Undersea river discovered flowing on sea bed

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Telegraph.co.uk Researchers working in the Black Sea have found currents of water 350 times greater than the River Thames flowing along the sea bed, carving out channels much like a river on the land according to an article in the Telegraph. The undersea river, which is up to 115ft deep in places, even has rapids and waterfalls much like its terrestrial equivalents.

If found on land, scientists estimate it would be the world's sixth largest river in terms of the amount of water flowing through it.

The discovery could help explain how life manages to survive in the deep ocean far out to sea away from the nutrient rich waters that are found close to land, as the rivers carry sediment and nutrients with them.

The scientists, based at the University of Leeds, used a robotic submarine to study for the first time a deep channel that had been found on the sea bed.

They found a river of highly salty water flowing along the deep channel at the bottom of the Black Sea, creating river banks and flood plains much like a river found on land.

Dr Dan Parsons, from the university's school of earth and environment, said: "The water in the channels is denser than the surrounding seawater because it has higher salinity and is carrying so much sediment.

"It flows down the sea shelf and out into the abyssal plain much like a river on land. The abyssal plains of our oceans are like the deserts of the marine world, but these channels can deliver nutrients and ingredients needed for life out over these deserts.

"This means they could be vitally important, like arteries providing life to the deep ocean.

"The key difference we found from terrestrial rivers was that as the flow goes round the bend, the water spirals in the opposite way to rivers on land."

The undersea river discovered by Dr Parsons and his colleagues, which is yet to be named, stems from salty water spilling through the Bosphorus Strait from the Mediterranean into the Black Sea, where the water has a lower salt content.

This causes the dense water from the Mediterranean to flow like a river along the sea bed, carving a channel with banks around 115 feet deep and 0.6 of a mile wide. It is the only active undersea river to have been found so far.

Scientists have long suspected they can form, after sonar scans of the sea bed have revealed meandering channels in many of the world's oceans, although none have been found before to be have currents of water flowing through them.

Among the largest of these channels is off the coast of Brazil where the Amazon enters the Atlantic Ocean.

Most are believed to have formed when sea levels were much lower and the channels have been found to be up to 2,500 miles long and be several miles wide.

The channel in the Black Sea, although much smaller, is the only one to be found still flowing and proves that these mysterious channels are formed by underwater rivers.

Unlike ocean trenches, which are geological formations that form at the deepest parts of the ocean due to movements of the tectonic plates, the undersea river channels meander like rivers on land and form banks in the same way by eroding the silt from the bottom of the channel and building it up at the edges.

Dr Parsons found that the Black Sea river is flowing at around four miles per hour with 22,000 cubic metres of water passing through the channel every second - 350 times greater than the flow of the Thames and 10 times greater than Europe's biggest river, the Rhine.

The Black Sea river flows only for around 37 miles until it reaches the edge of the sea shelf and dissipates into the deep sea.

Dr Parsons said data from the research will also be important for oil companies looking to drill in areas where these rivers exist.

He said: "This is the first time we have been able to show that there is a flow through a natural channel system and take direct measurements of what the flow is like and how that is linked to the shape and morphology of the channel."