

The octopus in David Attenborough's *Blue Planet II*, is a superstar. Her qualities have almost nothing to do with the stentorian diction and dramatic pacing of the famed naturalist's narration – attributes that could enliven even the most incidental of sea creatures. This octopus has it. A magic that radiates from the screen and imprints her larger-than-life personality on the viewer. This octopus is wide eyed, magnificent and apparently knowing. A deep-sea ingénue with an outsized personality and a penchant for the dramatic.

In a seminal scene she fights off a shark. The odds look bleak. My heart is in my throat. She is firmly clutched in the dread jaws of the beast. She is in a fight to the death. But she shoots out two or three of her sinewy arms, and suffocates the shark by inserting them into its gills. The shark succumbs to her fighting smarts and shakes her off as he opens his gaping maw and releases her to safety. Like I said, dramatic.

And you should see her way with camouflage – caught unwittingly in a stretch of open sea far from her den and the safety of the kelp forest, she casts around for shells, stone, seaweed and other bits and bobs. Within seconds she has disappeared – now you see her, now you don't. An unblinkingly, almost digital eye is the only clue she is hidden in this suddenly manifest rock formation. For her next trick she outwits a snuffling predator in a sudden puff of ink. You can almost sense her smiling with delight as she elegantly whooshes away – trailing her limbs like a dancer. Her shells, like confetti, fall to the sea bed.

These intimate scenes of octopus life in the wild kelp forest off the Atlantic Seaboard have never been filmed or seen before. Thanks to Craig Foster, an extremely curious filmmaker and naturalist, and his daily dive of the past seven years, we can now witness what I can only describe as a serendipitous love affair between man and octopus.

Foster to his credit is slightly less romantic and a whole lot more scientific when I ask him if it was love at first sight. He is not one to anthropomorphise the natural world and with the octopus he named "Super Star" this would be foolhardy.

As Amia Srinivasan writes in the *London Review of Books*, "Octopuses frustrate the neat evolutionary division between clever vertebrates and simple-minded invertebrates. They are sophisticated problem solvers; they learn, and can use tools and they show a capacity for mimicry, deception and, some think, humour. Their intelligence is like ours and utterly unlike ours. Octopuses are the closest we can come on earth to knowing what it might be like to encounter intelligent aliens."

And yet. There is something singularly romantic in this relationship. Foster says it may never happen again in his lifetime. The rare and wonderful moment when a wild and opaque creature willingly embraces the human interloper and gives him, and by extension us, unprecedented access into her world.

"It is a strange thing, they have different personalities, some are quite bold – others very shy – she was in between. She stayed on the periphery for quite a while. From the animals' perspective it can distinguish between different people, but I suppose she would see me so often – and then suddenly there was a big shift. She comes over and greets you and knows you are not going to harm her, she becomes curious about you. It is a great privilege to step into that world to learn – not like a mammal – but like a fellow spineless creature in her invertebrate world, who understands the intricacies and connections. It's amazing. She hunts over 50 species but you can only find that out when you're allowed into her den and can pick up the bones of the animals she has eaten. You realise, my goodness, her life is so detailed and crazily connected to everything around her."

As a result of this unprecedented access into her den Foster and his scientific collaborators, including Professor Charles Griffiths, the UCT grandmaster of marine science, discovered a new species of shrimp that cohabits with the octopus. "I felt love for the animal. I cannot say what she felt for me."

How to understand the alien intelligence of the octopus? "She is an invertebrate, like a snail without a shell – survival would seem impossible given the number of predators with a taste for octopus. But the structure of their neural network is made of a similar substance to our human neural network – so it follows that some of their thinking and feelings could be similar to ours. The deeper you go into understanding animals the more you realise that perhaps we are not that dissimilar from each other. And if you watch her every day you realise how very clever she is. There is no parental input – they live a solitary life. They are antisocial – so it is fascinating to watch her learn. For example, she had to learn how to

GETTING DEEP WITH AN OCTOPUS

For the first time octopus life in the wild kelp forests of the Atlantic Seaboard has been filmed.

By **Aspasia Karras**



Craig Foster

hunt lobster. Initially she did not know how – lobsters are wily and fast but within two weeks she had mastered it.

"She had an incredible repertoire of extraordinary behaviours and can do an enormous number of things, like her camouflage technique, and assessing when to leave the camouflage behind. You become absolutely convinced you are dealing with a very curious, highly intelligent, highly playful individual. She would play with me, toy with my hand, my body, and I believe she would play with fish. I have seen her hunting fish and this was different – this was play."

There is no other footage of an octopus playing with fish in the wild, he muses. "It's amazing how she works out all these things. If you think how slowly we learn as children and how much we have to be taught."

