

Photographing the Great White Shark

By Don Silcock

Very few creatures are as firmly embedded into the public's psyche as *Carcharodon carcharias* - the Great White Shark. It's reputation as a ruthless killing machine, prowling the depths waiting to pounce on unsuspecting surfers, swimmers and in fact anybody foolish enough to enter the water, is hard-wired into most people's mind.

The movie *Jaws* was largely responsible for the initial perception, but the sensationalist treatment of shark attacks by the news media have firmly entrenched it.

The reality is rather different as a quick look at the available statistics show – just 244 of the 1563 unprovoked shark attacks recorded on humans in the last 100 years are credited to the Great White Shark, according to the International Shark Attack File (<http://www.flmnh.ufl.edu/fish/Sharks/ISAF/ISAF.htm>)

Great Whites are indeed the apex predator - to use that rather clichéd phrase - but to appreciate what that really means and understand the extent to which they have mastered their environment, you have to see

them in it.

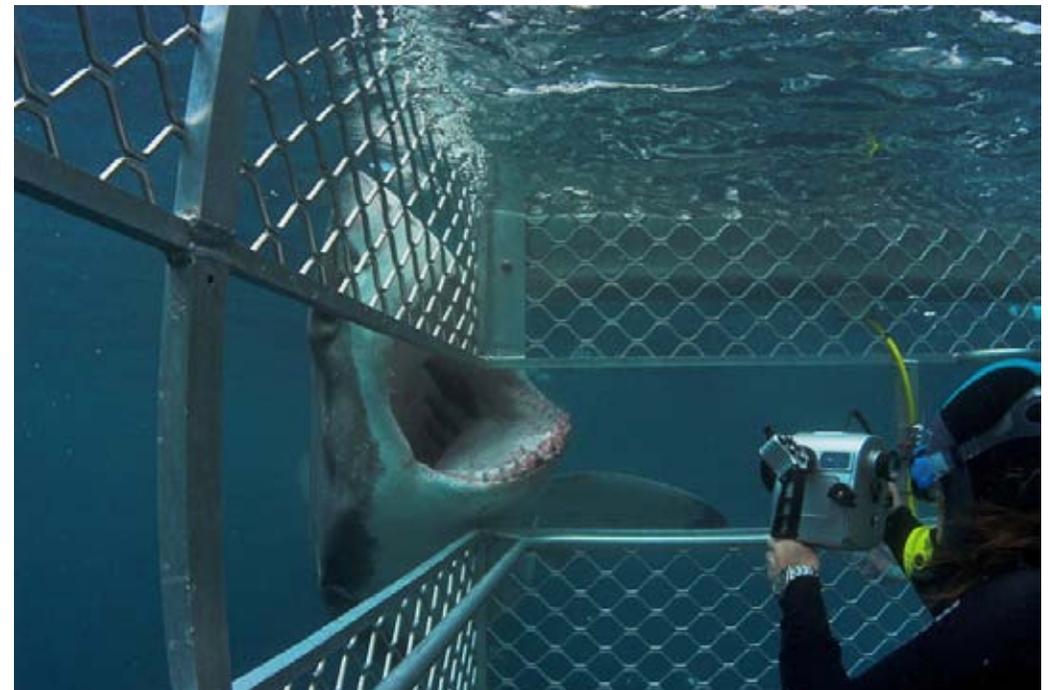
To photograph these magnificent creatures is, in my opinion, a “must do” experience for an underwater photographer.

