



SCIENCE & TECHNOLOGY

Scientists Estimate Age of World's Largest Fish

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Scientists have recently discovered how to compute the age of whale sharks, Earth's largest fish.

Researchers used information about radioactivity levels from Cold War-era atomic bomb testing. They determined that bands form in the shark **vertebrae** every year, like a tree's growth rings.

They reached their conclusion by measuring levels of carbon-14. The naturally occurring radioactive element is also a product of nuclear explosions.

It was already known that these bands existed and increased in number as sharks aged. But it was unclear whether new rings appeared yearly or every six months.

The researchers compared carbon-14 levels in the rings to **data** on changes in carbon-14 levels over time. They compared them, especially, to the years of **atmospheric** nuclear tests in the 1950s and 1960s.

Joyce Ong is a marine scientist at Rutgers University in New Jersey. She was the lead author of the study that was published recently in the journal *Frontiers in Marine Science*.

"These **elevated** levels of carbon-14 first **saturated** the atmosphere, then oceans and moved through food webs into animals, producing elevated levels in structures such as the vertebrae of whale sharks," Ong said.

Whale sharks have a brownish-grayish color on the back and sides with white spots. The largest ones measure some 18 meters in length. They swim great distances through the world's tropical oceans to find food and feed on small organisms taken out of the water.

The discovery enables scientists to measure a whale shark's age after its death. But just as importantly, it shows that these endangered marine giants grow slowly.

Mark Meekan, a co-author, is with the Australian Institute of Marine Science in Perth. He said, "For the management of any marine **species**, knowledge of growth rate is critical as it determines the **resilience** of populations to threats such as fishing."

Meekan said, "We thought that it was possible that they could reach ages of as much as 100 years, but we weren't really sure..."

The researchers tested carbon-14 levels in long-dead whale sharks whose remains were stored in laboratories. The oldest one tested, stored in Pakistan, had lived 50 years.

I'm John Russell.

Will Dunham reported on this story for Reuters. John Russell adapted it for Learning English. Hai Do was the editor.

Words in This Story

vertebrae – *n.* one of the small bones that are linked together to form the backbone

data -- *n.* facts or information used usually to calculate, analyze, or plan something

atmospheric -- *adj.* of or relating to the atmosphere of the Earth or another planet

elevated -- *adj.* higher than normal

saturate – *v.* to fill (something) completely with something

species -- *n.* a group of animals or plants that are similar and can produce young animals or plants : a group of related animals or plants that is smaller than a genus

resilience – *n.* the ability to become strong, healthy, or successful again after something bad happens

