Greenland sharks are the longest living animals on the planet, 400 years old

Danish scientists have discovered the lifespan of a Greenland shark up to four centuries, keeping the world's oldest vertebrate.

You can guess which fish has to wait for more than a century to mature. A recent study said: " *It is a Greenland shark - a 5m-long predator and survives for more than 400 years. It is the longest-lived vertebrate with longevity. So it is not surprising that the female Greenland sharks are still unable to reproduce until the 156th birthday* . "

Michael Oellermann, a cold-water physiologist at Loligo Systems, Viborg, Denmark, who did not join the research group, said: " *The life of this shark is" amazing ". Especially because the ocean is a dangerous place - fierce predators, scarce food and diseases can attack them at any time.* "

Greenland sharks (*Somniosus microcephalus*) are known to have a very long life. In the 1930s, a Greenland aquatic biologist marked the mark on more than 400 Greenland sharks and realized: " *Each year this shark is only 1 cm long* ." This shows: " *It takes a very long time to develop* ". However, scientists have yet to find out whether Greenland sharks can live the longest in many years.

Marine biologist John Steffensen at the University of Copenhagen found the backbone of a captured Greenland shark in the North Atlantic. Hopefully, this skeleton will have annual growth rings that can calculate its age. However, John Steffensen could not find it, so he consulted the documentation of Jan Heinemeier - a radiocarbon expert at Denmark's Aarhus University. Heinemeier advises Steffensen to use their lenses instead.

His goal is not to count growth rings, but to measure different types of carbon in the lens so that he can make suggestions about the age of the animal.

Steffensen and his tutor - Julius Nielsen spent several years collecting the bodies of Greenland sharks, most of whom died due to being caught in the fishing nets of boats. They then used a special technology: " *They found a large amount of Carbon-14 - a heavy isotope left over from the mid-1950 nuclear bomb test* ." In particular, carbon from the " *electromagnetic pulse bomb"* entered the ocean ecosystem in the early 1960s, meaning that the inert body formed during this time - especially their eyes - contained more element elements heavier. Using this technology, the researchers concluded: " *There are two Greenland sharks born after 1960 with a length of less than 2.2 meters and a small one born in 1963* ".

The team used Greenland sharks first as a starting point for a growth path to calculate the age of other sharks based on their size. To do this, they began to study with newly born Greenland sharks only about 42cm long. In an archaeological search, researchers applied technology, based on how far away the carbon isotopes and the distance to the ground were calculated to calculate the age of the sediments. In this case, they combined the size of the Greenland shark's radioactive carbon days to calculate the age of the Greenland sharks. On August 11, the research team reported to the science industry: " *The largest child in the study is about 120 years old and has a length of 392cm (392 ± 120 years). So the Greenland shark holds the century. The continent is the longest living vertebrate, above the 211-year-old Arctic dolphin* . " The team estimates: " *The size of the Greenland female sharks that are pregnant is nearly 4 meters long - and at least 150 years old* ".

Oellermann was not only impressed by the age of the Greenland shark, but also impressed with the way Nielsen and his colleagues used to determine their age. Oellermann posed the question: " *Does anyone calculate the lifespan of marine shark species thanks to" nuclear bomb "* ?"

He and others thought: " *Cold water can help prolong the life of animals by slowing down growth as well as biochemical activities in the body* ." Shawn Xu, a genetic researcher at the University of Michigan in Ann Arbor, agrees: " *Lower metabolic rates play a huge role, but it's not all* ." Three years ago, experiments conducted in nematodes showed that " *Cold can also activate anti-aging genes - help animals double the amount of protein, remove DNA molecules that damage, It is very effective and even anti-infection , long lasting life " . " The activated" cold molecules "evolved in the animal world, so these processes can also survive in Greenland sharks*," he said.

Paul Butler is not surprised: " *The frozen water areas are home to many older species* ." In 2013, a scientist studied the development of hard tissue of invertebrate animals at Bangor University in the United Kingdom and his colleagues described the 500-year-old oyster (*named popular is Arctica islandica*) found in the North Atlantic Ocean. Even these two hundred-year-old animals have only appeared in the North Atlantic in recent years. Bulter doubted: " *There, there are certainly many things waiting for us to discover* ." He added: " *It can't make us feel any more unexpected, but I think these two cases are exceptional* ."