

# Do male fish prefer them big and colourful?

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Credit: Springer

Male black-finned goodeid or mexcalpique fish know what they want when they pick a female to mate with; they prefer them big-bellied and as orange as possible. Interestingly, females displaying these traits are the ones most able to produce more offspring that survive, two researchers from the National Autonomous University of Mexico have found. The study by Marcela Méndez-Janovitz and Constantino Macías Garcia is published in Springer's journal *Behavioral Ecology and Sociobiology*.

The black-finned goodeid (*Girardinichthys viviparus*) from Mexico is a very promiscuous species of fish, with males constantly seeking a suitable partner to mate with. The females are only sexually receptive for a few days every two months after giving birth. The black-finned

goodeid is viviparous, meaning that young fish fully develop inside the female's body before they are born.

During courtship, males concentrate all their attention on only one female at a time. The wooing process is made even harder because females can be quite selective. Courtship consists of three basic elements, and is initiated when the male approaches the female he has chosen. His interest is signalled through his dorsal and anal fins standing erect. He then folds these fins over the female's body, in a type of embrace, before starting to swim in synchrony with her. The male will go on to occasionally attempt to grip the female more firmly and to copulate.

Méndez-Janovitz and Macías Garcia wanted to find out how male black-finned goodeid decide which female to single out for their attention. Ten males were held separately under laboratory conditions. Each one was presented with two pregnant females at a time for fifteen minutes. The females were photographed to catalogue their size, colouration and belly size. The researchers took specific note of how swollen the females' bellies were, as an indication of the number of offspring that they could be carrying.

Some of the females were visited for more than five minutes at a time and the time males spent with a female went hand in hand with the specific physical traits that she possessed. Males lingered longer with the wider bellied, and more orange-looking females. They also made more displays with their fins erect towards ones that possessed such traits. In a further experiment, it was found that the larger females were the ones who produced more offspring that ultimately could survive better. Colour did not play a role in this.

"Belly area had the largest and most positive influence on male behaviour," explains Méndez-Janovitz. "Males made longer visits and

performed more courtship displays to the females with wider bellies, while spending less time with thin-bellied females. They also made a greater effort to court females with bodies of a more orange hue."

"Some attributes of the [females](#) are therefore linked to their reproductive value, and seem to influence how much [time](#) and effort [males](#) devote to court them," adds Macías Garcia.

**More information:** Méndez-Janovitz, M. & Macías Garcia, C. (2017). Do male fish prefer them big and colourful? Non-random male courtship efforts in a viviparous fish with negligible paternal investment, *Behavioral Ecology and Sociobiology* [DOI: 10.1007/s00265-017-2385-2](https://doi.org/10.1007/s00265-017-2385-2)

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