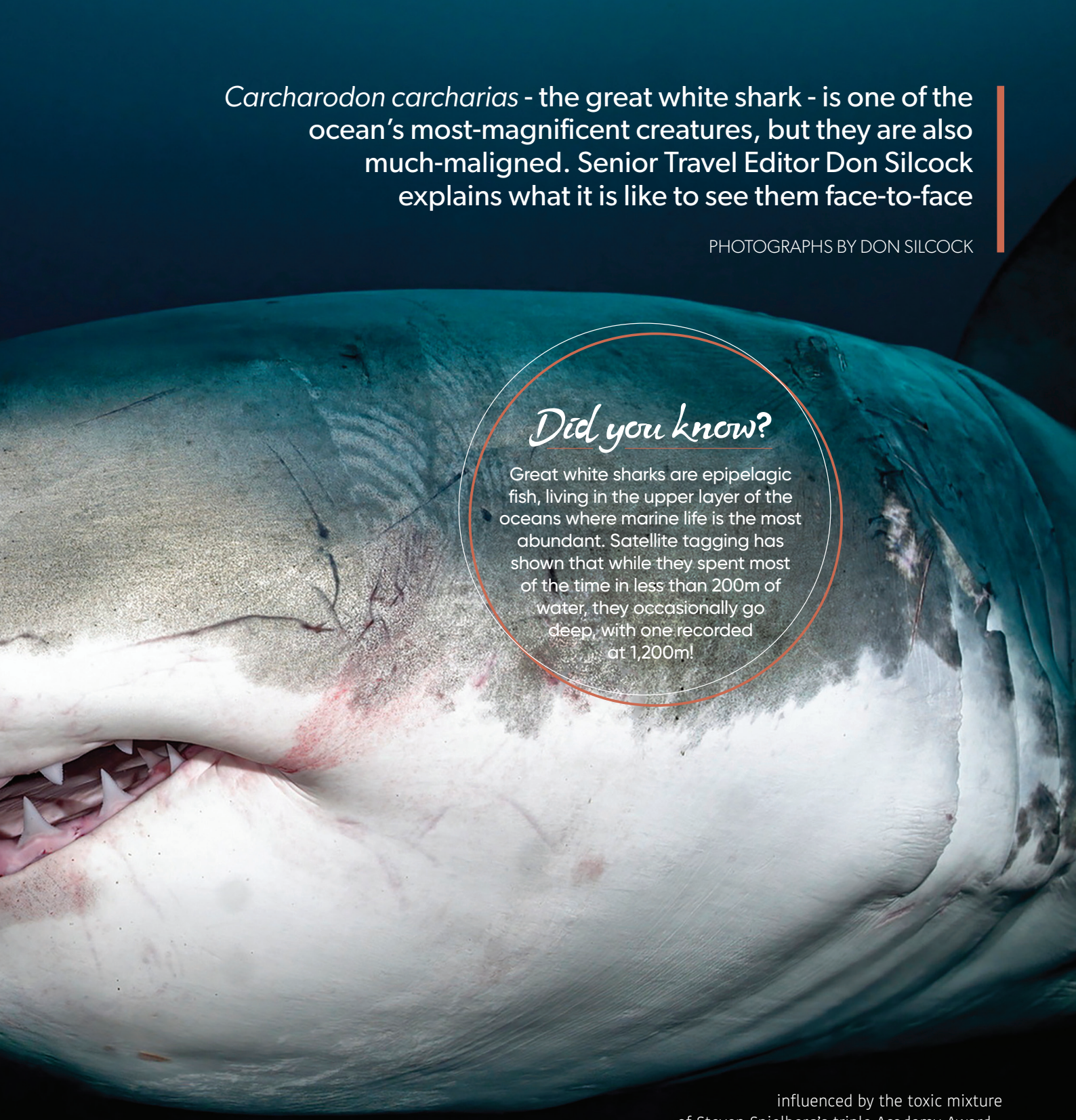
Great white sharks are present in almost all coastal and offshore waters with water temperatures range between 12°C and 24°C. Their largest known populations are found in the United States, South Africa, Japan, Chile, and... here in Australia. They are epipelagic fish, living in the upper layer of the oceans where marine life is the most abundant. Satellite tagging has shown that while they spend most of the time in less than 200m of water, they occasionally go deep – with one shark recording a depth of 1,200m. Why they do that, nobody really knows...