He's slowly learning the language of the octopus. "It's fascinating. They communicate so much on their skin, the

OCTOPUS FACT #2

It has no stable colours or texture and can change at will to match its surroundings. The chromatophores on its body can be very elaborate, but it's colour blind.

shapes, textures and body posture. Their feelings and thoughts are projected onto the body itself. Think of what we are saying when we blush – the octopus is a thousand times more expressive.

But who they are communicating with is a mystery as they live a solitary life, mostly alone. Even when they mate it happens at a distance. One tentacle arm reaches out and places its sperm packet in the female."

I wonder when his fascination with the kelp forest and its octopod denizens took hold? "In some ways as a very young child. I lived in a room below the high-water mark in Bakoven on the Atlantic Seaboard long before it was a popular place. My father brought me home at three days old and immersed me in the Atlantic ocean." Quite the baptism, I can't help thinking. "At two he taught me to dive by holding onto his back. If you hold on, around an adult's

neck, you soon get the feeling for it, it is how I taught my own son. By three I was diving alone – the intertidal kelp forest is a part of my psyche."

Later he worked in film all over Africa and forged connections that gave him a glimpse of what he calls "deep nature". "When I worked with the San trackers I learnt the difference between deep nature and just loving nature."

What then is deep nature?

"It's a very different thing. Deep nature is the matrix of nature – the essence – the motherboard. I realised how very useless I was as an observer of nature when I was next to a master tracker who had hundreds of generations of knowledge directly transmitted to him – every little sign he reads signifies something in the past and the future and is passed from generation to generation.

"There's something in the modern industrialised human that's become disconnected from nature. It's disturbing to realise that this had happened to me. I was watching animals, diving with sharks and crocodiles – crazy stuff – but it was superficial. After three years of committing to a project and diving every day I met this young octopus. She taught me the deep nature experience. The octopus sits in the middle of the sea forest – hunts and is hunted – so you can see the entire universe of the kelp forest through her eyes."

I suppose she is like a prism – seeing her properly in the full light throws open and releases all the colours of this neck of the woods. "She was the culmination of my curiosity and searching."

What did he learn from her?

"I guess what immediately springs to mind is that the kelp forest appears to have many, many species – which live unbelievable lives. It all works together like a giant natural brain. All the species are in some way linked to all the others and the forest itself is like a giant brain. If you go in every day – like I have done for seven years now – occasionally you get a glimpse of this giant natural intelligence."

I imagine it's like pulling away the veil or the velvet curtain in the Wizard of Oz. You finally see the magician turning the dials.

"Most of the time you're pottering along and occasionally this happens. Water tracking is a deep nature process. Almost nothing is known about the secret lives of these animals. When you watch *The Blue Planet* you see 0.1 % of the mystery. Sometimes when I open that ancient door, I feel like I'm in nursery school. Ancient humans had an incredible advantage over us – they were completely integrated with nature. There was no separateness.

"Humans have forgotten the natural law – we don't realise that environmental disaster will affect everything. All our supposed political and financial problems rest on environmental foundations. We think that it will be okay, but we won't be able to eat or breathe. We've stepped out of this process and have completely disconnected from an intelligence that's superior to ours – far more sophisticated. It makes sense to stop, and to take note and look and learn from it. For me the octopus is an ambassador for nature."

Then he goes and breaks my heart. Super Star is dead. Her flame, it seems, burns bright and furious and fast. She is an Octopus vulgaris, a common octopus and they live extremely short lives – a maximum of two years.

"Octopus years are like 50 human ones. Time did feel very different down there with her. One month is the equivalent of five years. It's unlikely I'll ever be able to do it again – most octopus move from den to den very quickly or get taken by a shark. If they manage to mate, they start to care for their eggs and get weak as they stop hunting and eating. They die as the youngsters hatch. The focus is on the next generation and they seem to know they're dying. This is their great evolutionary survival trick – they turn over new generations very fast, laying up to half a million eggs of which only a very small percentage survive. But it's a clever way to survive for over 200 million years." ■

Craig Foster is working on a documentary and a book about the octopus for release in December 2018. He established the Sea Change Trust with Ross Frylbeck and Carinae Rubin-Frankal. Green Seas, the episode of *Blue Planet II* featuring the octopus airs March 4 at 4pm on BBC Earth. ■

OCTOPUS FACT #3

At the University of Otago, the octopus shot jets of water at the laboratory lights to short-circuit the electricity and escape – so often that they eventually released it back into the wild.

OCTOPUS FACT #4

There's no distinction between its brain and its body – two thirds of its half a billion neurons are in its arms. Each arm can act intelligently on its own and hunt, grasp and manipulate independently.



Cameraman Roger Horricks filming an octopus for 'Blue Planet II' Pictures: Seachange Project