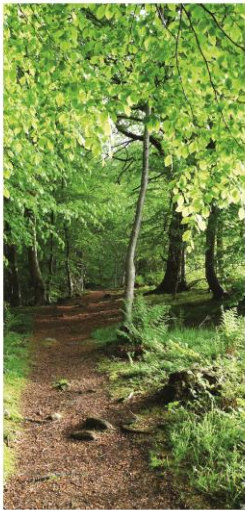




## Key Notes

---



Nancy Collins Johnson  
Northern Arizona University, USA

Graeme Cumming  
James Cook University, Australia

Nancy Dise  
Centre for Ecology and Hydrology, Edinburgh, UK

Christian Messier  
University of Quebec, Canada

Richard Primack  
Boston University, USA

**GFÖ 2015**  
**Ecology for a sustainable future**

---

**Geschäftsstelle der Gesellschaft für Ökologie**  
Institut für Ökologie  
Technische Universität  
Berlin Rothenburgerstr.  
12  
D-12165 Berlin  
Tel.: 030-31471396  
Fax.: 030-31471355

**Verhandlungen der Gesellschaft für Ökologie, Band 45**

Herausgegeben im Auftrag der Gesellschaft für Ökologie von apl. Prof. Dr. Michael Bredemeier, Sektion Waldökosystemforschung, Zentrum für Biodiversität und nachhaltige Landnutzung (CBL), Georg-August-Universität Göttingen

© **Gesellschaft für Ökologie**  
Göttingen 2015, ISSN: 0171-1113

**Contact:**  
Universität Göttingen  
Prof. Dr. Michael Bredemeier,  
Sektion Waldökosystemforschung, Büsgenweg 2  
D- 37077 Göttingen

**KCS Kuhlmann Convention Service**  
Heike Kuhlmann  
Rue des Chênes  
12 CH-2800 Delémont  
+ 41-32-4234384  
[info@kcs-convention.com](mailto:info@kcs-convention.com)

The 45<sup>th</sup> annual conference of the Ecological Society of Germany, Austria and Switzerland (GfÖ) is taking place from 31<sup>st</sup> August to 04<sup>th</sup> September 2015 at the University of Göttingen. Host of the conference is the Centre for Biodiversity and Sustainable Land Use (CBL), University of Göttingen.

**Local Organizing Committee**

Chair: Prof. Dr. Christian Ammer, University of Göttingen  
Co-Chairs: Prof. Dr. Teja Tschardtke, Prof. Dr. Kerstin Wiegand, University of Göttingen  
Proceedings editors: Prof. Dr. Michael Bredemeier, Dr. Juliane Steckel, Ursula Seele, University of Göttingen  
Field Trip planning: Dr. Simone Pfeiffer, University of Göttingen

**Scientific Programm Committee**

Prof. Dr. Christian Ammer, Prof. Dr. Michael Bredemeier,  
Prof. Dr. Alexander Knohl, Prof. Dr. Holger Kreft,  
Dr. Simone Pfeiffer, PD Dr. Martin Potthoff,  
Prof. Dr. Stefan Scheu, Prof. Dr. Teja Tschardtke  
Dr. G. Wiedey, Prof. Dr. Kerstin Wiegand

The book is also available for download as electronic document on the conference web site ([www.gfoe-2015.de](http://www.gfoe-2015.de))

**Production:** Centre for Biodiversity and Sustainable Land Use (CBL), University of Göttingen, Büsgenweg 2, 37077 Göttingen, Germany

**Editors:** Prof. Dr. Michael Bredemeier, University of Göttingen

**Cover design:** Dr. Juliane Steckel, University of Göttingen

**Print:** Görlich&Weiershäuser, Druckerei und Verlag, Deutschhausstr. 42, 35037 Marburg, Germany

The respective authors are responsible for the contents of this booklet.

A major part of biodiversity is dedicated to developing countries in the tropics. This is a big challenge for conservation as human needs and political problems often hinder nature conservation. Madagascar belongs to the worldwide hotspots for biodiversity but is at the same time one of the poorest countries. Lake Alaotra is Madagascar's biggest fresh water lake supporting several locally endemic species. Conservation in the area is difficult due to thriving poverty and human population increasing drastically over the last decades. This has led to a dramatic loss of the naturally occurring flora and fauna and to degradation of the lake itself (e.g. lake shrinkage, hypoxia). Our project analyzed the impacts of human activities and invasive species (such as the water hyacinth) on the lake and its wetlands. In addition, we investigated effective conservation methods and alternative local sources of income suitable for the region. Hereby, we mainly focused on the use of the water hyacinth as a new source of fertilizer and raw material for handicrafts. Our results show that the conservation of even very small areas can currently be enough to successfully save endangered species such as the locally endemic Alaotran Bamboo Lemur. However, bigger areas would be needed in the future to avoid the decrease of species genetic pools. The use of the water hyacinth seems to be a very promising possibility to reduce the impacts of the plant on the lake ecosystems and to provide alternative fertilizer and income for the local people. Producing different fertilizer out of the water hyacinth is locally feasible and their application led to a higher biomass production in comparison to the commonly used chemical and expensive fertilizer (tested in a growth experiment with local crop species). In addition, the produced water hyacinth handicrafts suit to expectations of town based retailers and customers. This encourages the use of this plant as new local source of income. However, as in all cases of conservation projects capabilities improvements and deep involvement of the local community are main factors assuring the success of such projects.

