

Predators ignore peculiar prey

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Here are two salamanders. Credit: Fitzpatrick et al., BMC Ecology

Rare traits persist in a population because predators detect common forms of prey more easily. Researchers writing in the open access journal *BMC Ecology* found that birds will target salamanders that look like the majority - even reversing their behavior in response to alterations in the ratio of a distinguishing trait.

Benjamin Fitzpatrick, from the University of Tennessee, worked with Kim Shook and Reuben Izally to study the effects of the prevalence of a dorsal stripe among a group of model [salamanders](#) on the foraging behavior of a flock of Blue Jays. He said, "Maintenance of variation is a classic paradox in evolution because both selection and drift tend to remove variation from populations. If one form has an advantage, such as being harder to spot, it should replace all others. Likewise, random drift alone will eventually result in loss of all but one form when there

are no fitness differences. There must therefore be some advantage that allows unusual traits to persist".

The authors placed a selection of food-bearing model salamanders into a field for six days, with striped models outnumbering the unstriped by nine to one, or vice versa. On test days, the numbers were evened out. In each case, Blue Jays were more likely to attack the models that had been most prevalent over the previous six-day period. According to Fitzpatrick, "We believe that the different color forms represent different ways of blending in on the forest floor. Looking for something cryptic takes both concentration and practice. [Predators](#) concentrating on finding striped salamanders might not notice unstriped ones".

Fitzpatrick concludes, "Thus, the maintenance of color variation in terrestrial salamanders might be explained by the oldest and most obvious hypothesis - rare form advantage arises because predators tend to overlook rare prey".

More information: Frequency-dependent selection by wild birds promotes polymorphism in model salamanders, Benjamin M Fitzpatrick, Kim Shook and Reuben Izally, *BMC Ecology* 2009, 9:12
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