

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



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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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 how these birds move across their now restricted range. Moreover, the Gouldian finch has two common co-occurring colour morphs, which correspond to different behavioural and physiological strategies. Theoretically, distinct strategies associated with colour polymorphism can have effects on population dynamics and on the partitioning of genetic variation in the population. But this has not been explicitly examined in a conservation context. Studies in captive birds have shown strong positive assortative mate preference and a genetic incompatibility between morphs that reduces offspring survivorship. This incompatibility between morphs has restricted gene flow and there is genetic structuring between colours. Based on the captive studies, we predict that there should be significant genetic structure between colour morphs in the wild. However, our results from 10 microsatellite markers and mtDNA, from five contemporary populations indicate that there is extensive gene flow across their range and between morphs, suggesting successful interbreeding in the wild. Our analysis of these contemporary samples against museum samples from 1890-1920 also provides important insight into the depletion of genetic variation through the precipitous decline of this species over the last century. We discuss our results in the context of previously unforeseen consequences of colour polymorphism for conservation.

A 20 YEARS MONITORING OF THE BROWN BEAR POPULATION IN THE PYRENEES, FROM 1994 TO 2013: RESULTS AND PERSPECTIVES

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During the 20th century, the Pyrenean brown bear population dramatically decreased down to only 5-6 individuals in 1995. To avoid the extinction, two reinforcement plans were carried out in 1996-1997 and 2006 with the translocation of 8 bears from Slovenia. This study presents the effects of those reinforcement plans on the distribution area and the population dynamics. In this framework, the monitoring of the population in all

Pyrenees (France, Spain and Andorra) during the 20 past years (1994 to 2013) is used. The study was divided into 5 distinct periods tied to the two reinforcements. The monitoring of the population relies essentially on no invasive techniques (detection of bear signs, DNA typing and camera traps). In 1994, the bear is only present in a small area located in the western Pyrenees. In 1996-1997, the first reinforcements of 3 individuals occurred in central Pyrenees, 50 km apart of the main bear range, in an area where the last specimen disappeared 10 years ago. The species expanded largely on the French and Spanish slopes and reached a threshold of 5-6 bears. With the second reinforcement of 5 individuals in 2006, the population increased up to a minimum of 23 bears in 2013. Consequently, the central Pyrenees distribution area grew quickly until some individuals disappeared or came back to the core area and so the area was made smaller in the last past years. Simultaneously, whereas the western population size strongly decreased with only 2 male bears in 2013, the related bear area increased to the same size of the central area. Despite reintroduction plans, the brown bear is still an endangered species in the Pyrenees and new releases would be necessary. We discuss also the necessity to have both a reliable monitoring population to develop viability analysis and sociological studies for the conservation of this population.

ID177 FROM SCIENTIFIC MODELS TO COMPANION MODELLING: ENGAGING A DIALOGUE WITH LOCAL ACTORS IN AN AMAZONIAN FLOODPLAIN ABOUT BIODIVERSITY MANAGEMENT AT A TERRITORIAL LEVEL

Pierre Bommel

CIRAD

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The Amazonian floodplain is among the most productive and diversified ecosystems in the world. The moving littoral enables a rapid nutrient recycling, explaining the large productivity and biodiversity of the system. Attracted by such favourable conditions for agricultural activities and fishing, populations have settled in the floodplains and developed complementary activities to cope with important variations in their environment, between the flood season and the dry season. However, in the past decades, the rhythm of these floodplains has changed, obliging the actors to deal with great uncertainty. Based on several years of hydrological and biogeochemical studies to understand the reasons of these environmental changes, the "life scientists" of our team invited the "social scientists" with the following question: Can the results about



the dynamics of these floodplains help local populations better anticipate the future fluctuations of the river and adapt their activities to be less vulnerable to such change? To address this, we first chose to turn the perspective around: what were the preoccupations and strategies of local populations and what did they expect from scientists? The challenge was to enable the perceptions and knowledge of local populations to dialogue with scientific knowledge. Based on a Companion Modelling approach, we engaged a participatory process to collectively discuss the current situation and possible future scenarios. Using a role-playing game as an interface for this dialogue, we have progressively built a model to integrate both the knowledge of the local actors regarding their practices and possible environmental impacts and the knowledge of the scientists on environmental dynamics. This has obliged researchers to learn to work together and simplify their knowledge, and requires finding common points of interest with local populations, translating "biodiversity" into concrete issues that have a meaning for local actors.

RHINOS ARE NOT VICUNAS: THE COMMERCIAL USE DELUSION

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Rhinos are under heavy threat from poaching. Their horns are being used for medicinal purposes although no scientific evidence exists to suggest rhino horn has such medicinal efficacy. Yet meeting this demand from Asia potentially elsewhere, via a regulated trade in white rhino horn, is being currently proposed. Trade has been suggested as a last resort for saving rhinos from extinction in the wild. Those who promote commercialization of rhino horn, tout the vicuna, a South American Camelid, as an example of conservation through sustainable use. Vicuna wool shearing for international markets is said to be a good model for rhino horn harvesting. We discuss the ecological, ethical, economic and practical dimensions and pitfalls of the sustainable use model learned during 15 years of vicuna shearing for markets in The Andes of South America. We also explain why vicuna poaching is escalating and difficulties for control. We also address the viability of commercial use of keystone species like Rhinos and Vicunas for conservation in a globalized world with never-ending demands.

WHY PUMA AVOIDANCE OF LIVESTOCK IS NOT ENOUGH TO MINIMIZE CONFLICTS BETWEEN AYMARA SUBSISTENCE FARMING AND PREDATORS IN THE HIGHLANDS OF NORTHERN CHILE

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Puma concoloris well known as a livestock predator along its entire distribution range in the Americas. Pumas living in the Andes of South America cause problems to Aymara farmers. Retaliation by hunting and poisoning is common, but puma population density, prey preference and human perceptions about them are barely known. We studied livestock concentration areas and estimated domestic and wild prey availability during two years in an area of 12,997 km² between 3,500 and 5,000 masl. Also, we described herding practices and perceived threat by local farmers. Puma density was estimated by capture-recapture camera trapping and is one of the lowest known for the species (0.6/100 km²). Diet preferences were Lama pacos (total biomass), but wildlife prey (*Vicugna vicugna*) was higher in terms of frequency in feces compared to prey availability (Ivlev index). A total of 61 Aymara farmers listed the puma as their main wildlife threat followed by foxes (*Lycalopex culpaeus*). However, 41% declared that predation events are in decline, 24% that events were rising. In contradiction to what was perceived by the authorities, we conclude that a minority of individuals perceived increasing conflict with pumas, which has implications for future decision making on puma-human coexistence in the Altiplano region. Also, puma preyed mainly on wild prey despite low abundance and camera trapping detected puma presence in areas where livestock was not attacked. We conclude that managers should focus on further human dimensions work to identify causes of recent complaints, and at the same time understand the variables that are leading the puma to prey upon livestock.

POPULATION STRUCTURE OF CARIBBEAN TURTLE "HICOTEA" (TRACHEMYS CALLIROSTRIS) UNDER EXTRACTION PRESSURES

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Colombian populations of "hicotea" turtle (*Trachemys callirostris*) have been used at the Caribbean region since Pre-Columbian times. Nowadays it is used by local people for consumption during Holy Week and is pressed by extraction, illegal traffic and degradation of natural habitats. The objective of this work was to analyze the structure of a "hicotea" population in four swamp areas near Cartagena, Colombia, in March and May 2014 during the extraction season. In each swamp area we tagged, measured and sexed all turtles captured by local fishermen. We analyzed 197 individuals, 75%