---

### **O5 - Human-carnivore conflicts can be associated with diseases of domestic animals and climate change: a case study from Iran**

Igor Khorozyan<sup>1</sup>, Mahmood Soofi<sup>1</sup>, Arash Ghoddousi<sup>1</sup>, Amirhossein Khaleghi Hamidi<sup>2</sup>, Matthias Waltert<sup>1</sup>

<sup>1</sup>Workgroup on Endangered Species, Georg-August University of Göttingen, Göttingen, DE, igor.khorozyan@biologie.uni-goettingen.de

<sup>2</sup>Persian Wildlife Heritage Foundation, Tehran, IR

Human-carnivore conflicts challenge biodiversity conservation and local livelihoods, but the role of diseases of domestic animals and climate in such conflicts is poorly understood. We analyzed empirical data from all 34 villages around Golestan National Park (Iran) on the relationships between the probabilities of human-leopard (*Panthera pardus*) conflicts and diseases of domestic animals. Then, we applied the multi-model approach (generalized linear modeling GLM, Multivariate Adaptive Regression Splines MARS, Bayesian Belief Network BBN, BIOCLIM and DOMAIN) to

explore the climate-diseases-conflicts system. We found that the more villagers were dissatisfied with veterinary services, the more likely they were to lose livestock and dogs to leopard predation. Dissatisfaction occurred when vaccination crews failed to visit villages at all or, in most cases, arrived too late to prevent diseases from spreading. We suggest that increased morbidity of livestock makes them particularly vulnerable to leopard attacks. Moreover, conflicts and dog killing were higher in villages located closer to the boundaries of the protected area than in distant villages. In its turn, lower continentality and higher humidity (precipitation) patterns led to higher occurrence of diseases. As the Community Climate System Model (CCSM4) scenarios forecast aridization of the study area in 2041-2080, they also predict a resultant decline of disease and conflict probabilities by 18.4-21.4% and 10.4-11.9%, respectively, in the same time frame. We appeal for improved enforcement and coordination of veterinary services in our study area, and propose several priority research topics such as veterinarian studies, role of wild prey in diseases of domestic animals, and further analysis of potential conflict predictors. We also conclude that diseases can drive human-carnivore conflicts which may become less intense with projected aridization of the humid environment.

---

### **O6 - A nose for death: Integrating trophic and informational networks for conservation and management**

Menna E. Jones<sup>1</sup>, Raimund Apfelbach<sup>2</sup>, Peter B. Banks<sup>3</sup>, Elissa Cameron<sup>1</sup>, Chris R. Dickman<sup>3</sup>, Anke S. K. Frank<sup>1</sup>, Stuart McLean<sup>4</sup>, Iain McGregor<sup>5</sup>, Dietland Müller-Schwarze<sup>6</sup>, Michael Parsons<sup>7</sup>, Elisa Sparrow<sup>8</sup>, Daniel T. Blumstein<sup>9</sup>

<sup>1</sup>University of Tasmania, School of Biological Sciences, Hobart TAS 7005, AU

<sup>2</sup>Universität Tübingen, Tübingen, DE

<sup>3</sup>University of Sydney, School of Biological Sciences, Sydney, AU

<sup>4</sup>University of Tasmania, Division of Pharmacy, School of Medicine, Hobart, AU

<sup>5</sup>University of Sydney, Dept. Psychology, Sydney, AU

<sup>6</sup>State University New York, New York, US

<sup>7</sup>Columbia University, New York, US

<sup>8</sup>Parks, South Australia, AU

<sup>9</sup>University of California, Department of Ecology and Evolutionary Biology, Los Angeles, US

Management of wildlife using non-lethal means is becoming increasingly important, and can be achieved potentially by modifying the behaviour of target species. The approach works by manipulating the cost-benefit relationships used by individuals to decide which habitat patches to visit and what to do once there, in particular how long to stay and whether to forage. For prey species—especially mammals, which are most often problematic for managers—there is considerable interest in applying predator odours to manipulate these decisions, but not all attempts succeed. The behaviour-modification approach assumes implicitly that manipulations only have direct consequences; it ignores indirect effects that potentially could account for previous management failures. Here, we propose a novel food web-based approach that should profitably deliver effective new management