

Male crickets, but not females, change to safer mating tactics when the risk of being eaten by spiders is high

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At The currency of success in nature is the number of offspring you leave behind, so individuals may employ alternative ways to achieve mating success under different conditions. For instance, males may attempt to mate sneakily instead of performing conspicuous courtship displays, which may attract predators. Predation risk is believed to be a factor that can drive individuals to switch between different mating tactics, but this has rarely been studied experimentally.

The crickets you hear on summer evenings are males calling to attract females of their species to mate with them. But not all males sing: some may position themselves near other singing males and mate with females trying to approach calling males. This silent 'satellite' tactic can reduce costs of producing energetically expensive calls and lower their risk of being eaten. Similarly, females typically move around trying to locate calling males: do they move less when the risk of being eaten is high? And does this affect how many offspring they leave behind?

We addressed these questions in tree crickets that live on bushes that they share with their predators, green lynx spiders. We manipulated their risk of being scared and eaten by maintaining different ratios of numbers of spiders to crickets inside outdoor enclosures built in their natural habitat. We paint-marked



every cricket with a unique colour code and observed the risk they experienced from spiders, their mate searching behaviours, and how long they survived. With increasing predation risk, males reduced how much they called and increased their frequency of movement out of bushes. Movement of males was on average directed towards other calling males they could hear around them, and males often settled on a bush next to one containing a calling male, suggesting satellite tactics. Interestingly, this shift in behaviour cost them precious mating opportunities, but they lived to try again another day! Females, however, did not alter their movement behaviour in response to the increased risk of being eaten. Why females, unlike males, do not change to the safer option of moving less when there are many predators around, remains an interesting mystery.