Here in Australia, great white sharks occur from northern Queensland, all down the east coast and around the south coast of Australia, up to the Montebello Islands in the north-west of Western Australia. Interestingly, the CSIRO have established there are two distinct populations – the east coast sharks, with an estimated total number of about 5,500, and a south-western population, whose total numbers have yet to be finalized but are thought to be around the same.

Overall, it seems there are probably around 11,000 animals in the roughly 20,000km of Australian coastline they are known

Carcharodon carcharias - the great white shark - is one of the ocean's most-magnificent creatures, but they are also much-maligned. Senior Travel Editor Don Silcock explains what it is like to see them face-to-face

PHOTOGRAPHS BY DON SILCOCK



Did you know?

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to roam. Our coastal waters are defined as 5.5km (3NM) from shore – so a total area of some 110,000 sq km. Which means, at best, one great white per 10 sq km of coastal water...

Clearly there are a lot of assumptions and averaging in that 'back of the beer mat' calculation - but you get the picture, they are not that common!

QUANTIFYING THE ENIGMA

Enigma: 'A person or thing that is mysterious or difficult to understand' – if ever one word could be said to describe the great white perfectly, I think it would have to be 'enigma'.

Our perception of the great white shark has been greatly influenced by the toxic mixture of Steven Spielberg's triple Academy-Award-winning movie Jaws and the tabloid media. Jaws was the first major movie to be shot on the ocean and was a huge success. The movie was based on Peter Benchley's book, which he wrote after reading about sport fisherman Frank Mundus' capture of an enormous shark in 1964.

The movie is said to have inspired 'legions of fishermen, to pile into boats and kill thousands of the ocean predators in shark-fishing tournaments' in what was called the Jaws effect. Benchley later stated that he would never have written the original novel had he known what sharks are really like in the wild. While Steven Spielberg created the Jaws effect, the tabloid media have run with it for decades – tapping deeper into the vein of fear in our psyche the movie mined so well.

Great white accompanied by trevallies

The facts are that you have a greater chance of dying from a bee sting than from a shark attack – in 2017/18, reliable data from Taronga Zoo shows that 45 people were involved in shark attacks and two died as a result. While, in the same period, data from AIHW shows that 927 people were hospitalized because of bee/wasp stings and 12 died. Such deaths are obviously tragic to all concerned, but when did you last see a bee sting death on the evening news or front page? The real travesty of all this is the way the media use a shark attack to provide cheap content!

UNDERSTANDING THAT ENIGMA

There is absolutely no doubt that great white sharks are completely unpredictable and potentially extremely dangerous animals. But... that is their role in the ocean, they are not some kind of satanically motivated killing machine! Their behaviour is driven by an instinctive capability to survive. And, as an apex predator, they do what they need to do when they need to do it, but with the ingrained caution and situational awareness their successful evolution has taught them.

Much of that instinctive behaviour seems to be driven by how hungry they are - which is a function of when they last ate and what they ate. Based on a ground-breaking 1982 US research paper, it was long believed that great whites can go for weeks before needing to feed. But a more-recent paper by the University of Tasmania (UoT), indicates that they actually eat much more often.

The difference between the two is that the first one used data from a tagged shark feeding on a dead fin whale to calculate how often it would need to eat. The premise of the UoT research being that the shark in the 1982 study had already found an abundant source of food. Therefore, its metabolic rate would have dropped as it worked leisurely on the 'all you can eat' buffet.

