

## Contents

<b>Preface</b> .....	5
<b>Acknowledgements</b> .....	6

### Information Technologies

<b>Biological Collection Databases in Europe: Status and Perspective</b> ANTON GÜNTSCH, ANDREA HAHN, WALTER G. BERENDSOHN .....	9
<b>Data Mining and Interactive GIS for Analysing and Disseminating Biodiversity Information</b> MICHAEL MAY .....	19
<b>The Global Register of Migratory Species (GROMS): Present Status and Perspectives</b> KLAUS RIEDE .....	33
<b>Principles, Practices and Current Directions in Information Management. Case Example: the Biodiversity Conservation Information System (BCIS)</b> JOHN R. BUSBY .....	43

### Population Genetics

<b>Molecular Identification of Sturgeon Species: Science, Bureaucracy, and the Impact of Environmental Agreements</b> VADIM BIRSTEIN and PHAEDRA DOUKAKIS .....	47
--	----

### Satellite Tracking

<b>Conservation of the Lesser White-fronted Goose: New Results from Satellite Telemetry</b> INGAR JOSTEIN ØIEN and TOMAS AARVAK .....	67
--	----

<b>Satellite-Telemetry of Humboldt Penguin (<i>Spheniscus humboldti</i>) Migratory Behaviour: a Review</b>	
BORIS CULIK .....	77
<b>Wildlife Telemetry and Tracking by Satellite</b>	
ANNE MARIE BRÉONCE .....	101
<b>First Experiments on Bluefin Tuna Tagging Using „Pop Up“ Satellite Tags in the Mediterranean and Eastern Atlantic</b>	
GREGORIO DE METRIO, GEOFF P. ARNOLD ET AL. ....	107
<b>Satellite Tracking of White Storks (<i>Ciconia ciconia</i>)</b>	
WILLEM VAN DEN BOSSCHE .....	115
<b>Conservation</b>	
<b>Lemmings, Predators and Brent Geese – an International Research Project on the Taimyr Peninsula, Russia</b>	
BARWOLT S. EBBINGE .....	119
<b>Migrating Birds Know No Boundaries – an Interdisciplinary Concept</b>	
YOSSI LESHEM .....	131
<b>The International Waterbird Census Database</b>	
LIEUWE HAANSTRA .....	151
<b>Bats and the UK National Bat Monitoring Programme</b>	
ANTHONY M. HUTSON .....	153
<b>ASCOBANS and ACCOBAMS: Cetacean Protection through the Bonn Convention</b>	
PATRICK VAN KLAVEREN .....	159

## Preface

The present volume results from a workshop on behalf of the 20<sup>th</sup> anniversary of the „Convention on the Conservation of Migratory Species of Wild Animals“ or „Bonn Convention“, celebrated in Bonn in 1999. The workshop was funded and organised by the newly founded, interdisciplinary „Center for Development Research“ (ZEF) at the University of Bonn. Among its current projects is the „Global Register of Migratory Species (GROMS)“, which is embedded into its research agenda on development aspects of ecology and biodiversity.

Sustainable development and biodiversity finally got the necessarily high priority on the agenda of policy makers. It is now up to scientists to prevent that these important thematic areas remain mere buzzwords, and to provide sound data on species distribution, their conservation status and threats to biodiversity. Migratory animals are a particular challenge for the application and implementation of international and national legal instruments, as they cross borders and in many countries only have a status of visitors (though not always treated with hospitality).

New information technologies are of increasing importance to monitor and document species information. Within the last years, the World Wide Web emerged as an important platform for both environmental organisations and scientists, providing rapid access to biodiversity data. But the existing huge data sets require harmonisation, integration and validation. The GROMS is tailored to store this scattered information within one database, including geographic information on migration. The present workshop was an excellent opportunity to discuss possible cooperation with other database projects and ongoing initiatives related to bioinformatics. At the same time, severe knowledge gaps became evident. As shown by this volume, new technologies provide a huge variety and quantity of high-precision data on migratory species, most of which provide surprising insights about their life history and migratory pathways. They lead to clear recommendations for conservation policy, which hopefully will be implemented by the Bonn Convention with its existing agreements.

Prof. Dr. H. Vogtmann

President  
Federal Agency for Nature Conservation (BfN)  
Bonn, Germany

Prof. Dr. J. von Braun

Director  
Center for Development Research (ZEF)  
Bonn, Germany

## **Acknowledgements**

This workshop was funded by the Department for Economics and Technological Change (Professor von Braun), Center for Development Research (ZEF), University of Bonn. The German Federal Environment Ministry (BMU), Claudia Gruszinkat and Martina Berg, Bonn, assisted in its organisation. Publication of the proceedings was facilitated by the funding provided for the Global Register of Migratory Species (GROMS) by the Federal Environment Ministry through the Federal Agency for Nature Conservation (BfN). Thanks are due to Christina Endemann and Bernd Bruhns for help with layout and editing, and Uwe Vaartjes, Museum Koenig, Bonn, for cover design. I am indebted to Horst Gruttke, Federal Agency for Nature Conservation, Bonn, for critically reading and providing helpful comments on the manuscripts.