Uncovering secrets of mysterious eels that travel thousands of miles

By Abbie Bennett, Raleigh News & Observer on 10.09.18
Word Count **712**
Level **MAX**

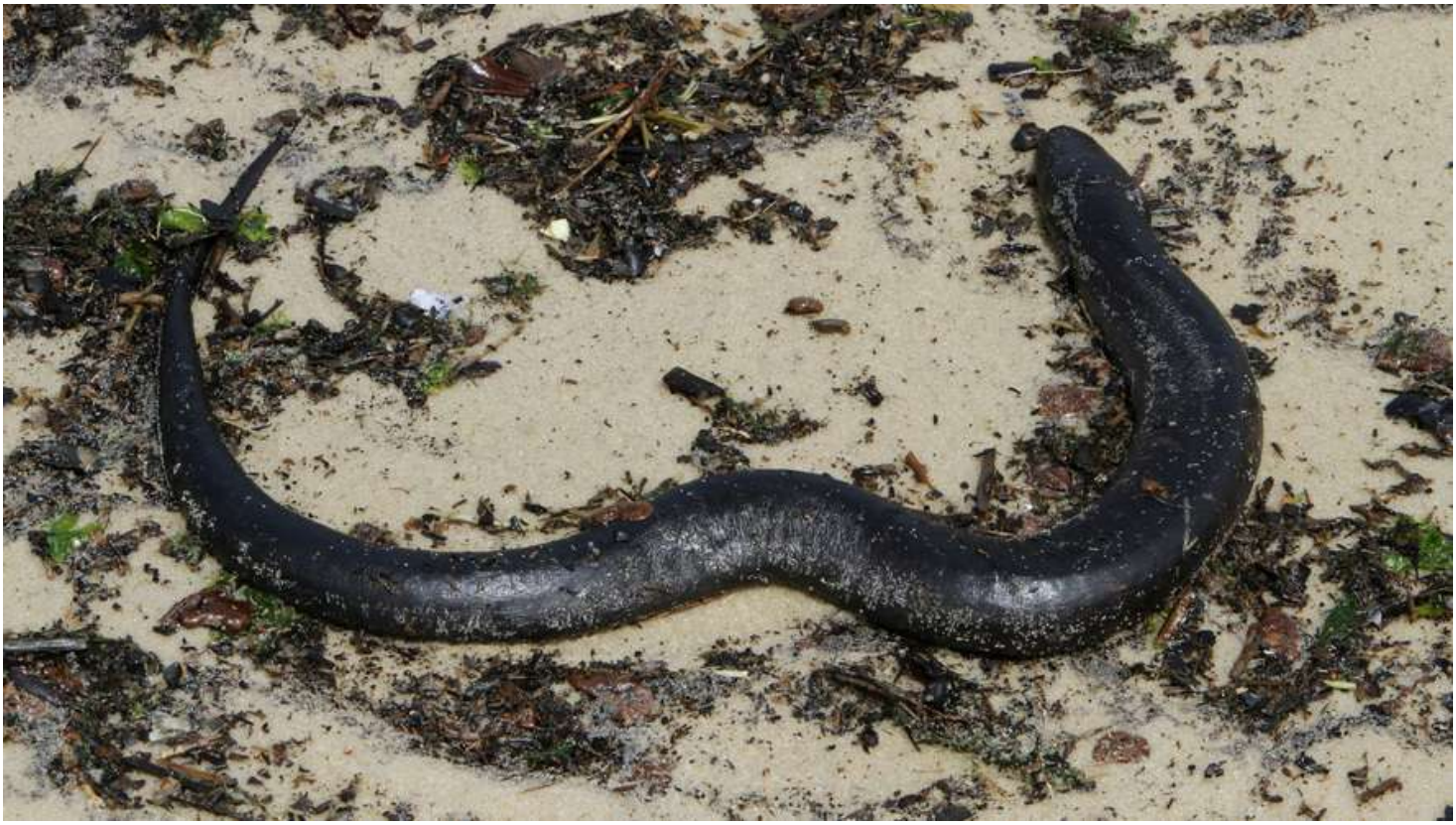


Image 1. An American eel appears on the edge of the waters of the Mississippi Sound in a file image from 2010. Photo by: James Edward Bates/Biloxi Sun Herald/TNS

RALEIGH, N.C. — American eels are slimy, sinuous creatures. They slither their slender, scaled bodies through water both fresh and salty.