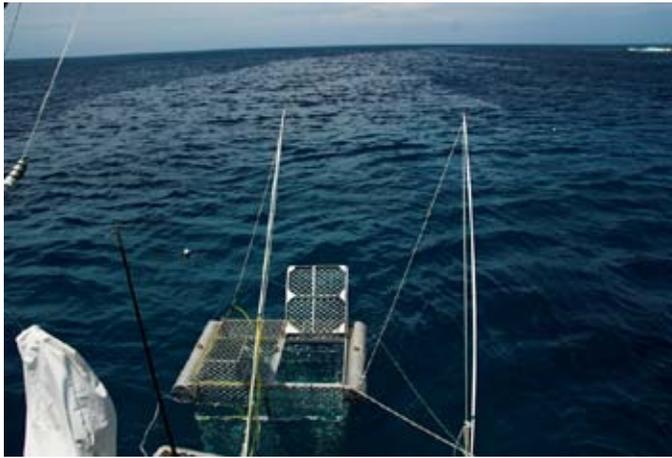
Great White “Hot Spots”

Great Whites inhabit all the temperate marine waters of the world but given their relatively small & declining global population, and the sheer size of the ocean, the chances of actually seeing one is extremely small. Add to that the fact that if you did see one in the open, you would probably be more concerned with survival than photography, the probability of obtaining a great image diminishes to almost zero...

(Top) D100, Subal housing, 15mm Sigma, shutter priority -1/180 @ f9.5; The apex predator

(Right) D100, Subal housing, 15mm Sigma, shutter priority -1/125 @ f9.5; Great White in a bad mood!





Which means that to photograph a Great White, you have to go them and there are currently three main locations where it is possible (albeit from the safety of a cage) to see Great Whites in the natural environment – the Neptune Islands off South Australia, Dyer Island southeast of Capetown in South Africa and the Mexican island of Guadalupe Island off from Baja California.

All three locations support a large resident colony of seals, the high fat food of choice for Great Whites... They also support a number of companies who offer expeditions to cage dive with the sharks that gather there - a methodology first developed by the Australian husband & wife team of Ron & Valerie Taylor back in the late 1960's.

My experience is limited to South Australia, but I have done several trips over the last 13 years and enjoyed every one – even the ones where we saw no sharks, because the whole deal is such a unique experience!

The Technique

In South Australia a combination of tricks



are used to bring the sharks into the boat and the first one involves tuna oil, which is used to entice the sharks into the general area. The tuna oil is contained in a plastic bag, one of which is suspended over each side of the boat so that it just floats on the surface and the bags are pinpricked so that the tuna oil leaks out and forms a slick on the surface.

When viewed at sunset, it's very clear why the oil works so well – the slick literally stretches for as far as the eye can see and if there are Great Whites in the area their ultra sensitive olfactory sense will pick it up and their innate predatory instinct draws them to the source.

The next trick is liberal doses of a special burley brew thrown into the water at the back of the boat. This gruesome concoction is a mixture of minced tuna gills & lips and tuna blood, which looks, smells and tastes (yes, tastes...) absolutely awful!

The final parts of the trilogy are large chunks of tuna suspended on floats about 10m behind the boat and when one these baits is taken everybody knows the guest of honor has arrived. It's also the



(Left) D200, 18-200 Nikon, shutter priority - 1/320 @ f8; Tuna oil “power slick”

(Centre) D100, Subal housing, 12-24 Nikon, shutter priority - 1/125 @ f4.8; Great White Shark lunch...

(Right) D100, Subal housing, 15mm Sigma, shutter priority - 1/125 @ f4; Great White in full attack mode...

signal to get geared up and in the cage, ready and waiting at the back of the boat, having been lowered in the water soon after arrival.

In The Cage

The shark cage consists of two large sealed stainless steel tubes to provide flotation and then a box, large enough for four large people & constructed of the aluminum mesh normally used for house window screens. It has two viewing areas going right round the cage - one is at head height and the other at knee height. These viewing areas are about 10” wide, which is enough to poke your camera through, but only big enough for a shark to

get it's snout in but not its lower jaw – so it can't bite, which I considered a fundamentally good design concept!

To use the cage, each of the occupants must be heavily weighed down so that you can stand on the cage floor and either special weight harnesses or multiple weight belts are used. The harnesses tend to concentrate the effect of the heavy weights on your shoulders and quickly become uncomfortable, so I always opt for the multiple weight belts.

