

Whale Photography *for* Whale Watchers

***"Look sharp, all of ye! There are whales here-abouts!
If ye see a white one, split your lungs for him!"***

Herman Melville (1819 – 1891)

Whale Talk

Australians love the ocean as if it was calling to them. But if the ocean is calling, a big part of the call must be the call of the whale song. Few are fortunate enough to have listened to a whale singing, but when this music filters into your senses and your soul, you are changed, as a person.

Each whale group (in scientific terms, 'feeding group'), has a different song of the deep that speaks of their ancient, mysterious language. It is passed on to the genetic memory of future generations, but how this happens is not fully understood by marine biologists or whale researchers. Recordings of these songs are used to identify individual whales, and possibly individual pods of whales, as they navigate their particular oceans. Only the males sing, to attract potential mates, while females make grunting social sounds. These melodious songs are loud enough to be heard through the hull of a small boat without the aid of sophisticated underwater microphones.

Photographic records play a more important part in (i) our understanding of changes to whale populations and whale migration paths and (ii) informing us about the need to protect these precious mammals. Just as you and I have a unique 'fingerprint', so, too, do whales. This is found in the widely varying shapes and markings on each side of their dorsal fin and in the shape and colour patterns on the underside of their tail or flukes. Tens of thousands of such whale 'fingerprints' exist in whale research centres around the world and none more so than here in Australia.

Approximately 25,000 humpback whales migrate up and down the coast of Western Australia each year. Another 15,000, or so, do the same on the east coast. These migrations are very predictable for both coasts. The migration north, from the fertile feeding grounds of



The Fingerprints of a Humpback. Canon 5oD EF100-400 f4.6-5.6 IS, 1/1500 second @ f5.6 ISO 320

the Antarctic, to the sheltered breeding grounds in our northern waters, occurs during May to late June, whilst the return journey south takes place during August to November. The breeding grounds have been pretty well identified on the west coast, but no specific breeding ground has been identified on the east coast.

Australia is visited each year, not only by humpback whales, but by other whale species that include pygmy blue, dwarf minke, southern right, brydes, sperm, fin and sei whales.

But, how do you go about capturing some really sharp images and especially that ever elusive, always unpredicted, whale breach image?

Equipment Selection

Having photographed approximately 1000 whales over the last five years I have decided on a 'best selection' of equipment (at least for me). I use Canon equipment, but the observations that follow should apply equally to other respected brands.

Photographing whales is, in essence, wildlife photography and the types of equipment best suited for this genre are good for whale photography. To capture



Whale Breach in Early Evening Light. Canon 1D Mk3 EF70-200 f2.8L IS, 1/4000 second @ f6.3 ISO 400

sharp images I believe, as a minimum, that the following two items of equipment are required:

- a camera with a high-speed continuous shooting mode (i.e. the fastest 'number of shots per second' possible), and
- a light-weight, telephoto zoom lens, having a range of around 100mm to 400mm and 'image stabilization', or its equivalent in non-Canon brands ('IS' on Canon, 'VR' on Nikon, 'VC' on Tamron, 'OS' on Sigma)

Whilst participating in humpback whale research, in conjunction with the Centre for Whale Research, Western Australia (<http://www.cwr.org.au/aboutus/goals.html>), I have photographed whales with many other focal length lenses, including 200mm, 300mm and 400mm fixed telephoto. I have abandoned them in favour of the Canon 100-400mm f/4.5-5.6 L IS USM lens (See Alex Cowley's zooms article in this issue - ed). Although the latter is clearly not a fast lens, I am nearly always using it in good light conditions and it is now my 'workhorse' lens for whale photography. I can carry it all day long without my arms becoming fatigued. It gives me sufficient range that I do not have to change lenses in a salty, wet environment. It also allows me to 'ballpark' the focus, to further speed up shooting – this is great for optimizing my chances of capturing 'decisive moment' action shots. I use it for static shooting (when whales are just milling around, a mother is feeding a calf or sleeping on the surface), and for active shooting when whales are being inquisitive and come quite close to the boat, moving

through the water at speed, tail slapping, pectoral fin slapping, diving, breaching, or when a pod of spirited males are just 'horsing around'.

I use a telephoto zoom lens because I can fill the frame with whale quickly and generally easily. As whales move rather slowly (relative to say birds-in-flight or most other active wildlife), I have time to optimize composition – in most cases. The exception to this is when a whale breaches; generally there is no warning sign and I cannot call for a 'replay'. I will provide some guidelines for maximizing the chances of capturing a breach shot later.