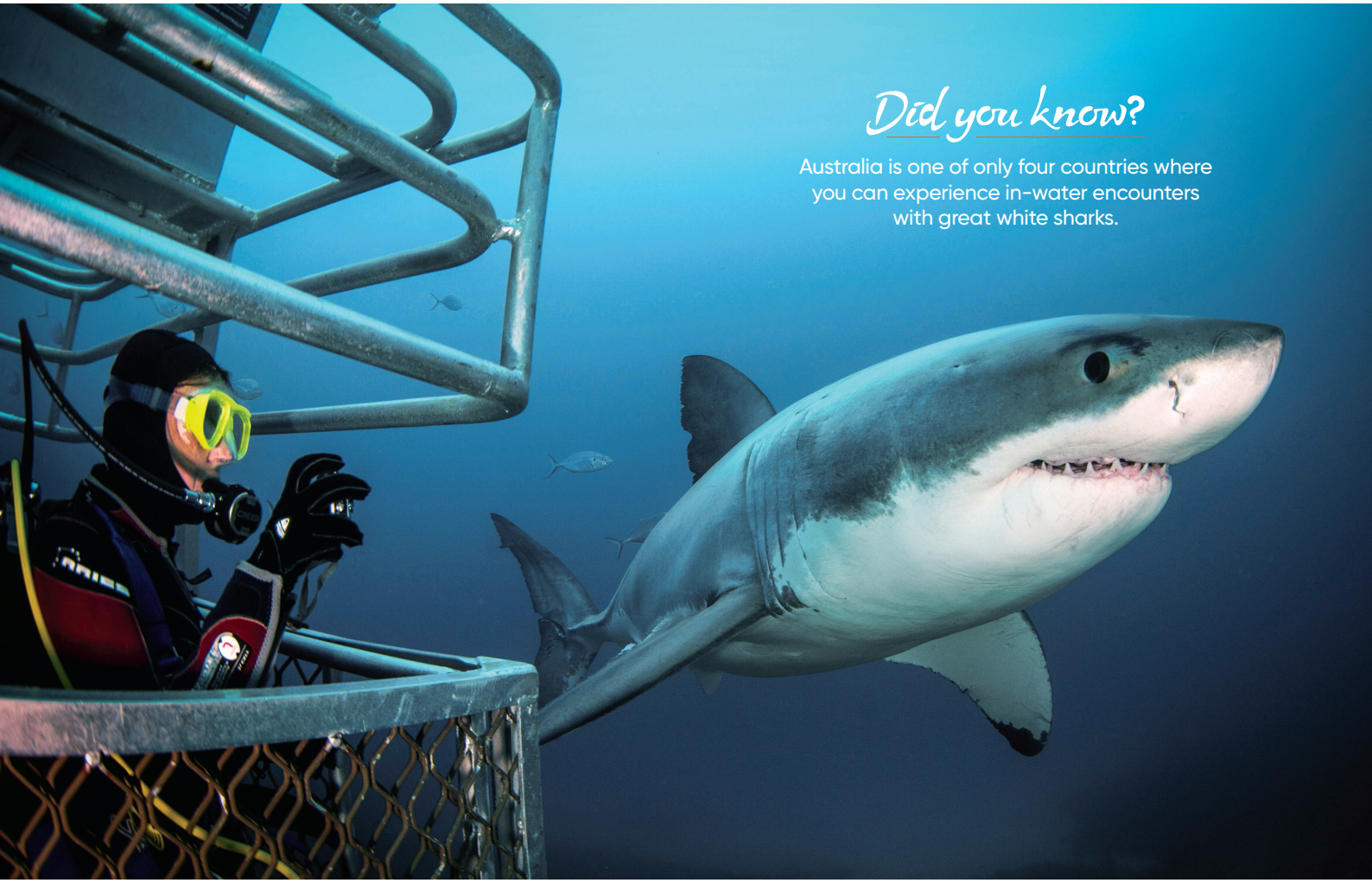
Preparing to lower the cage

The cage goes in

The Rodney Fox

HOW TO OCEAN FLOOR CAGE-DIVE

Rodney Fox Shark Expeditions is the most-experienced shark cage-diving operator in South Australia having started the whole thing back in 1976. They are also the only operator offering multi-day trips and expeditions, together with both surface and ocean-floor cage diving. Their newly refurbished, 32-metre-long expedition vessel the Rodney Fox has been designed to get you safely in the water with great white sharks and ensure the journeys to and from the Neptune Islands are both safe and comfortable!
www.rodneyfox.com.au



Did you know?

Australia is one of only four countries where you can experience in-water encounters with great white sharks.

> “Fully mature females are incredible creatures and can reach six metres long, but that additional metre practically doubles their body weight, making then an amazing, almost Jurassic-like sight to behold!”

So, they tagged sharks hunting for seals at the Neptune Islands in South Australia, recording a much-higher metabolic rate that would necessitate eating more often. The Readers Digest version of it all is that great whites probably need to eat every day when feeding on open-water fish like silver seabream. Whereas, when they can feed on to fat-rich seals, consuming one every two to three days is probably enough.

