

CONSEQUENCES OF TEMPERATURE INCREASE ON THE MALE AND FEMALE FITNESS IN THE PALMATE NEWT

V. Galloy, W. Lo Presti, M. Denoël

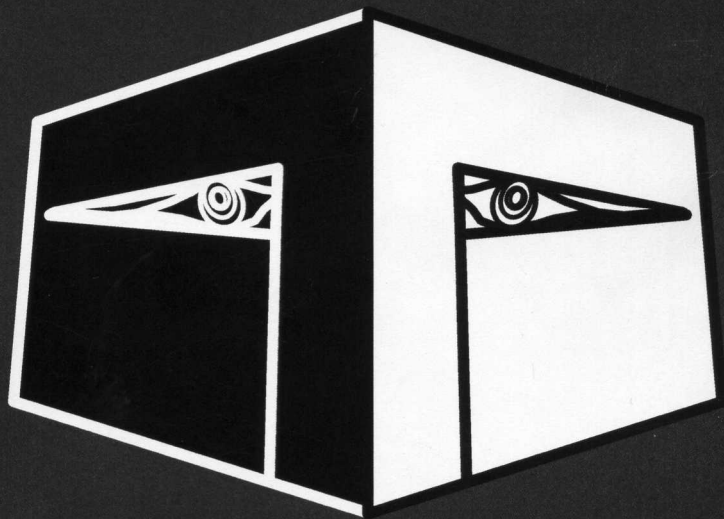
Laboratory of Fish and Amphibian Ethology, Behavioural Biology Unit, University of Liège, Liège, Belgium

Because they are ectotherms, amphibians are expected to be particularly affected by changes in the temperature of their habitat. There is now evidence that some amphibian species can respond to a warmer climate by changes in their behaviour (e.g. timing and duration of breeding activity). However, it is not known whether the forecasts of climate change could have a detrimental effect on their fitness. The aim of this study was to test this hypothesis by comparing key proxies of fitness in both male and females, i.e. male courtship duration, sperm transfer success and fecundity at three naturally occurring temperatures (14°C, 18°C and 22°C) in palmate newts (*Lissotriton helveticus*). First, our results underline an effect of temperature on the courtship duration: males performed shorter displays at higher temperature. However, the sperm transfer was similar at the three temperatures. On the other hand, water temperature increase had a negative effect on the fecundity of female newts. Half of the eggs were laid at the highest temperature. Temperature increase has strong consequences on the fitness of newts with more detrimental effects on the long term (fecundity). These results highlight that even small changes in climate could have a high impact on natural populations but that more long-term studies are needed to model their long-term effects on natural populations.

15th BENELUX CONGRESS OF ZOOLOGY

30 – 31 October 2008
University of Liège

SCIENTIFIC PROGRAMME



LECTURE AND POSTER ABSTRACTS
LIST OF PARTICIPANTS

ORGANIZING COMMITTEE

ORGANIZATION:

Koninklijke Belgische Vereniging voor Dierkunde (KBVD)/Société Royale Zoologique de Belgique (SRZB)/Royal Belgian Zoological Society (RBZS)
Koninklijke Nederlandse Dierkundige Vereniging (KNDV)/Royal Dutch Zoological Society (RDZS)
Association des Biologistes Luxembourgeois (ABIOL)

FINANCIAL SUPPORT:

University of Liège
F.R.S.-FNRS
Polytec S.A.
Noldus
Avisoft Bioacoustics

ORGANIZING COMMITTEE:

Patrick Dauby
Bruno Frédérick
Jean-Christophe Plumier
Quentin Mauguit
Orphal Colleye
Grégory Fabri
Gilles Lepoint

SCIENTIFIC COMMITTEE:

Dominique Adriaens
Patrick Dauby
Mathieu Denoël
Ann Huysseune
Celia Joachim-Justo
Gilles Lepoint
Fabienne Nyssen
Jean-Christophe Plumier
Sam Van Wassenbergh
Erik Verheyen
Hilde Vervaecke

WEBMASTER:

Quentin Mauguit
www.bcz15.ulg.ac.be

DESIGNER:

Grégory Fabri