

Greenland shark expedition returns with new data and spectacular footage

June 21 2017, by Jamie Brown

An international team of physiologists including The University of Manchester's Dr Holly Shiels has returned from Greenland, where they battled storms and icebergs to study one of the world's most mysterious sharks.

The purpose of the mission was to understand more about the Greenland shark, a top predator in the Arctic, which lives for more than 272 years, and possibly even more than 400.

Scientists know that it is both a hunter and a scavenger because it has been seen to feed on seals and has been found with the remains of polar bears and whales in its stomach. It is also one of the largest species of shark— growing to about five-and-a-half metres, just a bit smaller than the great white.

Although known to be under pressure from fishing and climate change, very little is known about the species. so the purpose of the mission was to find out more about its heart, movements, diet, and reproductive patterns.

Dr Shiels, who is also a trustee of The Physiological Society said:
"Greenland was an astonishing place to visit. At times, the seas were so rough that the ship felt like the inside of a washing machine, but at others the water was like a sheet of glass.

"We were able to study both male and female of a variety of ages, which

will give us a great insight into the species and how best to protect it."

Initial observations about the [sharks](#) included the incredibly slow heart rate – just one beat every ten seconds – and more data, from the sharks that were tagged and released, will become available over time.

As well as helping to understand how to best conserve the shark, these studies may also lead to greater understanding of diseases associated with the aging process, such as heart disease and cancer, which could help with new therapies for humans in the future.

The expedition was led by Professor John Fleng Steffensen of the University of Copenhagen and took place on the RV Sanna, a research vessel belonging to the Greenland Institute of Natural Resources. Funding was provided by The Danish Natural Science Research Council, the Carlsberg Foundation, the Danish Centre for Marine Research and the Greenland Institute of Natural Resources

There were eight scientists on the expedition aside from the crew. Together they sailed for more than 40 hours through gale-force winds and waves to reach the research area, fighting seasickness along the way.

Dr Shiels added: "The weather conditions were sometimes genuinely frightening and we were thankful when we reached the calm waters in the fjords near Narsaq. We even went on land for a few hours to a small but welcoming pub with live traditional music, selling locally brewed beer!

"The local people we met had a great deal of knowledge of the shark, which helped us identify sites to catch them. They were also able to sell us locally caught seal meat for the hooks. Using this bait, we caught a record number of sharks with no by-catch of other species."

She added: "It's very early days for the results but the number of samples we've taken and the satellite tagging means that this remarkable [species](#) is now beginning to reveal some of its secrets."

Provided by University of Manchester

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