

ABSTRACT BOOK

**27TH INTERNATIONAL
CONGRESS FOR
CONSERVATION BIOLOGY**

**4TH EUROPEAN CONGRESS
FOR CONSERVATION
BIOLOGY**



**ICCB
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**MISSION
BIODIVERSITY:
CHOOSING
NEW PATHS FOR
CONSERVATION**

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Society for Conservation Biology

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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.

ecosystems that are maintained without human interaction is the aim of the rewilding approach. One objective of rewilding is the recolonisation of abandoned lands by large herbivores to promote heterogeneous habitats suitable for a wide range of species. We investigate the dynamics of large mammals and their effect on natural succession across scales in the national park of Peneda-Gerês in Northern Portugal. The area is highly fragmented and comprises habitat patches at varying stages of abandonment. The cultivation legacy on the abandoned fields and the matrix of surrounding habitats may have important implication for the transitions subsequent to abandonment. We hypothesize that two opposing processes influence succession in abandoned landscapes: While seed availability in the surrounding habitats may influence succession processes, changes in density and activity of herbivores may alter disturbance via grazing or browsing, thus hindering succession. We present our approach to investigate the potential for ecological rewilding and the ecosystem response in Peneda-Gerês. Using a combination of camera trapping and herbivore exclosures, we will examine the influence of herbivore pressure and seed availability on abandoned fields and the scale at which these processes operate. Investigating the impact of these factors at different spatial scales will lead to a better understanding of the mechanisms driving succession and of the spatial extent at which they are effective.

THE USE OF RICE FIELDS BY WINTERING DUCKS: SEARCHING FOR MUTUAL BENEFITS TO DUCKS AND FARMERS

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Rice is cultivated in 114 countries and represents the primary food source for over three billion people. Rice fields also represent foraging, roosting and nesting habitats for >50% of waterfowl worldwide. To better understand the interactions between rice farming and ducks, we first performed a literature review to identify the principal constraints and levers of action associated with the management of rice-production areas in a waterfowl-friendly way. Winter flooding of rice fields has been identified as habitat management providing potential benefits to ducks through its direct translation into wintering habitat creation, and to farmers through the increase of straw decomposition rate and the reduction of weed seed viability. To test this hypothesis, we first assessed if the average duck numbers at the flyway scale were positively explained by winter flooding areas in five main European rice-production regions. Once this was confirmed, we carried out four different analyses (two empirical and two experimental). In the first

two cases, rice field use by wintering ducks was assessed in the Camargue (France) and in Doñana (Spain), where post-harvest agricultural practices and the use of winter flooding are very different. In the two experimental studies, we tested the effect of winter flooding on the viability of three major rice weeds and the effects of attracting ducks by flooding on weed seed bank and straw stubble. All these tests suggested winter flooding of harvested rice fields were indeed a valuable management option benefiting both wild ducks and farmers. A cost-benefit analysis eventually allowed us to evaluate if such management could realistically be promoted in the Camargue considering the constraint of high flooding cost.

SYMPOSIUM ID: 177. TACKLING ISSUES OF COEXISTENCE BETWEEN PROTECTED AREAS AND COMMUNAL LANDS: FROM A ROLE PLAYING GAME TO AN AGENT BASED MODEL

Arthur Perrotton

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Coexistence between actors living in a common environment is a recurrent issue throughout the world. In southern Africa, issues at the interface between agriculture and conservation are inescapable. Livestock herding for instance is a particularly relevant phenomenon to consider if one wants to study coexistence between protected areas and farming households leaving on their edges. Role playing games and agent based model can be used both to elicit local knowledge and strategies, and also to simulate the possible evolution of a given system. In this presentation we propose to describe a work conducted with farmers and livestock herders living in what we define as the Hwange National Park-Sikumi Forest SES (HNP-SF-SES), Zimbabwe. In our study area, cattle are driven within one of the protected areas (SF) throughout the year, resulting in (i) cattle predation by wild predators, and (ii) concerns about the capacity of the SF to effectively conserve wild herbivores. In order to better understand herders' strategies, we co-designed a role playing game with 10 members of this community. Such game is a tool that allows us to elicit herding practices, and to test different scenarios (e.g. climatic variations, alternative governance rules). We assume that a co-designed game will better represent players' reality, thus enhancing appropriation and finally allowing us to collect relevant data. The design process is already a direct first step towards an agent Based model as we co-formalized the local environment with the design team. Results of the playing sessions will be presented, so will the process of translating them into an autonomous agent based model used to simulate possible trajectories of our studied system.

