



Zamie





Off Dominica, a female sperm whale highlights the importance of empathy, compassion and action to conserve her species and ours as researchers try to understand the link between whales and the fight against climate change.

Words by Nane Steinhoff

Photographs by Shawn Heinrichs, taken under government permit



| *PREVIOUS: Zamie the sperm whale floats patiently at the surface, inviting the team to interact.*

| *LEFT: Zamie sleeps motionless just 10 metres beneath the surface.*

“We dropped into the water and this magnificent female sperm whale came right up to us. She slowed down her movements so we could casually swim alongside her. I remember looking straight into her eye and observing this intricate network of vessels and structures. It looked like a beautifully profound, abstract painting, like nothing I had ever seen before. In that moment, I felt that she was witnessing and welcoming us, rather than simply tolerating us. Her name was Zamie.”

Some years after his first encounter with sperm whales off the coast of Sri Lanka, founder of Only One and underwater filmmaker and photographer Shawn Heinrichs travels to the eastern Caribbean island of Dominica to document the island's resident sperm whale population under permit as part of a larger story on the importance of whales in regards to ocean ecology and climate regulation. Dominica lies along a series of deep oceanic trenches that drive nutrient-rich waters between the island chain, attracting large squid to these waters all year around. As sperm whales feed on squid, Dominica is home to several hundred female and young sperm whales that reside here all year, including Zamie, a mature female, believed to be between eight and ten years old.

“This was my first time spending significant time in the presence of these animals. It was unlike any other interaction I’ve had in the ocean; it was next level,” Heinrichs says. On their first day in Dominica, the team around Heinrichs dropped in with what they believed to be several pods. “There were probably 17 or 18 sperm whales, including two calves. We swam with them for well over an hour,” Heinrichs says. “But it was one particular whale that really touched our hearts: Zamie. We came across her several times when she was in a group, but the magic really happened when we met her on her own. In one such instance, she brought us a message of compassion and connection.” According to local guides, when Zamie was young, she got entangled in fishing gear. The guides helped to remove the gear from her, and ever since she has sought out contact and extended interaction with humans when they approach her with care and respect.

Heinrichs remembers: “At some point during one of our special interactions, Zamie slowed down and dropped to about 10m to fall asleep with her tail sticking up. Her body slowly rose and turned upwards so her nose was pointing up. We swam right down and marvelled at the beautiful blue abyss that surrounded this single sentient creature holding space. At some point, she

started to release bubbles from her nostrils and made her way up to the surface. We expected for her to swim away but not this time. She just stuck her nose right out of the water and started to bob there so that her eye was at our level. We swam around her head, and she tracked us with her eyes, while slowly rotating. For about 15 minutes, she just hung in the water column like that. While some might describe this behaviour as resting or sleeping, I believe it was none of that. She had chosen to create a very special interaction with us where we didn’t have to swim or dive down to connect with her. In that moment, I believed that she had brought a message to us, our species. One small act of kindness has led to a lifetime of acceptance and interaction that isn’t a given if you look back at history.”


Between 1750 and 1986, two commercial whaling periods wiped out around 90% of sperm whales. While up to 3 million individuals were believed to exist before the whaling periods, only around 300,000 sperm whales are alive today. The knowledge and wisdom that these animals transferred from generation to generation, much like elephants, was suddenly disrupted. “It’s not only the number you kill, but it’s also what you do to their social structure,” adds Heinrichs. Sperm whales are highly sentient, social animals. They work in groups of around eight to 12 individuals, while multi-generational families stay together throughout their entire lifetimes. While males leave the group once they have matured and wander the ocean alone, the females stay together throughout their lineage and often choose residency. Heinrichs explains: “When you take out a matriarch, you break away the structure which means you take away critical wisdom for the surviving pack and so they’re more vulnerable to other threats and predators.”

While other whale species like humpback whales have made a relatively good recovery since the 1986 Moratorium on Commercial Whaling stopped whaling in most parts of the world, there has been very little evidence of any increase in sperm whale populations. “That means that what we’re doing to them right now is continuing to hurt their populations,” explains Heinrichs. As sperm whales are at the top of the food chain, they’re known to ingest chemicals. Researchers have found high amounts of mercury and lead, both known neuro-disruptors, in their tissue in the past. Beyond that, beached sperm whales have been seen to ingest large amounts of clear plastics that might look like squid to them. Another potent threat to the species is noise pollution. While sperm whales have the most powerful natural sonar system on earth with the capability to create a 3D map of their environment and stun and kill their prey, their sonar is no match for industrial noise pollution, particularly the high sonic booms you get from seismic work and naval activity. These man-made sounds can deafen sperm whales, making them unable to navigate or feed themselves. Additionally, as we see increased fishing operations for squid around the globe, a sperm whale’s main food source, Heinrichs asks himself

what will happen to sperm whales: “As we saw in the Sea of Cortez, sperm whales will disappear if their food source disappears. We literally saw the species withdraw from an entire sea basin as a result of the depletion of their food source, so they’re clearly vulnerable. As we see increased squid fisheries in the eastern Caribbean, it could be one of the greatest threats to these animals. They require a lot to survive and if we start taking anything near the amount we do in the other fisheries, we could devastate their numbers.”