The bottom line being that the urge to eat and the availability of suitable food is probably the major driver of behaviour and great whites do need to eat quite often. How often is a function of the nutritional value of what they last ate. Seals are highly nutritious, silver seabream less so but still adequate, while humans provide very little nutrition and are simply not on the shopping list!

SEEING FOR YOURSELF

Australia is one of only four countries where you can experience in-water encounters with great white sharks – albeit from the safety of a custom-built cage. There is only one location though, the Neptune Islands on the edge of the Great Australian Bight, near the entrance to the Spencer Gulf. The islands are important locations on the great white ‘super-highway’ - their migratory corridor along the southern coast of Australia. The sharks have waypoints on that corridor where they should be able to feed and the large seal colonies on the Neptune Islands provide a very reliable source of high-nutrition food, particularly so during autumn and winter when recently weaned seal pups first venture out into open water!

Located some 40 nautical miles (74km) to the south of Port Lincoln, the islands were first sighted by Europeans in 1802 from HMS Investigator as the waters of South Australia were surveyed. They were named Neptune’s Isles for their isolation and because ‘they seemed to be inaccessible to men’. That isolation, the shelter the islands provide, and the large resident seal colonies make them an almost-perfect location for great white shark encounters.

Male sharks, which when fully mature reach up to five metres in length, are known to be present there all year round. The big females are more seasonal, arriving around the time the seal pups venture out alone in April.

Fully mature females are incredible creatures and can reach six metres long, but that additional metre practically doubles their body weight, making then an amazing, almost Jurassic-like sight to behold!

HOW IT WORKS...

Given the virtually constant presence of great whites at the Neptunes, and contrary to what you might expect, there are no guaranteed encounters with them. While the cage-diving boats are, in themselves, a tremendous source of stimulation - emitting significant noise and electrical signals that may attract curious sharks, 'attractants' (a.k.a. berley...) are also required. These days cage diving is carefully licensed by the South Australian government and, integral to those licenses, are the type and amount of attractants used. Long gone are the days when gruesome 'witch's cauldrons' of horse meat and whale oil were the order of the day.

A daily maximum of 100kg of strictly fish-based attractants is allowed and, if a shark actually takes a bait, there is a mandatory pause for 15 minutes. All of which is designed to allow the operators to get sharks to the boat and keep then there, but not to induce changes in their natural behaviour.

Overall, the rate for successful encounters is high, but the great whites are wild animals and the Neptunes Islands are not a safari park!

DOWN DEEP

Cage diving comes in two distinct flavours – surface and ocean-floor. Until last year all of my trips had been using a surface cage as that was the only option... It was a great one though, allowing me to see great whites in the flesh and up-close. Over time I moved from the mixture of intense trepidation and downright fear to seeing them as the magnificent creatures they are.

The catalyst for that change was the obvious caution of the older sharks, the seemingly reckless abandon of the younger ones and their overall behaviour patterns of the great whites. Basically, I realised that they weren't the rabid killing machines the tabloid media would have me believe. And I used to explain all that by saying that you need to see great whites in their 'natural environment' to begin understanding them. Then it dawned on me that if I really wanted to see them in their natural environment, I needed to get some experience in an ocean-floor cage, which led me straight to Rodney Fox who, together with his son Andrew, developed the whole concept.

Seals are on the main menu

The ocean-floor cage allows you to see 'natural' behaviour

The ocean-floor cage really is the closest you can possibly get to 'natural'. At the surface the sharks approach the cage because of all the stimulation present, whereas on the ocean floor their behaviour, approach and attitude is quite different.

Just like lions and tigers blend in almost completely with their surroundings, the great whites do the same. Viewed from above, their dark colouration makes them very hard to discern, while from beneath their white under-belly makes them almost invisible. They use this natural camouflage to great effect in the three-dimensional ocean and are able to appear at the cage almost unnoticed.

They seem motivated more by curiosity than anything else and your temporary immersion in their domain enables unique insight that is almost impossible at the surface. It truly is a special experience, and I cannot recommend it more highly if you really want to better understand the great white shark. ■

Get up close and personal

DON SILCOCK

Scuba Diver's Senior Travel Editor, in more normal times, Don is based on Bali in Indonesia, but is currently hunkered down in Sydney rediscovering Australian diving... His website **www.indopacificimages.com** has extensive location guides, articles and images on some of the best diving locations in the Indo-Pacific region and 'big animal' experiences globally.