Section 3

SPECIES PROFILES

Introduction

Bradley P. Smith, Helen P. Waudby, Corinne Alberthsen and Jordan O. Hampton

This section details specific considerations for using Australian wildlife for scientific, management and teaching purposes. It covers all native and introduced Australian fauna, either as single species or within a larger taxonomic group. Fishes and crustaceans have been included in view of the growing body of knowledge around the cognitive and social complexities of these taxa and their ability to feel pain (e.g. Franks *et al.* 2021 and references therein). Many species hold cultural and spiritual significance for Indigenous Australians (Aslin and Bennett 2000; Weir 2012). It was not possible to represent the diversity of Indigenous names and perspectives for species across geographies and language groups adequately. However, the adoption of Indigenous names, and appreciation of all cultural perspectives and knowledge in wildlife research and management are paramount to conducting research holistically and effectively in many landscapes (Wilson *et al.* 2010; Walsh *et al.* 2014).

While many of the research methods outlined in Section 2 can be used across species, the design of research projects often requires adaptation and customisation depending on the species of interest. As such, this section provides a guide to species-specific considerations for researchers and animal ethics committee (AEC) members who may be planning or evaluating wildlife research or education activities, rather than a hard set of rules. Details such as conservation or taxonomic status, and species' distributions, are not included unless they affect practical considerations. Each profile includes a brief overview of the species' characteristics, including their biology and behaviour. These profiles also discuss animal welfare considerations around capture and handling, which often include veterinary considerations (chemical restraint, other medications, infectious diseases and euthanasia). An attempt is made to describe all of the ways (direct and indirect) in which wildlife research may harm animals and provide recommendations for mitigating these impacts, for example stressing that for any wild animal euthanased *in situ*, researchers need to ensure that any chemical agents used do not pose a secondary toxicity risk to wild scavengers (i.e. carcasses should be appropriately disposed of).

While the risk of pathogen transmission in wildlife research is not a new one, the COVID-19 pandemic has highlighted the threat of zoonoses to researchers and anthropozoonoses to wildlife. We recommend that all wildlife researchers review their capture and handling protocols carefully in view of the risks of pathogen transmission, including potential zooanthroponoses (refer to WHA 2021 for an example relating to bats).

Each species profile follows the same template (modelled on those developed by NHMRC 2014), but individual profile content reflects the nature of the individual species or taxa being described. Readers are also directed to relevant general operating procedures detailed in Section 2. These profiles are intended to be brief and readers are encouraged to consult the literature and experts for more-detailed information, where necessary.

Some veterinary procedures detailed in these profiles will need to be performed by a veterinarian (particularly when administration of restricted drugs is required); others can be performed by experienced personnel or under the supervision of a veterinarian. Readers should confirm the experience and legal/licensing requirements for their procedures during the planning stage of their research. For many species, details on the recommended drug doses and administration routes are provided, but this information is not intended to replace more detailed veterinary texts or the advice of a practising veterinarian. Rather, these considerations are included (and covered more generally in Chapter 16) to provide researchers with a starting point for planning studies, and for AEC members reviewing applications.

ACKNOWLEDGEMENTS

We are grateful to Dr Derek Spielman, Dr Peter Holz, Dr Sarah Gill and Dr Vere Nicolson for reviewing the veterinary considerations for all chapters in this section.

REFERENCES

Aslin HJ, Bennett DH (2000) Wildlife and world views: Australian attitudes toward wildlife. *Human Dimensions of Wildlife* **5**, 15–35. doi:10.1080/10871200009359177

Franks B, Ewell C, Jacquet J (2021) Animal welfare risks of global aquaculture. *Science Advances* **7**, eabg0677. doi:10.1126/sciadv.abg0677

NHMRC (2014) *A Guide to the Care and Use of Australian Native Mammals in Research and Teaching*. National Health and Medical Research Council, Canberra.

Walsh F, Christophersen P, McGregor S (2014) Indigenous perspectives on biodiversity. In *Biodiversity: Science and Solutions for Australia*. (Eds S Morton, A Sheppard and M Lonsdale) pp. 81–100. CSIRO Publishing, Melbourne.

Weir JK (2012) *Country, Native Title and Ecology*. ANU ePress, Canberra.

WHA (2021) *Bat Health Focus Group*. Wildlife Health Australia. <https://wildlifehealthAustralia.com.au/ProgramsProjects/BatHealthFocusGroup.aspx>.

Wilson GR, Edwards MJ, Smits JK (2010) Support for Indigenous wildlife management in Australia to enable sustainable use. *Wildlife Research* **37**, 255–263. doi:10.1071/WR09130