My camera is a Canon 1DMkIII, which has a continuous shooting speed of 10 frames per second (fps). The recently released Canon 7D (8 fps) and its less expensive sibling the Canon 50D (6.3 fps) are also excellent cameras for whale photography. As we go to print the new Canon 1DMkIV is becoming available with a top speed of 11fps!

Camera Settings

Offering advice on 'best' camera settings is synonymous with starting a spat among photographers. In addition to what I outline below, my best advice is to speak to other whale and wildlife photographers, try what you can of their equipment selections and camera settings and then select what works best for you. Experiment until you are comfortable with using a camera/lens combination that suits you and your budget.



Young Humpback 'Spy Hopping'. Canon 1D Mk3 EF100-400 f4.6-5.6 IS, 1/2500 second @ f6.3 ISO 400

Capturing close-up images of whales always involves photographing from the moving deck of a boat. Relative to photographing on land this introduces different and more difficult shooting challenges. To help deal with these challenges I use the following settings (apologies to Nikon users, all in 'Canon-speak'); they work reliably for me:

Lens – set to autofocus (AF) mode, image stabilization to 'On' and at 'Position 1' (this position helps eliminate lens shake in all directions).

Camera AF Mode – set to AI Servo mode. This is necessary when the focusing distance keeps changing. Holding the shutter button down halfway means the whale will be focused continuously. This mode gives me the best chance of capturing a correct focus at the instant of exposure.

Camera Drive Mode – set to 'high-speed continuous shooting'. The camera will shoot continuously when I hold down the shutter button fully and will continue to capture images until the internal buffer memory becomes full. How quickly the buffer fills depends solely on the type of compact flash card I use. I always shoot in raw and use 8 GB Sandisk Extreme IV UDMA cards, which boast a write speed in excess of 40MB/sec. With the Canon 1DMkIII, this gives me a maximum 'burst' of around 30 shots, or three secs of continuous firing. All whale breaches will be well and truly over within half of this time! If I don't get a number of sharp, useable images from the 30 or so captured, it is not the fault of my equipment. Of course, if I shot in jpeg mode, I would not fill the buffer as quickly. I will soon commence using the new Sandisk Extreme Pro cards that claim a write speed of over 90 Mb/sec.

Camera AF Point Selection – for general shooting I use 'single/centre point' AF point, i.e. only the centre focus point is active and the camera will automatically select the optimum AF position to suit the shooting conditions. In calm waters, when I can, focus directly on a whale's dorsal fin or flukes, I sometimes use the automatic AF point selection mode as it covers a wider area into which the fin or flukes may move. This save me having to pan while shooting.

Camera Metering Mode – set to 'evaluative metering'; I find this is suitable for most conditions, even backlit whales.

Camera Exposure Control – set to 'Av: Aperture-Priority AE'. Because depth of field is generally not a priority for me in whale photography I nearly always shoot at, or close to, the widest aperture on the lens. In Av mode the camera will automatically set the shutter speed, but I keep a sharp eye on this as I hardly ever photograph whales below a shutter speed of 1/1000 sec and mostly at 1/1600 sec. These high shutter speeds help overcome the difficulties introduced by the rocking boat and the moving whale. Other experienced whale photographers use 'Tv: Shutter-Priority AE' mode, set the shutter speed at around 1/1600 sec, the ISO to auto mode, and allow the aperture to take care of itself. These settings are an alternative, worth trying and can produce good results.

ISO – I never shoot below ISO 400 and I change the ISO value upwards to ensure the shutter speed is generally not less than 1/1600 sec. As light conditions change rather slowly on the ocean, I always have time to attend to this.

The above settings have been tested and refined whilst photographing from the deck of my fifteen meter yacht, 'Calypso V', and from a 6.5 meter centre-console inflatable boat. Compared to photographing from a yacht, or a typical 'whale watch' boat, such smaller boats are very 'bouncy', even in moderate seas (say up to 12 knots of wind), making the challenge more exciting. It is not sensible or enjoyable to continue photographing whales from a small boat when the wind blows above 15 knots. It is time to head back to shore.

However, the equipment by itself will not produce sharp images. A good shooting technique and an understanding of whale behaviour are imperative.

Shooting Technique and Whale Behaviour

Attempting to photograph whales whilst sitting in a boat is just about impossible. There is too much movement over which I have little or no control. It is best to stand with knees slightly bent to act as additional 'shock absorbers'. When standing, I brace myself against some solid part of the boat, and have both hands free and camera ready to react rapidly to the unexpected appearance of a whale. With whales I have learned to expect the unexpected.



