

Fish migrate to safer environments

March 1 2013



Antennas that detect pitted fish migrating between lake and stream. Credit: Jes Dolby

Research now reveals that fish can migrate to avoid the threat of being eaten. A new study from Lund University in Sweden shows that roach fish leave lakes and move into surrounding streams or wetlands, where they are safer from predators.

Every year, millions of animals migrate worldwide. In most cases, this is due to a shortage of food or other [environmental factors](#). However, few

research studies have focused on migration as a strategy to avoid predators. It is not easy to measure and quantify the risk of an animal being eaten.

"Our findings are therefore quite unique", says Ben Chapman, a researcher from the Department of Biology at Lund University.

In collaboration with Danish colleagues, the researchers at Lund University have published the results of their study. These show that fish, in this case roach, flee from a lake to surrounding streams and [wetlands](#) when there are a large number of cormorants hunting in the lake. Ben Chapman and his colleagues note that their findings are among the first evidence that the threat of predators can be a reason for seasonal migration in animals.

The researchers used an inventive method to track the fate of individual roach. They individually marked thousands of fish with a little chip resembling a [barcode](#), and then went to the cormorants' resting places and scanned the earth for chips in the birds' excrement – i.e. the remains of the fish that have passed through the birds' digestive systems. In this way, the researchers have been able to obtain large quantities of data on which fish were eaten. It emerged that it was mostly larger roach that fell victim to the cormorants.

The [fieldwork](#) has been carried out in the Danish lakes of Viborg and Loldrup on Jutland. In the next fieldwork season, the researchers plan to expand their work to include Krankesjön lake in southern Sweden and to investigate whether fish can change their [migration patterns](#) in response to increasing numbers of [predators](#).

The study has been published in the scientific journal *Biology Letters* [rsbl.royalsocietypublishing.org ... 121178.full.pdf+html](https://royalsocietypublishing.org/doi/10.1098/rsbl.2018.0117) and will also be featured in *Nature*.

More information: Skov, C. et al. Migration confers survival benefits against avian predators for partially migratory freshwater fish, *Biol. Lett.* 2013, 9, 2012 1178, 27 February 2013.

Provided by Lund University

Citation: Fish migrate to safer environments (2013, March 1) retrieved 27 April 2024 from <https://phys.org/news/2013-03-fish-migrate-safer-environments.html>

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