

# New tool pinpoints oil reserves

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(Phys.org) —A tool to precisely pinpoint where petroleum and gas reserves have accumulated has been created by an international team of scientists, including a geologist from the University of California, Davis.

The tool is a new index that provides a better understanding of how oil travels from where it was formed to where it has collected. The index, described in a recent study published in the journal *Scientific Reports*, could aid in the discovery of new [oil resources](#), while reducing the environmental impact of accessing those resources.

"The index should result in fewer incidents of failed drilling, which should reduce unnecessary [environmental disturbance](#)," said UC Davis geology professor and study co-author Qing-zhu Yin.

With further research, Yin said it could also be used to trace pollutants caused by oil spills and guide environmental mitigation in such instances.

"Generations and generations of people have been trying different tools," said Yin. "The problem is these tools have not been good indicators of the distance the oil travels, and there's a lot of variability depending on the oil source. In this study, we've teased out the facts irrelevant to distance migration and created a model. Then we applied it to the real world and found it works really beautifully."

There are two types of petroleum migration: Primary migration refers to the movement of oil out of the rocks where it was formed. Secondary migration is the movement of this oil to the [rock formation](#) reservoir

where it collects.

"Secondary petroleum migration in many basins around the world is poorly understood and yet the information about this process is most important for petroleum exploration," the study's authors write.

The scientists tested the index at the Xifeng Oilfield in Inner Mongolia, as well as the Western Canada Sedimentary Basin, which contains one of the world's largest reserves of petroleum and natural gas. They found it to be a reliable odometer for the distance the oil traveled.

**More information:** [bit.ly/17quqLD](https://bit.ly/17quqLD)

Provided by UC Davis

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