Clockwise: Young Whales at Play, "Tail Slapping". Canon 1D Mk3 EF100-400 f4.6-5.6 IS, 1/2500 second @ f6.3 ISO 400. A Massive Humpback Displaying its Power. Canon 1D Mk3 EF100-400 f4.6-5.6 IS, 1/2500 second @ f5.6 ISO 400. Classic Display by Humpback when Diving. Canon 5oD EF400f4 DO, 1/2500 second @ f6.3 ISO 400.

Once I spot a whale, or better still, a pod of whales, I am prepared to start photographing with the camera up to my eye and not hanging by its strap around my neck. This can be a little tiring if I am photographing for many hours, but the results are worth the discomfort.

At sea, I have learned to photograph with both eyes open as a whale often surfaces outside the focus area of the viewfinder. This is contrary to how I photograph moving subjects on land. When photographing a humpback mother at rest, or pectoral fin slapping, it is not surprising to find the calf engaging in 'spy-hopping' around the head of the mother, to check things out. The calf's head and part of its body will rise vertically out of the water, making for a nice parent/offspring composition

Frequently a mother and calf will be accompanied by an escort male who may demonstrate his 'protective' prowess by placing himself between the boat and the mother and calf, or engage in a display of 'tail slapping'. He may surprise and delight with an awesome display of his fluke as he dives. Or he might leave me speechless with a totally unexpected breach. I would miss all of these opportunities if I focus with one eye closed as I do on land.

Whales that are obviously in migration mode provide good opportunities for a fluke shot, particularly from directly behind. They are usually travelling fast, dive, come up for air in a spout of spray, and then dive again. The period they stay underwater varies, but I anticipate a resurfacing every fifteen minutes or so. After one or two dives I begin to see the familiar pattern of diving for that

whale and determine how much time I have to focus on the fluke. I keep shooting as the fluke rises out of the water to the horizontal knowing I will likely be rewarded with the classic 'waterfall' shot. I continue to shoot to capture the full width of the fluke as it reaches its zenith, pointing vertically into the sky and filling my frame

On calm days whales sometimes engage in pectoral fin slapping. Often this will be heard from a distance, well before I see it. The noise is startling when heard for the first time. Here, usually, I have time to pick my shots as this behaviour can continue for twenty minutes or more, non-stop. Regularly, there will be a calf nearby, sometimes trying to emulate this parental behaviour. In the right light conditions, especially at dusk, positioning the boat between the setting sun and the pectoral fin



Magical Waterfall from Flukes in Golden Light. Canon 1D Mk3 EF70-200 f2.8L IS, 1/1500 second @ f6.3 ISO 200



A Vertical Dive by 40 ton whale. Canon 5oD EF400f4 DO, 1/400 second @ f4 ISO 400

gifts me with glorious golden colours reflecting from the sparkling white underside of the enormous pectoral fin.

If I am fortunate enough to be nearby when whales put on a display of tail slapping, especially younger whales, I prepare for a series of nice action shots. The whales seem to compete with each other to see who can produce the highest backward ascent out of the water, then perpetually slap the water as they descend, repeating the performance again and again. It is not uncommon to find several whales in a pod doing this simultaneously.

That Elusive Breach Shot

For some inexplicable reason, humpback whales in particular, always breach when I am about half a kilometer away! I have no explanation for this.

However, occasionally, the planets do line up and I will be found by a whale that simply wants to put on a show. That is right, the whale will find me. It will come to me. They are the most inquisitive of creatures and when a whale is in the mood to play and perform I feel blessed indeed. My adrenalin rushes to new heights.

As soon as the play starts I commence shooting and continue as if every shot will be my last opportunity to capture the spectacle before me. It will take at least two breaches just to appreciate the speed at which these



Whale Breaching So Close the Boat is Doused. Canon 1D Mk3 EF400f4 DO, 1/3500 second @ f6.3 ISO 400



Pectoral Fin slapping Lesson for Juvenile. Canon 5oD EF100-400 f4.6-5.6 IS, 1/2000 second @ f9.5 ISO 320

mammals move to launch their massive bodies so far out of the water. I have seen experienced landscape and other photographers being so stunned by the spectacle that they forgot to take a single shot! I have also learned from bitter experience never to take the viewfinder from my eye, or my finger off the shutter button. I never speak to anybody on board. This is not the time for idle chatter, checking histograms, self-congratulatory gazing at earlier images in the LCD, or deleting earlier shots.