If there is any real danger associated with cage diving, it's the excessive weighting that creates it and the entry & exit from the cage is in reality as dangerous as it gets. Two things could go wrong; either you slip & fall into the water, not a good idea as all the weight you are carrying would send you to the bottom before a shark could get you.... Or a shark breaches onto the cage as you are entering or exiting – neither of which has ever happened by the way...

Scuba is not used, instead there is a hookah system from the boat which supplies four regulators with long hoses in the cage.

Entering the cage for the first time is an experience you will never forget and is mixture of sensations consisting of fear & excitement, queasiness from the smell of the burley - combined with its taste once you are in the water! Then the cold water starts to chill you as you struggle to get in position at the viewing window, remembering the instructions to keep your head & arms inside the cage, while realizing that the choppy seas are the reason you are bouncing about so much.

But all these feelings are disappear in the first burst of adrenalin when first shark appears at the viewing window!

Simply stated, being in the water (albeit from



D100, Subal housing, 15mm Sigma, shutter priority - 1/180 @ f9.5; Got those arms in the cage?

the safety of the cage) with a Great White shark is one of the most exciting big animal adventures you can possibly have. It's only when you see them in their own environment that you can fully appreciate how much they have mastered it and truly become the "apex predator".

Their two-tone coloration makes them very difficult to see when viewed either from above or below, but when you do see them it's clear to see the sheer brute force they possess. They seem to move through the water as if self-propelled, almost like a submarine, but when alarmed or excited a flick of their powerful tail thrusts the large streamlined body forward at quite amazing speed.

The Sharks

It's a commonly held belief that all that is required to turn a shark into a frenzied & pitiless killing machine is some blood in the water. Combine this with the fact that sharks have a highly



D200, 18-200 Nikon, shutter priority - 1/125 @ f14; Cage flotation chambers showing Great White Shark wear & tear!

developed sense of smell, and the perception is created that a minor cut underwater is an instant death warrant!

However, when you see the great white in the presence of blood, burley and large chunks of "free" tuna, it makes you realize that they are really the apex hunter rather than a crazed killing machine! The larger & older sharks are actually very cautious in their approach and will cruise past the tuna multiple times before they will actually go for it. It soon becomes obvious that they are looking for potential danger and whether they go for the bait seems to be a function of how hungry they are.

White sharks are believed to go for days, possibly weeks, without feeding – mainly because when they do feed, it's on high fat creatures such as seals that provide a tremendous source of sustaining energy. Therefore, whilst their innate predatory senses bring them towards the source of the tuna oil slick, whether they actually take the tuna baits seems to be a function of when they last fed.

If it was long enough ago the shark's hunger overcomes its caution and it will take the bait. If not, the shark's appear to cruise the area till they have assessed the situation and then continue their journey – where to, nobody really knows...

The younger sharks are definitely more aggressive & willing to take a risk and are also the ones that can provide the biggest surprise as they often approach the cage from below, where you are least expecting them to come from and the main reason it is drilled into you that you must keep your arms inside the cage if you want to go home with them!

Getting the Images

So there you are in the cage and finally face to face with the main attraction, surely it's now just a case of point & shoot and the next stop is the front cover of National Geographic - right?

Well, as I came to appreciate, it's not that easy and there were a combination of psychological, physical and technical challenges to overcome.

Technically it's a combination of dealing with a fairly fast moving subject in changing ambient light as the shark maneuvers around the cage. Even when the Great Whites are moving slowly, their pace through the



F100, Subal housing, 15mm Sigma, shutter priority, - 1/250 & f5.6; Great White in full attack mode...

water is still quite rapid and so a high shutter speed is required to freeze that motion and get sharp results.

