

Fish can be picky eaters

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Three-spined stickleback

(PhysOrg.com) -- We all know how fussy kids can be about their food, but now new research suggests they're not the only ones.

When they come across a completely new type of [food](#), some sticklebacks are extremely reluctant to include it in their diets, while others are a lot more gung-ho in their approach, gobbling up anything that comes their way.

Until now, scientists knew that birds - like great tits, [zebra finches](#) and European blackbirds - could be picky about new types of food, but hadn't seen it in other animals.

The new findings suggest that fussiness could be universal among all predators.

The researchers behind the study say this may be important when it comes to releasing captive animals back into the wild.

Dr Rob Thomas from Cardiff School of Biosciences, who led the research, said: “When captive animals are reintroduced into the wild, they're faced with a whole host of [food choices](#). Fussy animals who've got used to a particular diet - while in a zoo for example - are less likely to do as well as the less fussy eaters.”

This suggests that [conservationists](#) will need to consider individual animal's needs rather than just thinking in generalities when returning creatures to their [natural habitat](#).

The findings - published in *Behavioural Ecology* - also show how different types of prey can either become extinct or thrive.

If a fussy fish avoids a new type of prey - the scientists call this 'dietary conservatism' - the new prey will probably do better than prey the fish isn't worried about eating, so its population explodes.

On the other hand, if fish are more adventurous in their approach to food, the new prey will be eaten to extinction.

Dr Thomas explained: 'It's a bit like us going to a party and being presented with a choice of blue or pink fairy cakes. If most of the party-goers are fussy and avoid the blue ones, the pink cakes will disappear and you'll be left with a pile of blue ones.’

To test whether or not fussy eating was confined only to birds, Dr Thomas and colleagues from Cardiff University, Trinity College Dublin and the University of Liverpool trained individual three-spined sticklebacks (*Gasterosteus aculeatus*) to expect a specific colour of prey.

Dr Thomas said: “Because predator food choices affect whether prey populations proliferate or not, we wanted to find out if dietary conservatism is a widespread trait in all predators.”

The team dyed the sticklebacks' favourite prey - a tiny plankton-like crustacean called Daphnia - with either green or brown food colouring. Once each fish had got used to either green or brown Daphnia, the researchers introduced the different coloured Daphnia to the fish.

The researchers found that when they encountered the new colour, the [fish](#) responded in two ways. They either ate it, which eventually drove the new colour extinct; or they avoided it, which ultimately let this new colour dominate the population.

Dr Thomas said: “Our results suggest this could be a universal behaviour among predator species. However, the biggest surprise was the fact that not all foragers within the same population have the same strategy - some are fussy and some are much more adventurous eaters.’

“Avoidance of novel colours could also help explain how warning colours can evolve in different types of [prey](#).”

Provided by Cardiff University

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