All of these factors, combined with one of the lowest reproductive capacities of any mammal on earth (sperm whales only have one calf every five to six years), doesn’t paint a rosy picture for the future of the species. “Because of that, every single calf, every single pregnant female, and every single mating interaction matters,” says Heinrichs. “We have to treat these animals with incredibly tender gloves. We need to make sure that we’re maintaining a home for them. And I think Zamie was there to remind us of how special they are, how much we can really connect with them if we open our hearts, and how we can share the ocean with them so they can continue to thrive.”

The importance of healthy whale populations for our species has been widely explained in research that describes the critical roles baleen whales play in the fight against climate change. By consuming plankton and krill and expelling their iron-rich faeces, they fertilise the ocean and stimulate the growth of plankton, thereby creating more carbon absorption and reducing CO₂ in the atmosphere. “Once upon a time, before commercial whaling, whales took more carbon out of the atmosphere than the entire Amazon, but through the reduction of their numbers, that role has declined,” says Heinrichs. “However, the role of toothed whales in that cycle hasn’t yet been studied, to my knowledge.” This is why he is especially curious to find out more about the nutrient-recycling cycle of the deep in which sperm whales might play a crucial role: “Baleen whales mostly feed at the surface and in the shallows but sperm whales feed in the deep. As the deepest mammalian divers, they can go below 2,000m when hunting. By consuming squid in the deep, bringing it back up to the surface and re-fertilising it, is there a deeper pump at play? We are talking about 100 million metric tonnes of squid a year – a significant number that is coming from the deep. That’s close to the weight of seafood that humans take out of the ocean annually. That really puts in perspective how critical a role these animals play in regulating the deep ocean systems. It’s a question that has not been answered yet but what we have learned is that the species plays a greater role than we ever thought. I expect we’ll continue to find out amazing things in the future.”



“ As the deepest mammalian divers, they can go below 2,000m when hunting.

Zamie glides along slowly as the team gazes into her complex eye.



*Once upon a time,
before commercial
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*Zamie rolls upside down
as she playfully
interacts with the team.*





*A family of sperm whales
including a precious calf,
drifts slowly by.*





| LEFT: Steve Woods surrenders completely in the presence of Zamie.
| RIGHT: Zamie floats vertically at the surface..





“ While up to 3 million individuals were believed to exist before the whaling periods, only around 300,000 sperm whales are alive today.



Zamie pauses to interact and inspect the team.

One of the most incredible things that I've found in sperm whales, is their social interactions, not only amongst themselves but with us. It's unlike anything I've ever experienced with any whale anywhere in the world.

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To behold a sperm whale while she sleeps motionless, is truly a sacred moment.





But the future for sperm whales looks uncertain at best, comments Heinrichs. To give them better protection, naval testing should be forbidden in areas that are home to known sperm whale populations, while large shipping lanes for loud cargo ships and disruptive cruise ships should be rethought. “Additionally, as long as we’re dumping plastics in the ocean, these whales will continue to ingest them. We really need to reduce plastics, remove the amount of chemicals that we release in the ocean, and really look at how sonar-based vessels and other loud vessels are affecting the species. We need to do a much better job at creating space for these animals,” explains Heinrichs, before adding: “We have to commit to much more significant, real change because it’s scary these populations have not demonstrated significant recovery despite the fact our species has not actively hunted them for decades. Clearly, what we’re doing isn’t enough. And that means significant change is needed in a time where people continue to barrel ahead unconsciously.”

Zamie is the face that can build that bridge between complex conservation jargon and active change. People need an emotional connection with a species to really care for their protection, believes Heinrichs. Sperm whales are sentient, curious beings that, when you connect with them, create an important shift in people. As the largest toothed whale in the ocean, they have the largest brain of any animal on Earth which speaks volumes about their capacity for communication and intelligence. “To me, one of the most incredible things I’ve found in sperm whales, is their social interactions, not only amongst themselves but with us. It’s unlike anything I’ve ever experienced with any whale anywhere in the world. They offer such a unique and extended insight into an entire species and family of species that we don’t normally get. That opens up portals for empathy, compassion and action,” says Heinrichs. “We, as a species, waged war on Zamie’s species. Yet she chose to forgive and trust us in this moment, to allow us to interact with her in her most vulnerable state. These animals are ambassadors for our ocean. They’re here to remind us, that despite all the violence that has been perpetrated on them in the past, we can change that narrative. We can create an entirely different relationship. But what that requires today is not only that we stop driving harpoons into them, which is still happening on a small scale in some places, but that we think about the other threats these animals face.”

While the threats are real, the opportunities are real too, believes Heinrichs: “For me, it’s about opening our hearts to realise that there are other highly sentient, intelligent beings on this planet. Rather than assume that we are the elite species, we need to have the humility to recognise there are other levels of intelligence beyond what we can understand. And that, if we were to open our ears and our hearts, we might learn how to protect another species - as well as understand what it might take to save our own.” ❶