Depths of success

In his native Norway **Audun Rikardsen** is a professor in freshwater and marine biology, but to his nature and wildlife photographer peers he is the one to beat. **Keith Wilson** talks to him about killer whales, split pictures and trashing Canons

In less than three years, Professor Audun Rikardsen of the University of Tromsø has been named the overall winner of no fewer than seven international wildlife and nature photography competitions, including Nature's Best, the Global Arctic Awards (twice) and the Oasis photo contest, his most recent success. He is also the current European Wildlife Photographer of the Year and holder of the Fritz Pölking Prize – the first photographer to be awarded these accolades in the same year. Admittedly, he hasn't yet been named overall winner of the prestigious London-based Wildlife Photographer of the Year competition, but in 2015 he won the portfolio category, possibly the toughest in the competition, and many expect his name to be called when the 2017 winners are announced in October. His extraordinary run of success is even more remarkable when you read this one salient fact: Audun Rikardsen only picked up his first DSLR in 2009 and had his first competition success just two years later.

Below: A brown trout returns to spawn in an Arctic river. One of the images from Rikardsen's winning portfolio category in the 2015 Wildlife Photographer of the Year
Canon EOS-1D X, Samyang 14mm f/2.8, 35secs at f/22, ISO 640, 2x Canon 600 strobes

Rikardsen is not your stereotypical professor; he is a tall, lean man with a shaved head, a big smile and an eye for a good single malt. He lives and works on the northern Norway coast near Tromsø, above the Arctic Circle. This is where he has always lived and where he finds inspiration for his photography, but he remains first and foremost a scientist. 'I try to use my pictures in my science and it works the other way – I use my science to take the pictures that have stories to tell. My photography has evolved since I started in 2009. The first year was just about getting a nice picture and now it's more about telling a story, in a single image as well as a series of pictures.'

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As a marine biologist, Rikardsen's fieldwork has taken him all over the northern Atlantic, from Norway to Greenland. But it is the freezing Arctic waters close to his home where he has developed an intimate knowledge of the movements of the whales, seals, herring and salmon that abound in these waters. It was on a field trip with fellow scientists to Bear Island in the Barents Sea that he took up his first photographic challenge. He recalls: 'A colleague had a Canon 5D Mark II and a 500mm lens, and I challenged him by saying, "I'm going to take as good a picture as you. It's not about the equipment – it's about the person behind the camera." I was using a Canon PowerShot! It was a real awakening for me and it was really good to see the difference, so I bought a 5D. That was autumn 2009 and it was my first digital SLR.'

Today, Rikardsen's kit includes a multitude of Canon EOS bodies: 7D, 6D, 5D Mark III and IV, 1D X and 1D X Mark II, as well as a full complement of Canon L-series and Tamron lenses from an 8-14mm ultra-wide zoom and 90mm macro to 100-400mm and 150-600mm telephoto zooms.

Mixing art and science

Despite his growing reputation as a photographer, Rikardsen continues to work as a full-time scientist, but his studies and experiments sometimes provide the inspiration for his photographs, including one of a humpback whale fluke (overleaf) and another of a sea trout (left) that formed part of his winning portfolio in the 2015 Wildlife Photographer of the Year competition.

Above: A killer whale approaches a herring boat as it hauls in its catch. Part of the award-winning portfolio in the 2016 Fritz Pölking Prize
Canon EOS 5D Mark III, 11-24mm f/4L, 1/200sec at f/6.3, ISO 640

'For that picture of the whale fluke, I started off by making a flash system for taking ID shots of the whales and then I thought, "This is working quite well – I can do more of this." Also, with the sea trout in the dark, I know that river intimately, so I know where to find the fish, when to find the fish, and as a scientist I know how to attract the fish with light. I use the same methods that I use as a scientist, so having the background as a scientist I think was very important for making that picture.'

The knowledge he has acquired of the animals and

This split-level composition of a humpback whale has been a winner in two major international photo contests
Canon EOS-1D X, 11-24mm f/4L, 1/100sec at f/5.6, ISO 640

ecosystems of his local area has been instrumental to his success, most notably in his set of images, entitled 'The Polar Winter Feast'. Not only did this portfolio win the coveted Fritz Pölking Prize, awarded by the German Society of Nature Photographers (GDT), but also one of the images featuring an orca taking a breath on the surface on a freezing polar night in January (above), earned him the title of European Wildlife Photographer of the Year, 2016.

This winning portfolio depicted the uneasy relationship between fishermen and killer whales, which have learned to attack nets bulging with herring as they are winched up to the deck from the freezing depths of the Nordic fjords in winter. 'They can often tell by the sound of the boat if they have a lot of herring in the net or not,' says Rikardsen, 'and they know by the sound of the winch exactly when to hit. They are becoming more and more aggressive and can potentially endanger fishing equipment, which occasionally they have done. They have also figured out methods to empty some of the nets, lifting the nets from underneath so the herring falls over.'

Above: A breath in the polar night. The photograph that earned Rikardsen the overall title of European Wildlife Photographer of the Year, 2016
Canon EOS-1D X, 24-70mm f/2.8, ISO 4000, Canon 600 strobe

Split-level challenge

Documenting this story in one frame but on two levels – the fishermen on the surface and the whales beneath – meant he had to shoot split-level, with the camera and lens in a waterproof housing but only partially submerged. This is a straightforward practice for underwater photographers who shoot fish close-up in warmer waters and bright sun, but attempting this technique on whales in the 24-hour darkness of the polar winter in mid-January was beset with obstacles.