But not much is known about this elusive eel. However, it is found in nearly every aquatic habitat in North Carolina — from the cold mountain streams and lakes of the Smoky Mountains to the marshes of the Outer Banks and beyond.

Lewis C. Naisbett-Jones is a Ph.D. student at the University of North Carolina at Chapel Hill. He is working at the UNC Institute of Marine Sciences in Morehead City. He wants more people to know about eels.

The American eel is a mysterious creature, Naisbett-Jones said. The snakelike creatures travel thousands of miles across the Atlantic Ocean each year. They swim at depths of more than 6,500 feet in complete darkness in order to breed. No one knows how they accomplish this feat.

"Not only do we not know where it is they go, we still don't know how they accomplish this journey," Naisbett-Jones said. "Unlike humans, they don't have a GPS to guide them and the ocean has very few signposts."

He added, "I think in this day and age there are very few species as widespread as eels that we know so little about."

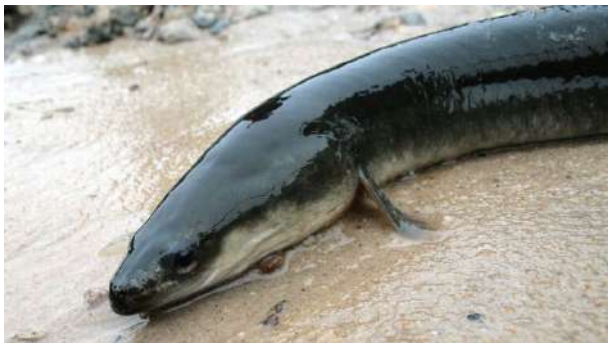
Naisbett-Jones is researching whether adult eels use the Earth's magnetic field to guide their journey. Research shows sea turtles and migratory birds can do this.

To conduct his experiments, Naisbett-Jones built a large magnetic coil he and his team use to create magnetic fields similar to those that exist at different locations in the ocean.

"By placing eels inside this coil, we can observe how they behave and see whether they use information from Earth's magnetic field to navigate," he said.

American eels have been on the decline in recent years. No one knows exactly why, Naisbett-Jones said.

Despite once being highly abundant, their future is "hanging in the balance," he said. In some areas, eel populations have declined as much as 99 percent.



The International Union for the Conservation of Nature considers the American eel "endangered."

"Earth's magnetic field changes through time due to a natural phenomenon known as geomagnetic drift." Naisbett-Jones said. These changes might be the reason for the eel decline.

"We need to understand what magnetic fields are important to eels during their migrations," he explains. Then, "we can investigate how geomagnetic drift affects eels."

Better understanding how eels use the Earth's magnetic field could help improve human navigational technology, too, he said. This could be especially useful in areas where satellites are less effective.

Like many fisherman, Naisbett-Jones said he used to think of eels as "somewhat of a nuisance." But he says they're "under-appreciated."

"American eels undertake this incredibly long migration across vast expanses of featureless ocean," he said. "This fascinated me, particularly from a navigational perspective."

He said he was especially amazed "after realizing that we still don't know how these eels achieve this journey."

He added, "Who doesn't like a good mystery?"

Naisbett-Jones shared some facts about American eels. They live about 15 years. They can grow up to 3 feet long and weigh about 17 pounds (females are usually larger than males).

American eels live in areas from Greenland to Venezuela. They spend most of their life in freshwater or areas where fresh water and the ocean meet. They travel back to where their parents grew up, without ever having been there before.

Another fun fact about eels? They are one of the few fish that can swim backward!

Naisbett-Jones has also done research on European eels. He found out that they also breed in the Atlantic. Like their American cousins, they use the Earth's magnetic field to navigate.

"Extending this research to American eels and adult eels in general is the next piece of the puzzle and that's what I'm doing right now, although it's too early to say what we've found yet," he said.

Increasing understanding of how the eels navigate is essential to the experts working to protect them.

"I believe they have an incredible story to tell and that this is something that can help change their perception and encourage their conservation," Naisbett-Jones said.