# Sharks use Earth's magnetic field as a GPS, scientists say

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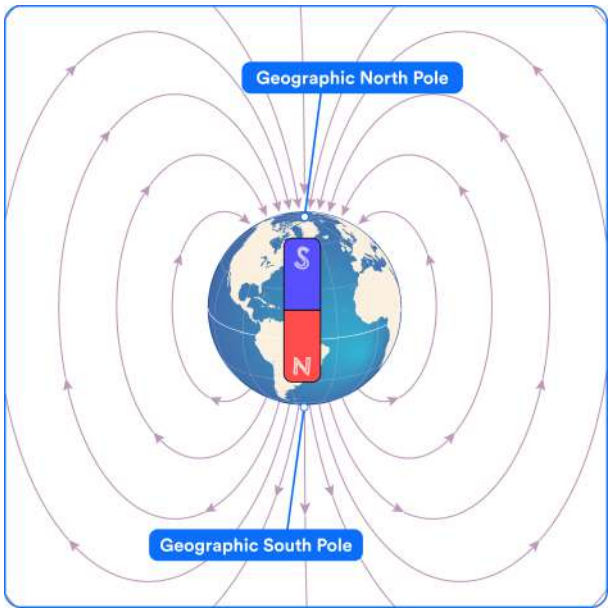
Image 1. Studies have found that sharks use the Earth's magnetic field as a kind of natural GPS as they navigate the ocean. Photo: Jay Fleming/ Getty Images

Humans often use GPS to tell them where they are. GPS is a system. It uses devices to calculate the position of people or things. Now, scientists found that some sharks use their own kind of GPS.

Scientists have known that animals have a similar ability to find their way. Some animals can use Earth's magnetic fields. The fields help them travel. A magnetic field is an invisible area. It surrounds a magnet. Earth's magnetic field extends out into space.

Animals such as birds and sea turtles use these fields to find food and nesting sites. So, scientists wanted to know if bonnethead sharks could do this, too. Bonnetheads are small sharks. They are a type of hammerhead shark.

The scientists found that these sharks do use magnetic fields. They use them to navigate thousands of miles across the oceans. The fields help them find their way back home, too. In May 2021, the scientists published their study.




### Magnetic Fields

Bryan Keller worked on this study. He studies laws that affect the ocean. He works at Florida State University.

Keller and his team studied 20 bonnethead sharks. These sharks make migrations every year. A migration is the movement of a group of animals from one place to another. Bonnetheads live on both American coasts. They migrate to the same spots every year. They feed and give birth in these spots. The scientists wanted to know if magnetic fields played a role in helping them make migrations.

In an experiment, the scientists caught bonnethead sharks. They caught them off the coast of Florida. Next, the scientists exposed the sharks to magnetic conditions. The conditions were similar to the ones that the sharks encounter far away from the Florida location. It made the sharks think they were further south than they actually were. The sharks responded by swimming north. This proved that they could sense and respond to magnetic fields.

Keller said that some bonnethead sharks can travel 20,000 kilometers. That is 12,427 miles. After traveling, they can still return to the same spots.

The research provides evidence that these sharks use Earth's magnetic fields. However, it does not explain how they do it. Other experts say future studies could tell us more about it.

### Navigating The Oceans

Robert Hueter is a scientist. He works at the Mote Marine Laboratory & Aquarium. It is in Florida. Hueter was not involved in the study. But he said he would like to see more research on how the sharks use magnetic fields. He said that Keller and his team made some progress.

The information learned from this study could also help scientists. It could help them keep track of different sharks throughout the world's oceans.

The information might also help them protect some sharks. Shark populations have been declining for decades. So, knowing how sharks navigate could help scientists take steps toward saving them.