SCIENCE & TECHNOLOGY

Scientists: Sharks Use Earth's Magnetic Field to Travel

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Scientists have found that **sharks** use the Earth's magnetic field as a sort of natural GPS. This permits them to swim across great distances in the world's oceans.

GPS, or Global Positioning System, is a United States government-owned service that provides users with their location on Earth. A GPS device can tell users directions from any point to another point in real-time.

Researchers held experiments with a small kind of shark in a sea laboratory. They confirmed the theory that sharks use magnetic fields to guide their travels. This behavior is seen in other sea animals as well. Their study was published this month in the journal *Current Biology*.

Bryan Keller, an expert on sea life, is one of the researchers. He said the study explained how sharks can travel the seas and find their way back to feed and produce **offspring**.

Keller said, "We know that sharks can **respond** to magnetic fields." But scientists did not know that they use magnetic fields to help direct them. He noted that "You have sharks that can travel 20,000 kilometers and end up in the same **spot**."

Researchers have questioned how sharks perform long-distance traveling for years. Sharks make their trips in the open ocean where they pass few physical features such as corals that could serve as landmarks.

Looking for answers, scientists based at Florida State University decided to study a small kind of shark called a bonnethead. The bonnethead shark they studied lives on both American coasts and returns to the same waters every year.

Researchers created magnetic conditions to make 20 bonnethead sharks think they were hundreds of kilometers away from where they were caught off Florida. The scientists found that the sharks began to swim north. This was due to the magnetic conditions that made them think they were south of where they should be.

Robert Hueter, who was not involved with the study, is a scientist at Mote Marine Laboratory & Aquarium. Hueter said more studies are needed to find out how the sharks use magnetic fields to know their **location**. Also, studies are needed to find out if larger, long-distance traveling sharks use a similar system to find their way.

He said the question has always been: if sharks are **sensitive** to magnetic fields, do they use this sense to travel the oceans and how? He said the researchers are making some progress at answering this question.

Keller said the study could help inform the protection of certain sharks. A study this year found that the number of sharks dropped more than 70 percent between 1970 and 2018.

Researchers say that, like bonnetheads, other sharks probably also use the Earth's magnetic field. This includes large sharks that make cross-ocean trips. Keller said that it is very unlikely that the shark they studied developed this sense and other traveling sharks did not.

I'm Dan Friedell.

Patrick Whittle reported this story for the Associated Press. Gregory Stachel adapted it for VOA Learning English. Hai Do was the editor.

Words in This Story

shark – *n.* a large and often dangerous sea fish with very sharp teeth

offspring – *n.* the young of an animal or plant

respond – *v.* to do something as a reaction to something that has happened or been done

spot – *n.* a particular space or area

location – *n.* a place or position

sensitive – *adj.* able to sense very small changes in something