



Seewiesen Colloquia

Speaker invited by: Goerlitz Research Group

Thursday, November 24, 2016, 13h, in House 4, Lecture Room

Linking communication strategies, roosting ecology, and social structure in Spix's disc-winged bat, *Thyroptera tricolor*

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The limited availability of refuges may represent an important factor promoting the evolution of sociality, particularly in bats. Spix's disc-winged bats (*Thyroptera tricolor*) show highly specialized morphological adaptations that enable individuals to roost inside furred musoid leaves. This roosting ecology presents major challenges, as leaves rapidly unfurl, forcing bats to locate new roosts on a daily basis. Despite the reliance of *T. tricolor* on such ephemeral roosting resources, bats form stable group associations. In this presentation, I will discuss work done by myself and Dr. Karina Montero, which focuses on characterizing the behavioural patterns and communication strategies use by this species, which somehow maintains high group cohesion while moving to a new roosting location on a daily basis. In the first study presented, video and acoustic monitoring was used to assess how groups identify suitable leaf roosts and determine if acoustic signals facilitate group interactions during nightly activity. In the second study, patterns of geographic variation in the acoustic features of two contact calls were compared with patterns of genetic differentiation of two Costa Rican populations separated by a mountain range. In the third study, an automated telemetry system was used to examine the nocturnal movement patterns of group members to determine the patterns of space use and dyadic interactions. Overall, this work contributes to our understanding of the behavioural strategies used by free-ranging bats to maintain contact with group members and provides insight into the role of shelter stability in the evolution of the *T. tricolor* social system

Who is Eric Gillam

- 2007 PhD University of Tennessee at Knoxville, USA
- 2008 Postdoctoral Fellow University of Regina, CANADA
- 2009 Professor of Biological Sciences North Dakota State University, USA

Selected publications:

- Gillam, EH and MB Fenton 2016. Roles of Acoustic Social Communication in the Lives of Bats. In: Springer Handbook of Auditory Research: Bat Bioacoustics (Ed. by MB Fenton, AD Grinnell, AN Popper, and RR Fay). Springer press, pp. 117-139
- Montero, BK and EH Gillam. 2015. Behavioral strategies associated with using an ephemeral roosting resource in Spix's disc-winged bat. *Animal Behaviour*. 108: 81-89
- Chaverri, G, EH Gillam and TH Kunz. 2012. A call-and-response system facilitates group cohesion among disc-winged bats. *Behavioral Ecology*. 24(2): 481-487
- Gillam, EH and G Chaverri. 2012. Individual and group signatures in the contact calls of Spix's disk-winged bat, *Thyroptera tricolor*. *Animal Behaviour*. 83: 269-276.