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Binturong *Arctictis binturong* conservation: the relationship between the zoo community and ABConservation for an integrated conservation programme in Palawan, Philippines

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Zoological institutions play an ever-greater role in awareness of biodiversity and are increasingly involved in conservation initiatives. The Binturong *Arctictis binturong* is an elusive and poorly known carnivore of the family Viverridae, found in South East Asian ecosystems. This species, affected by diverse human-related threat processes, is listed as Vulnerable on the International Union for Conservation of Nature Red List. This paper reports on the collaborative efforts involving the Binturong European Endangered Species Programme, the French non-governmental organization ABConservation, the European Association of Zoos and Aquaria, the zoo community and researchers at the Museum National d'Histoire Naturelle, Paris (France), all aimed at the conservation of Binturongs. The resulting multidisciplinary initiatives allow the development of an integrated conservation programme for this species in Palawan (Philippines), including community awareness, education programmes, research projects and empowerment of range communities in nature conservancy. Zoos contributed significantly to the development of the field initiatives of ABConservation. Participation of zoos in field programmes for conservation is beneficial for both parties, because zoos support conservation through funding, raising awareness and expertise, and at the same time they acquire increased knowledge about the species they have in their care, and gain relevance in defining their role and missions.

Key-words: binturong; collaboration; community awareness; conservation; conservation education; field research; One Plan approach; Palawan; zoo community.

INTRODUCTION

The missions of zoological institutions have evolved in the recent decades. Facing the loss of biodiversity and what is called the sixth mass extinction (Ceballos *et al.*, 2017), there is a stronger need to focus on conservation efforts. The United Nations Convention on Biological Diversity (CBD) in its *Strategic Plan for Biodiversity 2011–2020* has defined goals known as Aichi Biodiversity Targets (<https://www.cbd.int/sp/targets>) (CBD, 2010). Increasingly zoos aim to be dedicated to these goals (Gusset *et al.*, 2014; Conde *et al.*, 2015; Moss *et al.*, 2015; Olive & Jansen, 2017).

The World Association of Zoos and Aquariums (WAZA) members distributed worldwide over more than 1300 linked institutions represent a great capacity for conservation support through a variety of actions, from threatened species breeding programmes to fundraising and conservation education (Miller *et al.*, 2004; Barongi *et al.*, 2015). Zoos are thus well placed to use a wide spectrum of activities to promote conservation and to broaden their

programmes for conservation is essential if they are going to meet the requirements of the One Plan approach. This involvement is beneficial all round: zoos support conservation through funding, awareness and expertise, and they acquire increased knowledge about the species in their care, and gain relevance in defining the role and mission of their institutions.

ABConservation is a young NGO with some great achievements. It draws its strength from partnerships and collaborations, which facilitate the enhancement of skills. The NGO engages with communities and industry to raise awareness and provide effective protection for the Binturong. The integration of nature protection into the cultural context of Palawan should be improved when local people gain employment as guides and research assistants within the Programme.

The genetic investigations and the Bearcat Study Program are ambitious research projects that should provide a better understanding of the genetics, ecology, physiology and behaviour of this little-known species. It is hoped that this knowledge will contribute to the development of an appropriate conservation action plan along with improved animal husbandry, health and welfare for the *ex situ* breeding programme.

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PRODUCT MENTIONED IN THE TEXT

Wildspy©: telemetry collars, manufactured by Wild Spy Pty Ltd, Banyo, QLD, Australia.

REFERENCES

- ALLEN, J. A. (1910): Mammals from Palawan Island, Philippine Islands. *Bulletin of the American Museum of Natural History* **28**: 13–17.
- ARIEFIANDY, A., PURWANDANA, D., NATALI, C., IMAN-SYAH, M. J., SURAHMAN, M., JESSOP, T. S. & CIOFI, C. (2015): Conservation of Komodo dragons *Varanus komodoensis* in the Wae Wuul nature reserve, Flores, Indonesia: a multidisciplinary approach. *International Zoo Yearbook* **49**: 67–80.
- BARONGI, R., FISKEN, F. A., PARKER, M. & GUSSET, M. (Eds) (2015): *Committing to conservation: the world zoo and aquarium conservation strategy*. Gland, Switzerland: WAZA Executive Office.
- BYERS, O., LEES, C., WILCKEN, J. & SCHWITZER, C. (2013): The One Plan approach: the philosophy and implementation of CBSG's approach to integrated species conservation planning. *WAZA Magazine* **14**: 2–5.
- CBD (2010): *Strategic plan for biodiversity 2011–2020 and the Aichi targets: "living in harmony with nature"*. Montreal, QC: Secretariat of the Convention on Biological Diversity. Available at www.cbd.int/sp
- CEBALLOS, G., EHRLICH, P. R. & DIRZO, R. (2017): Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines. *Proceedings of the National Academy of Sciences of the United States of America* **114**(30): E6089–E6096.