ABSTRACT BOOK

27TH INTERNATIONAL CONGRESS FOR CONSERVATION BIOLOGY

4TH EUROPEAN CONGRESS FOR CONSERVATION BIOLOGY

ICCB ECCB 2015

MISSION BIODIVERSITY: CHOOSING NEW PATHS FOR CONSERVATION

MONTPELLIER, FRANCE

2-6 AUGUST 2015

Society for Conservation Biology

ICCB ECCB 2015

ABSTRACT BOOK

The Society for Conservation Biology (SCB), a global society of conservation students and professionals, held in August 2015 in Montpellier, France its 27th International Congress for Conservation Biology, jointly hosted with the 4th European Congress for Conservation Biology. SCB celebrated its 30th birthday with its largest conference ever, comprised of 2063 attendees, 782 poster presentations and 943 oral presentations organized in 74 contributed sessions and 73 symposia sessions.

The theme of the conference "Mission Biodiversity: Choosing new paths for conservation" represented a response to the fact that the traditional methods for conserving biodiversity need to adapt and change to match the ever-changing nature and needs of today's world. It emphasized that the same rapid and ongoing biophysical and societal changes our world is facing also affect conservation science and practice.

We are asking very different questions than what we asked years ago, and using different methods to get the data we need to answer these questions. Increasingly, we work with people from different disciplines such as political science, computer science, economics, and social science, among others. We investigate different challenges that range from new pathogens and invasive species to new drivers of habitat loss such as oil palm production in West Africa to tangled socio-political issues such as the growing illegal trade of species and their parts on the internet. We are developing new methods and tools to address these challenges with on-the-ground conservation, such as using drones and new remote-sensing technology for monitoring and conservation enforcement or citizen science projects for collecting data and engaging the public. Unsurprisingly, one of the most common words in abstracts presented at ICCB-ECCB abstracts was "change." The ICCB-ECCB 2015 theme and its scientific content, summarized in this Abstract Book, document these changes and our need to keep up with, and even anticipate them for better conservation science and practice.

ICCB-ECCB 2015 featured several presentations, workshops and training courses that provided solutions to prevent or mitigate anthropogenic threats, and celebrated several exemplary success stories through the mini-plenaries from the Society's Distinguished Service and Early Career Conservationist awardees. ICCB-ECCB 2015 also featured an open debate starring Peter Kareiva and Clive Spash on Conservation Biology today; and how its fundamental principles and values are changing over time.

We would like to thank all participants, organizers and sponsors of ICCB-ECCB 2015 for their excellent work at the conference, and we look forward to many more conservation success stories in the coming years.

—Piero Visconti, Marit Wilkerson, Edward Game and Raphael Mathevet

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How To Cite This Book:

Visconti P., Game E., Mathevet R., Wilkerson M. Proceedings of the 27th International Congress for Conservation Biology and 4th European Congress for Conservation Biology. Montpellier 2-6 August 2015. SCB; 2015.

Example Citation Of A Contribution To This Book

Watson J. Mapping vulnerability and conservation adaptation strategies under climate change across global terrestrial ecosystem [abstract]. In: Proceedings of the 27th International Congress for Conservation Biology and 4th European Congress for Conservation Biology. Visconti P., Game E., Mathevet R., Wilkerson M. editors. Montpellier 2-6 August 2015. p. 745. SCB; 2015.

For any queries on regards to this book of abstracts please contact Nathan Spillman nspillman@conbio.org

Society for Conservation Biology

ABOUT THE SOCIETY FOR CONSERVATION BIOLOGY

SCB is a global community of conservation professionals with members working in more than 100 countries who are dedicated to advancing the science and practice of conserving Earth's biological diversity. The Society's membership comprises a wide range of people interested in the conservation and study of biological diversity: resource managers, educators, government and private conservation workers, and students.

