Horst Korn, Katrin Kraus and Jutta Stadler (Eds.)

Proceedings of the European Conference on Biodiversity and Climate Change – Science, Practice and Policy –

BfN-Skripten 310

2012

Proceedings of the European Conference on Biodiversity and Climate Change 2011 – Science, Practice and Policy –

Bonn, Germany, 12-13 April 2011

Organised by the German Federal Agency for Nature Conservation (BfN) with the support of the University of Greifswald and in collaboration with the European Network of Heads of Nature Conservation Agencies (ENCA)

Compiled by:

Horst Korn
Katrin Kraus
Jutta Stadler

Cover photo: Adonis Blue (*Polyommatus bellargus*), gathering of males on dung
(© Peter Ginzinger)
While climate change – at least in Central Europe – will probably only have relatively modest impact on the distribution of this butterfly species, the maintenance of extensive grassland management is of central importance.

Editors' addresses:

Dr. Horst Korn, Jutta Stadler
Bundesamt für Naturschutz
INA Insel Vilm
18581 Lauterbach/Rügen, Germany
E-Mail: horst.korn@bfn-vilm.de
jutta.stadler@bfn-vilm.de

Katrin Kraus
Ernst-Moritz-Arndt Universität Greifswald
Grimmer Straße 88
17487 Greifswald
E-Mail: katrin.kraus@uni-greifswald.de

This publication is included in the literature database "***DNL-online***" (www.dnl-online.de)

BfN-Skripten are not available in book trade but can be downloaded in a pdf version from the internet at: http://www.bfn.de/0502_international.html?&no_cache=1

Publisher: Bundesamt für Naturschutz (BfN)
Federal Agency for Nature Conservation
Konstantinstrasse 110
53179 Bonn, Germany
URL: http://www.bfn.de

Printed by the printing office of the Federal Ministry of Environment, Nature Conservation and Nuclear Safety.

Printed on 100% recycled paper.

ISBN 978-3-89624-044-6

Bonn, Germany 2012

Contents

Planning and Management Strategies of Nature Conservation in the Light of Climate Change

CHRISTIAN WILKE & STEFAN HEILAND

Climate change will seriously affect aims, strategies and instruments of nature conservation. This is caused by direct effects of changing climatic conditions on nature and landscape as well as by indirect effects which arise from societal measures to mitigate climate change and to adapt to it. Impacts will concern water, soil, flora and fauna but also the landscape as a whole as well as the scenery – and therefore aesthetical and recreational values of landscapes for humans. Although climate change has to be regarded as a global phenomenon, its characteristics can differ from region to region: Even if rising average temperatures occur globally, precipitation rates deviate strongly. Besides, predictions of precipitation rates as well as those for extreme weather events (rainstorms, hurricanes, droughts) are much more uncertain than temperature predictions.

The research project „Planning and Management Strategies of Nature Conservation in the Light of Climate Change“[1] discusses the question how nature conservation has to react to those changes and the uncertainties linked with them. Special attention has been paid to Landscape Planning as an area-covering planning instrument. As to nature conservation in general it can be said that there is no need to modify the aims of nature conservation as basically defined in the German Federal Nature Conservation Act. Rather it seems necessary to move the main focus from a ‚static' protection of species and biotopes to a more ‚dynamic' approach to protect and enhance the functioning of ecosystems as a whole. Therefore aspects which are especially relevant to or affected by climate change have increasingly to be taken into account, such as the services of ecosystems (woods, bogs), sinks or sources of greenhouse gases, landscape water regulation, flooding, soil erosion or human health in urban areas. Traditional aims and tasks in nature conservation have to be re-evaluated in the light of climate change.

Concepts like vulnerability and resilience, the ecosystem approach, adaptive management or risk management are often mentioned when planning solutions for the challenge of climate change are discussed. But a closer look at those concepts shows that their usefulness cannot be judged in general, because perceptions of them differ considerably (e.g. vulnerability, resilience, adaptive management), or because they were not especially developed for nature conservation and/or climate change (e.g. ecosystem approach, adaptive management, risk management). Particularly the ecosystem approach is too abstract to be used in concrete situations. Consequently, further research is essential for the application of those concepts in the practice of nature conservation and landscape planning.

Which requirements have to be fulfilled by landscape planning to cope with the effects of climate change? Firstly it has to counteract the negative impacts of climate change to nature conservation, and secondly to contribute to the societal adaptation to climate change and to climate protection (mitigation of

[1] The results of the project are published in German as: Wilke, C., Bachmann, J., Hage, G. & Heiland, S. (2011): Planungs- und Managementstrategien des Naturschutzes im Lichte des Klimawandels. Naturschutz und Biologische Vielfalt, Heft 109. Bonn-Bad Godesberg.

climate change). In order to fulfil these tasks landscape planning has to consider climate change and its impacts while dealing with all “traditional” subjects of protection. Above that new topics demand increasing attention, like climatic preconditions of human health or the storage of green-house gases in ecosystems. Besides new requirements concerning topics, the planning procedure itself has to be changed as the different uncertainties combined with climatic change do no longer allow the customary ‘deterministic’ planning approach. Therefore the planning procedure has to be suitable for the handling of uncertainties, for maintaining future options for decision-making and for flexible reactions to new knowledge or unforeseen developments. In addition to that the long-term positive effects of measures have to be ensured and synergies with other land uses have to be searched for (win-win-solutions). The necessary prerequisite to realize those aspects is a cyclic planning-process in which important stakeholders and experts are involved. Due to that scenario-techniques and monitoring are getting increasingly important.

Despite all this, special attention has to be paid to the fact that landscape planning must not be overloaded with new tasks. Therefore it is crucial to combine the different levels of landscape planning (from ‘Länder’-level to the level of municipalities) in a way which allows fulfilling all the requirements mentioned above together with the least possible additional expenditure. Therefore the regional level (Landschaftsrahmenplanung) should gain a central role, as it can clearly define the usually more abstract guidelines of the ‘Länder’-level (Landschaftsprogramm) on the one hand while providing a service-function for the municipal level on the other hand.

Practitioners will be especially interested in concrete answers to the question how they can consider climate change in the different working steps while a landscape plan is drawn up. Although it is not possible to give detailed answers suitable for every situation, some indications can be given. In the final report they are expressed as questions forming a kind of ‘check-list’.

Altogether a need for basic and practice-oriented further research and development remains. There is no sharp boundary between science and practice, rather a close cooperation between both sides seems necessary. The final report of the project offers a sound basis for such further consideration of climate change and its impacts on nature conservation and landscape planning in theory and practice.

Contact

Dr. Christian Wilke and Prof. Dr. Stefan Heiland
Technische Universität Berlin (Berlin Institute of Technology)
Institute of Landscape Architecture and Environmental Planning
Department of Landscape Planning and Development
Sekr. EB 5
Straße des 17. Juni 145
Germany – 10623 Berlin
http//www.landschaft.tu-berlin.de