However, Rikardsen's scientific mind was up for the challenge. He explains: 'What you usually have is a dome [underwater housing], which is rounded. It's excellent for taking split pictures, particularly with super wideangles or fisheyes. However, the dome at the front works like a lens, and the water itself works like a lens, so the focus above and below the water is totally different. If you set the lens to infinity, the infinity below the water will only be about 30 or 40cm in front of the lens. To get around that, you usually use a small aperture, but you can't do that in low-light conditions. You either have to focus sharp underwater or above water, but the other part will be blurred.'

Rikardsen wanted maximum sharpness and depth of field both above and below the waterline. The answer was to design a home-made housing that was flat. He continues: 'I made a big "flat dome", because with flat glass, as with a diving mask, you have the same sharpness both above and below the surface.' This flat glass-housing solution meant he could now attempt the pictures he envisaged: showing sharply focused images of a whale below the water and fishing boats or coastline above, during the low light of the Polar winter months. Such pictures were included in

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Above: The fluke of a diving humpback whale lit by flash. Rikardsen had been experimenting with flash to ID whales, as part of his marine biology fieldwork
Canon EOS-1D X, Tamron SP 70-200mm f/2.8 Di VC USD at 70mm, 1/250sec at f/3.5, ISO 2000

Crashing Canons

RIKARDSEN'S glittering array of awards has come at a price – last year, he lost three cameras in as many weeks. First was a Canon EOS-1D X, the victim of a heavy snowfall. Then, while snorkelling with his Canon EOS 5D Mark III, photographing killer whales, he noticed his home-made housing was full of water. 'One of the clamps wasn't shut,' he recalls, 'so it flooded. Killer whales were feeding on herring in shallow water and it was all there in front of me! It was a dream situation and my camera broke. I didn't have any other cameras. I was so pissed!'

He then bought a replacement EOS-1D X but lost that on its first outing when it fell into a pool of seawater, oil and fuel on the deck while he was steering his boat. 'I was thinking that someone wants me to feel really bad and I felt really bad. It was so frustrating because, yes, the cameras are expensive, but it was all happening and I had no camera!' Two of the cameras were not insured...

last year's Fritz Pölking Prize-winning portfolio. One of the images, showing an acrobatic humpback whale arching beneath a snow-capped mountain on the Norwegian coast (see previous page), was awarded the overall grand prize in this year's Oasis International Photo contest.

Above: A shoal of herring photographed in the polar winter, Part of an award-winning portfolio in the 2016 Fritz Pölking Prize
Canon EOS 5D Mark III, 14mm f/2.8L II, 1/800sec at f/8, ISO 3200

Fishing for ideas

Rikardsen's innovative split-level depictions of marine life in the Arctic waters of the North Atlantic have certainly captured the imagination of photography judges all over the world. His access to his subject matter may be unrivalled, but it is his enquiring and analytical mind that led to these pictures being realised in the first place. Another important factor is his familiarity with the working lives of the local fishermen; he grew up in a small fishing community and his grandfather was a whaler. It was while observing a killer whale tailing the fishing boats as they hauled in their nets one day that sparked the idea that ultimately led to the innovative technique behind his photos. 'I was watching this happening from my boat, alongside the fishing boats, and I could see this killer whale so close,' he recalls. 'I was thinking, "I would like to document this but I would like to see it also from the whale's perspective." That was the idea I got into my head.'

However, the challenge did not conclude with the construction of his "flat dome" housing. The difference in the light intensity above and below water was vast, especially in the polar winter of late October to late February, when these photos were taken. Rikardsen explains: 'The light source is usually very low on the horizon or just below the horizon, so all the light that comes from that direction, which of course is the sun, reflects on the surface. The difference in light intensity above water and below water is much, much higher than in highlight conditions when the sun is higher up.' The solution was to use neutral-density graduated filters on the lens inside the housing. 'I made it so I could turn it and adjust it from the outside, and then when I held the dome, I had to have it exactly 50:50 above and below the water.'

Rikardsen's underwater and split-level photos are driven by a desire to depict the animal's perspective of stories that rarely get beneath the surface. Returning to the photo of the killer whale and the fishing boat, he says, 'To me, that tells not necessarily the one story, but it might tell two stories that are connected to the surface. That is what fascinates me about the split picture, that it should tell two stories, above and below water.'

His photographs are doing more than just winning prizes – they have also become an important part of his university lectures and he reckons they help the students gain a better grasp of their studies. 'I use my pictures to tell stories to the students and they love it. They also remember more because there's not a lot of text and figures, it's a picture and the story behind it. They remember pictures much more than words, so quite a few teachers could benefit by using less text and more pictures.' That may well be true, but how many other university professors are capable of taking award-winning pictures like Professor Audun Rikardsen? AP

Audun Rikardsen was born in 1968 and grew up in northern Norway, above the Arctic Circle. He lectures in the Department of Arctic and Marine Biology at the University of Tromsø and began a second career as an award-winning nature photographer in 2010. Since entering his first photography competition in 2011, he has won 25 major international photography awards. See **www.audunrikardsen.com**. The GDT European Wildlife Photographer of the Year is hosted annually by the Society of German Nature Photographers (GDT) **www.gdtfoto.de**. Wildlife Photographer of the Year is owned by the Natural History Museum, London. See **www.nhm.ac.uk/wpy**.