SCB publishes the flagship peer-reviewed journal of the field, *Conservation Biology,* and the cutting-edge online journal, *Conservation Letters.* The Society provides many benefits to its community, including local, regional, and global networking, an active conservation-policy program, and free online access to publications for members in developing countries. SCB also administers a postdoctoral program, the David H. Smith Conservation Research Fellowship Program, sponsored by the Cedar Tree Foundation.

and highlight the complexity of using citizen science to fill a data gap and support participants in achieving desired conservation outcomes.

CLIMATE REFUGIA AND BIODIVERSITY CONSERVATION IN AN ERA OF ANTHROPOGENIC CLIMATE CHANGE

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Climate refugia maintained populations of some species during periods of paleoclimatic change and could mitigate extinction risks during anthropogenic climate changes. Because both climatic variability and rates of change can cause species' populations to shift or disappear, the rate of climate change and the magnitude of climatic variability within refugia should be lower than in surrounding areas if climate refugia are to provide biologically significant shelter for species. Using long term, high resolution climate data across the most intensively observed regions of North America, we identify areas where relative variability and rates of change are low despite the substantial climatic shifts observed subsequent to 1975. Rate and interannual variability of climate are assessed, at multiple spatial scales (ranging from 2800 to 230,000 km2) using mean annual temperature and precipitation seasonality data from 1975-2010. There are significant areas distributed across much of continental North America that have, to date, shown potential as climatic refugia. However, the utility of these refugia hinges on whether they are distributed across areas with high species diversity or coincide with existing or potential protected areas. Climate refugia overlap with such areas is limited, suggesting that species vulnerabilities may be greatest where refugia are most limited in their extent.

INDICATORS OF ECOLOGICAL CHANGE: AN INTER-SITE COMPARISON OF A CONCURRENT MONITORING OF WILDLIFE OCCURRENCE AND HUNTING ACTIVITY IN CENTRAL AFRICA

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Choosing and adapting wildlife management options ideally requires appropriate and affordable information on trends in animal populations and offtakes over several years. In African tropical forests, most studies have been documenting separately wildlife abundance, offtake and consumption of bushmeat. In addition, most site-level assessments were so far implemented using different methodologies, thus limiting the potential for meta-analysis at inter-site level. Yet, measuring concurrently spatial patterns of wildlife occurrence and hunting activities at different sites along gradients of human pressure (land conversion, human density) may provide a useful basis to identify indicators of non-sustainability of hunting, and to help predict temporal trends at site level. In this study, we implemented a standard protocol aiming at assessing bushmeat use and availability over 6 hunting grounds located in the Congo Basin (Gabon, Congo, and Democratic Republic of Congo). This preliminary diagnostic was conducted to evaluate the feasibility of testing community-based hunting approaches in the framework of a FAO/GEF project. For this purpose, we mapped the contours and the principal features of every hunting ground, and characterized the management rules, wildlife resources, hunting practices, offtakes and consumption. Results of the comparison between sites show how indicators of game species availability (e.g. species diversity, abundance indices, etc.) and resource use (e.g. catch per unit effort, ratio between small and large body-sized species, composition of the catch, etc.) vary in contexts of contrasted hunting pressure. We discuss their respective relevance as a basis for implementing evidence-based wildlife management strategies through adaptive management.

49-HABITAT FRAGMENTATION EFFECTS ON BIODIVERSITY SERVICES REVISITED- EFFECTS OF FOREST EDGE FORMATION ON INSECTS AND PLANTS

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Insects and plants are major components of terrestrial ecosystems and insects have the potential to alter plant population dynamics, community structure and ecosystem functioning through their effects as herbivores. Recently, habitat fragmentation has turned into one of the most important threats to biological diversity and a common feature of habitat fragmentation is a sharp increase in the amount of induced or artificial edges, exposing plant and animal populations in fragmented habitats to ecological changes associated to edge formation. We reviewed the evidence for the effects of fragmentation on insects and plants by conducting a meta-analysis for the effects of artificial forest edge formation on insect herbivore abundance, herbivore richness and plant herbivory, with data pooled from 31 studies and 159 independent comparisons. Edge formation exhibited strong effects on plant herbivory rates, as plants on edges exhibited about 70% more damage than plants in