GALLOY V., LO PRESTI W. & DENOËL M. 2008. Effect of temperature increase on the courtship behavior and the fitness in the palmate newt. 4th European Conference on Behavioural Biology, Dijon (France), 18-20 July 2008. Abstract book: 264.

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Effect of temperature increase on the courtship behavior and the fitness in the Palmate newt

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A trend in global warming is now undeniable. Increases of global temperatures have resulted in measurable shifts in the distribution, phenology and survival of some plant and animal species. However, the mechanisms showing the link between global warming and declines remain unclear. The aim of this study was to examine whether courtship displays and fitness could be affected by a temperature increase. To this end, we compared the sexual behavior and egg-laying traits at naturally occurring temperatures (14 C, 18 C and 22 C) in palmate newts (*Triturus helveticus*). First, our results underline the importance of female role in the male courtships. The majority of male behaviors are affected by the female responsiveness, which is temperature dependent. They also show that water temperature increase has a negative effect on the fecundity of female newts. Females lay half as many eggs at high temperatures as they do at low temperatures and of these only one third hatch. The demonstration of such a detrimental effect shows that more experimental studies are required to understand the proximate mechanisms of global warming.

Notes

Programme, Information and Abstracts