It's difficult to use a strobe in the cage because you need to be able to poke the housing through the viewing area when the moment is right, but quickly & easily retract it should one of the sharks get too close... With all the blood & burley in the water, to use a strobe effectively it would really need to be extended well away from the housing to avoid a lot of backscatter, which would prove to

be very cumbersome and difficult to maneuver.

What I found worked the best was to set my camera for shutter priority metering mode, with a shutter speed of 1/250 of a second, and allow the camera to set the aperture automatically. A second or third generation DSLR, such as a Nikon D300 or equivalent, with a 5 FPS frame rate or a film SLR with a built in motor drive like the F100 is the best choice of camera – for reasons I will explain.



D100, 12-24 Nikon, shutter priority - 1/125 @ f11; Great White Shark lunch, maybe...

The lenses I have used most were the Nikon 10.5mm fish-eye on a DSLR and the Sigma 15mm fish-eye on the F100, because when the sharks come in they come close and they are big - so you need a really wide lens to get all of their body in the frame.

The average great white you will see there in South Australia is 3-4m in length, and the biggest I have personally seen was a 5m monster – so the fish-eye really is needed!

Composition

I was really disappointed with the film images from my first trip to South Australia as I had repeatedly cut-off half the shark's body out of the overall image. But it was not until I did a trip with a DSLR, and was able to review my images while in the cage, that I realized what was wrong.

Underwater, the eyes of a Great White appear to be a black & featureless void which draws you to it automatically, and I realized that I was aiming the camera straight at it and cutting off the body of the shark every time. It's almost as if the shark is hypnotizing you, so magnetic is the pull of the eye and I had to force myself to concentrate on getting the complete shark in the frame whenever possible.

Physically the challenge is to somehow wedge yourself in position so that you can hold your camera properly whilst keeping your arms & elbows inside the cage. Easier said than done when the cage is bobbing about in the chop, but it's extremely difficult to compose and get a good shot unless you can master this. I found the most "comfortable" position was in the corner of the cage with my elbow wedged down inside the grab rails on the inside of the cage.

The most dramatic shots of the Great White is probably when it's going for the bait and has switched into it's "full attack mode", with it's snout up, lower jaw depressed & upper jaw extended to expose it's teeth & gums in a hideous fashion – all to achieve the maximum opening of it's mouth, so it can seize it's prey. This sequence of events has actually been timed at between 0.75 and 1.78 seconds, which combined with the fact that the shark is moving like a speeding train will explain why a camera with 5 FPS frame rate and fast auto-



D100, Subal housing, 15mm Sigma, shutter priority - 1/180 @ f8; The apex predator

focus is needed.

The key to getting good images is a combination of the technique described above, being in the right position in the cage and a good shark wrangler on the back of the boat!

A good wrangler will know exactly how to give photographers the show they are looking for, with the tricky part getting a Great White to cooperate! What happens is that the tuna bait hang on a float, attached to a rope, and when the shark makes a move towards the bait the wrangler on the boat pulls it towards the cage and the waiting photographers.

Sometimes the shark will lazily pursue the bait with mouth half open, looking like it's considering a quick snack, but if you are lucky a hungry shark will decide that it's mealtime and really go for it. Often the shark will get the bait before it reaches the cage, which means the bait is in the image – OK, but not as good as the image without the bait...

If you are really lucky, the shark will go in



D100, 12-24 Nikon, shutter priority - 1/180 @ f9.5; Sydney photographer & all round good guy Brent Hedges climbing out of the cage.

full attack as the bait is pulled in to your corner of the cage so that you can capture the shark really close but without the bait in the image because the wrangler has just pulled it out of the water over the top of the cage.

This is basically as close as you could possibly get to a Great White in full attack mode and live to tell the tale – a truly adrenalin intensive experience! But there is even more to come, as the shark will often vent its frustration on the cage by biting it and shaking it from side to side.

When that happens you truly understand the sheer force these incredible creatures possess and why they truly are the apex predator!

Don Silcock

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