Ecology, Evolution and Behaviour of Wild Cattle

Implications for Conservation

Covering all thirteen species of wild cattle, the *Ecology, Evolution and Behaviour of Wild Cattle* brings together the contributions of international leading experts on the biology, evolution, conservation status and management of the tribe bovini, providing:

- a comprehensive review of current knowledge on systematic, anatomy and ecology of all wild cattle species (Chapters 1 to 8);
- a clear understanding of the conservation status of each species and the gaps in our current knowledge (Chapters 9 to 20);
- and presenting a number of case studies on conservation activities and investigating some of the most threatened and poorly understood species (Chapters 21 to 27).

An invaluable resource for students, researchers and professionals in behavioural ecology, evolutionary biology and conservation biology, this beautifully illustrated reference work reveals the extraordinary link between wild cattle and humans, the benefits some of these species have brought us, and their key roles in their natural ecosystems.

Mario Melletti is an independent researcher. For more than a decade he has been studying the ecology and behaviour of the forest buffalo, spending more than two years in a remote area in the Dzanga-Ndoki National Park, in the Central African Republic. He has obtained a PhD in animal ecology from the University of Rome in collaboration with the Department of Conservation Biology of Seville. He has collaborated in several projects and surveys on both mammals and birds. He is also a reviewer of many peer reviewed international journals.

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To my father Guido Melletti and to my grandfather Amadio Romanelli whose support, encouragement and inspiration throughout my life have allowed me to pursue my dreams and have made this book possible.
Mario Melletti

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Foreword

As the most common type of large domesticated ungulate, cattle play an integral role in supporting the world's human population, whether it is through food (meat, dairy products), the production of leather, dung for fuel or manure or as draft animals for agricultural use (mainly in poorer and less-developed countries). The Asian water buffalo is probably the most commonly used of all draft cattle, with as many as 165 million domesticated for the production of rice throughout tropical Asia.

Wild cattle are often overlooked, despite there being a number of incredibly striking species and despite the fact that most of the modern domesticated species of *Bos* are thought to have evolved from a single ancestor – the aurochs (*Bos primigenius*). This is possibly a result of the domestic cow somewhat overshadowing their existence due to its economic value; also, indeed visually, many domesticated breeds may be hard to distinguish from some of their wild cattle relatives which share many of the same morphological characteristics.

There are 13 species of wild cattle currently recognised. Some of these species are listed as Critically Endangered on the IUCN Red List of Threatened Species; one may now possibly be Extinct (the kouprey, *Bos sauveli*, has not been seen since the 1980s); and the last aurochs was recorded in Poland in 1627, having been hunted to extinction. The major threats impacting on the survival of all wild cattle are largely attributable to human activities, ranging from direct exploitation (hunting and trade), to the increased pressures of expansion, development and encroachment.

Undoubtedly, the effects of unregulated hunting have caused a rapid (and possibly irreversible) decline in the numbers of wild cattle now remaining. The kouprey is one of the most seriously threatened mammals in the world, with the number of living individuals not known – as noted above, it is thought possibly to now be extinct. As a desirable and extremely valuable target for trophy hunters, the kouprey has fallen victim to a trade fuelled by the demand for trophy horns and traditional medicines.

Conservation must be built on sound knowledge and scientific research. The IUCN Species Survival Commission (SSC) is a science-based network of more than 8,000 volunteer experts from almost every country of the world. SSC members are deployed in over 130 Specialist Groups, and it is one of these groups – the IUCN SSC Asian Wild Cattle Specialist Group – which has been instrumental in raising the profile of Asian wild cattle species and is committed to prioritising their long-term conservation to ensure their continued survival.

Over the years, I have been fortunate enough to see some of the remaining extremely impressive wild cattle species in their native environment. However, as these years have passed, I have also been unfortunate to witness the severe impacts human activities are having on a number of these species, particularly throughout Asia, where they now cling on in small, fragmented and isolated populations which are becoming increasingly non-viable.

I welcome this publication as a much-needed resource which, for the first time, will provide fundamental information for all 13 species of wild cattle and help to guide targeted conservation action. I also feel greatly encouraged that this book also represents the determination, skills and dedication of international experts who have contributed their invaluable knowledge and research to enable it to be written.

As with so many of the world's species faced with threats to their long-term existence, the future of the surviving 12 wild cattle species will depend on reconciling the needs of people and nature: to find pragmatic solutions that balance human population growth and expansion with the needs of wildlife and ecosystems this may conflict with. I hope that through this book we can raise the profile of wild cattle and help people to better understand their value and the urgency to protect this group of charismatic and impressive species.

Dr Simon Stuart
Chair, IUCN SSC

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