

Study suggests more fish than thought may thrive in the ocean's depths

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A study of the occurrence of fishes in the ocean's deepest reaches—the hadal zone, below 6000 meters -- has provided evidence that some species of fishes are more numerous at such depths than experts had thought. The authors of the study, which is published in the July/August issue of *BioScience*, observed 10 to 20 snailfish congregating at a depth of 7703 meters around a baited video lander in the Japan Trench.

The observation period lasted only five hours, so the occurrence of so many snailfish, which were of the species *Pseudoliparis amblystomopsis*, was a surprise. Together with a critical review of past records of fishes found at great depths, the observations suggest, however, that few species of fishes survive in the darkness of the hadal zone.

Observations at such extreme depths—five times farther down than the [oil leak](#) in the [Gulf of Mexico](#) resulting from the Deepwater Horizon rig—are technically demanding and consequently rare. The researchers who conducted the new study, Toyonobu Fujii of the University of Aberdeen, United Kingdom, and four of his colleagues, used a free-fall lander that made video recordings of an illuminated patch of the [sea floor](#) for one minute every five minutes. This enabled the scientists to distinguish at least 10 individual fish and record their behavior, which was similar to the behavior of fishes observed in 1965 from a bathyscaphe at a depth of 7300 meters in the west Atlantic. The fishes observed by Fujii and colleagues fed on crustaceans that were attracted to the mackerel bait.

How deep fish can live has long been a controversial question. Previous records of fish supposedly captured at great depth are rare and mostly based on trawls, a technique that is subject to uncertainty about exactly when a fish entered the trawl net. Fujii and colleagues remark that "current understanding of the hadal environment is inadequate." They nonetheless suggest that fish may routinely occur far deeper than previously thought in ocean trenches, and that "liparids do appear to dominate and characterize hadal fish fauna." More research is necessary, the authors say, to learn how these [fish](#) populations interact with those in shallower water.

Provided by American Institute of Biological Sciences

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