As soon as I see the whale's head emerge from the water, I focus instantly on it, pan upwards, quickly, all the time firing at 10 fps, in continuous mode. The camera frame becomes a blur. Soon, the whale will reach a point where it will cease its upward trajectory and collapse sideways, creating an almighty upheaval of spray, an awesome display in itself. I may fire off thirty shots until the buffer fills

On very rare occasions, and only when I have appeased King Neptune and all the sea gods are smiling on me, an adult whale will lift its complete body out of the water; its black back away from my lens, its white or pink underbelly glistening, its two pectoral fins nearly vertical, clumps of yellow barnacles seemingly afire, turn to a horizontal position in mid air, water cascading everywhere, hang as if suspended there for what seems like ages, and then collapse back into the water with the loudest noise I will hear for that day. This is the pinnacle shot for whale photographers; a treasured image and one that makes the many journeys to sea worthwhile. If you witness this exhibition, and you manage to capture even a single sharp image, celebrations are in order!

A Few Boat Ethics When Photographing Whales

Unless it is being undertaken for legitimate and approved scientific research purposes (e.g. tagging whales with GPS transponders, photographing such research, and the like), chasing whales in boats is a cardinal transgression of photographic ethics.

If approaching whales in my own boat, dominant in my thinking is that the whale's main sense of detection is not sight, but sound. I do not deliberately take my boat in front of a whale or go too close directly behind it;



Terns Being Blown Away by Humpback Calf. Canon 1D Mk3 EF100-400 f4.6-5.6 IS, 1/500 second @ f5.6 ISO 800

both actions frighten the whale. Instead, I move parallel with their path of travel or with the length of their body if they are at rest. Every action on the engine throttle transmits my intention to the whale(s). I keep the engine revs low and don't accelerate or decelerate quickly or unexpectedly. I don't put the engine into reverse to stop; instead, I let the boat glide slowly, slowly to a stop.

Infrequently, I am rewarded with a time that is special; a whale will 'invite' me to briefly enter its world. On these occasions, I don't shut off the engine; the sudden absence of the engine noise simply confuses the whales and makes them wonder where I went. It is best to drift quietly, be careful not to drift too close, watch, and just photograph. The whale will decide when and if it becomes uncomfortable with my presence and then slowly and gracefully glide into its world of the deep, hopefully rewarding me with a beautiful tail image.

These gentle giants of the ocean never display aggression towards any other species.

Thought Bites of a Whale Photographer

How surreal it is to happen upon a fifteen meter adult whale, and be allowed to unhurriedly drift on the wind ever closer to it, as it sleeps effortlessly on the surface, its young calf resting across its head. How privileged I feel to be able to silently record this intimate time with parent and offspring.

In late evening light, on a glass-like sea, I witness another mother and calf at rest, but this time the spectacle is augmented by a flock of terns, their wings rimmed by gold, landing on the humpback's mammoth back. There they rest, until their reverie is disturbed by the calf's nudge, and a startling spout of spray, perhaps reminding mother it is feeding time. The golden water spout of the young humpback adds an ephemeral dimension to the flight of the terns as they scatter in surprise. This kind of photography kindles my heart and reaches deep into my soul. I wonder if any of my images will truly capture the breathtaking treasure of nature, before me

I have photographed a mother and calf swimming slowly right under my yacht, not once but several times, over and back, coming so close, I am left speechless. On the first pass I am anxious about my own vulnerability in their mysterious world. The parent must weigh over forty tons, but my reservations are unwarranted. The blowholes of this fourteen metre whale fill my frame as it gently surfaces within two metres from my yacht. It stays there for a long time, as if it is inviting me to photograph to help save it and its species



Massive Humpback Collapsing from Mighty Breach. anon 50D EF100-400 f4.6-5.6 IS, 1/2000 second @ f9.5 ISO 320

A whale's great strength of presence has little to do with its vast size. I always feel obliged not only to photograph it with my eyes, but with my heart. I feel a kinship with it. I, like it, came from the sea. Thankfully, today, most people on our planet celebrate living whales. You can be part of this celebration. There is nothing quite as gratifying as seeing the spark of life in the eyes of a new photographer, on my yacht, when they see their first sharp image of a forty thousand kilogram humpback whale in their own LCD screen as they exclaim, "Oh my God, did I really photograph that!"

I extend my thanks to Curt Jenner, Centre for Whale Research, Western Australia for his assistance with the editing of this article. See <http://www.cwr.org.au/aboutus/index.html>

