

# WHICH FISH WILL SURVIVE CLIMATE CHANGE?

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Threespine stickleback fish Credit: Rowan Barrett

With climate change accelerating species degradation, animals race for survival. As the planet grows grimmer, species that adapt to climate change have a higher chance of survival. Researchers from McGill University, Canada, have observed that the threespine stickleback fish (*Gasterosteus aculeatus*) can adapt to climatic changes fast. Their study is likely to help scientists predict which animals are likely to survive climate change.

“The modern version of Darwin's idea of evolution by natural selection posits that organisms with genes that favour survival and reproduction will tend to leave more offspring than their peers, causing the genes to increase in frequency over generations. As a result, populations become adapted or better-suited to their environments over time,” says lead author Alan Garcia-Elfring in a release. He is a PhD scholar at the Canada Research Chair of Biodiversity Science at McGill University. [The results were published recently](#) in *Molecular Ecology*.

Climate change shrinks marine life richness near equator: study

The stickleback fish can survive under a wide range of temperatures and are found in both fresh and marine water in the temperate region of the Northern Hemisphere. Using genome sequencing, the researchers examined six populations of threespine stickleback to study the natural selection of the species.

“We sequenced 'pools', which means that instead of sequencing DNA of individuals, we combine the DNA from individuals from a population and then sequence,” says Garcia-Elfring in an email to *The Hindu*.

Apart from adapting to seasonal changes the stickleback fish's ability to dwell in both sea and freshwater results in genetic changes of the species which helps them to cope with climate change. These genetic changes occurred in independent populations over a single season, highlighting just how quickly the effects of natural selection can be detected, he adds.

Warming oceans may cause sharks to be born smaller, exhausted and undernourished

The findings are important because they suggest that we may be able to use the genetic differences that evolved in the past as a way to predict how populations may adapt to environmental stressors like climate change in the future, he added.

When asked about the chances of any other animal surviving climate change, Garcia-Elfring says that many other species will survive the climate change but having a large spatial distribution likely helps.

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