

ANIMAL WELFARE POSITION STATEMENT

EXECUTIVE SUMMARY

This Animal Welfare Position Statement (Statement) is an initiative of the Zoo and Aquarium Association (Association), and has been developed to provide Association members with contemporary knowledge about animal welfare. This Statement has been developed in partnership with the Australian Animal Welfare Strategy¹ (AAWS), and supports the strategy goal to outline directions for future improvements in the welfare of animals in Australia.

Australasian zoos and aquariums maintain a unique and diverse collection of non-domestic species and the Association therefore recognises the benefits of an industry specific approach to animal welfare. The position of the Association is that all zoos and aquariums have a responsibility to ensure a high standard of animal welfare for all animals in their care. The Association maintains that the conservation, education, research and recreational goals of zoological organisations must be underpinned by positive animal welfare.

The Association has developed a framework that recognises the progression from traditional animal welfare models (focused on mitigating negative welfare states) to a more contemporary model that focuses on providing positive welfare states. The Association has adopted the Five Domains model¹⁶, which recognises the affective (psychological) states of welfare in animals.

The Five Welfare Domains and examples of related positive states⁸ are:

PHYSICAL DOMAINS

1. **Nutrition:** e.g. appropriate consumption of nutritious foods is a pleasurable experience
2. **Environmental:** e.g. benign conditions offer adaptive choices and variety
3. **Health:** e.g. physically sound (uninjured, disease-free) animals enjoy good health
4. **Behaviour:** e.g. environment-focused and inter-animal activities are satisfying and engaging

MENTAL DOMAIN

5. **Mental or Affective State:** e.g. animals experience comfort, pleasure, interest and confidence

The perspectives outlined in this Statement provide a contemporary framework for thinking about animal welfare. The Association expects member organisations will develop their own animal welfare position statements and continue maintaining and improving welfare for all animals in their care. Member organisations are encouraged to use this framework when developing their own statements and any related welfare assessment tools.

PREFACE

The development of this Animal Welfare Position Statement is an initiative of the Zoo and Aquarium Association with financial support from the Australian Animal Welfare Strategy.

The Association developed an external consultative group made up of members of the zoo industry, New Zealand welfare and ethics academics and the Australian Veterinary Association. The consultative group conducted extensive literature reviews.

CONTEXT

The Association recognises the need for an animal welfare approach that is relevant and applicable to the zoo industry in Australia and New Zealand and that the approach needs to consider current societal expectations.

Zoos and aquariums present potentially challenging environments in which to devise a comprehensive approach to animal welfare, predominantly due to the diversity of species in care.

It is within these contexts that the Statement provides a framework for member organisations to develop their own organisation-specific welfare position and assessment tools.

SCOPE

The aim of this Statement is to present a contemporary welfare approach that can be utilised to ensure positive animal welfare. While an approach to animal welfare that is relevant to modern zoos and aquariums should also consider the ethical positions associated with keeping captive non-domestic animals, it is essential to differentiate between animal welfare and ethics.*

Within Australia and New Zealand we have democratically accepted the use of animals for a range of purposes including in agriculture, as pets, and for sport and recreation. This ethical position is accepted in our society; therefore this Statement will focus on welfare and will give no further consideration to ethical positions.

Zoos and aquariums provide conservation, education, research and recreation for the community providing a significant socio-economic contribution to society.

* Zoos and Aquariums are increasingly involved in government led 'breed to release' programs. In these circumstances the *IUCN Guidelines for Re-Introductions* are applied.

THE ASSOCIATION'S ANIMAL WELFARE POSITION STATEMENT

The position of the Association is that all zoos and aquariums have a responsibility to ensure a high standard of animal welfare for all animals in their care. The Association maintains that the activities carried out by zoo organisations must be underpinned by positive animal welfare.

Australasian zoos and aquariums maintain a unique and diverse collection of non-domestic species and the Association recognises that an industry specific approach to animal welfare is required. This industry specific framework recognises the high level of importance placed on animal welfare and provides a model that the zoo industry can apply to assist with achieving positive animal welfare.

The Association maintains an Accreditation Program to substantiate its members' animal welfare practices. Furthermore the Association expects regulatory authorities to carry out their obligations for welfare inspections. To support this expectation the Association has worked with governments to develop and establish contemporary animal welfare standards and guidelines for exhibited animals.

CONTEMPORARY PERSPECTIVES ON ANIMAL WELFARE

Animal welfare science is a relatively recent discipline. It has evolved significantly during the last three decades and, accordingly, considerable advances in animal welfare have been achieved. Consistent with an emerging and evolving discipline are the numerous attempts to characterise and define animal welfare.

Whilst the Association and the AAWS recognise the World Organisation for Animal Health (OIE) definition of animal welfare (Appendix 1), a zoo industry specific definition on positive welfare states in zoo animals was developed to support the goals of the Statement:

“Animal Welfare means how an animal is coping with the conditions in which it lives. It refers to what an animal itself experiences. The treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

An animal is in an acceptable state of welfare if (as indicated by scientific evidence) it is well nourished, comfortable, healthy, and able to express innate behaviour, and if it is safe and not suffering from unpleasant experiences such as pain, fear, and distress.

Acceptable welfare requires species-appropriate nutrition and physical environments, as well as disease prevention and veterinary treatment, supported by knowledgeable and skilled management that incorporates humane handling.”

See Appendix 2 for the full definition of positive welfare states in zoo animals.

Three generally accepted animal welfare orientations have emerged in the last decade. These are the biological function, affective state and natural living orientations, all of which provide different perspectives on animal welfare.¹⁵ An integrated approach to these orientations has been recently proposed giving consideration to the following characteristics:

- welfare is a state that exists within an animal
- animal welfare relates to experienced sensations (negative, positive or neutral)
- the combined sensory and neural inputs from within an animal’s body and from its environment, after processing by the brain, constitute the animal’s current experience (i.e. its welfare status); welfare status can change as the inputs change
- these experiences are subjective states which cannot be directly measured but can be assessed via indirect indices
- welfare may vary along a continuum from poor to good¹⁵

These characteristics, focusing on the experiences of an animal, emphasise the affective state, or the psychological wellbeing of an animal.¹⁵ This is in contrast to historical approaches which were focused on eliminating and minimising negative physical states in order to avoid poor welfare outcomes. Such approaches strongly emphasised biological function, or the physical wellbeing of an animal, and at best resulted in neutral welfare states.

Due to advances in animal welfare science and the identification of the aforementioned characteristics, positive affective states are now recognised, in addition to biological function, and are considered to be an integral component of an animal's welfare. A positive affective state can be achieved when both the physical and mental needs of an animal are met. This approach is encompassed in the Five Domains model of animal welfare, proposed and subsequently revised by Mellor and others, and has been chosen by the Association as a contemporary welfare framework for animal welfare assessment in the zoological setting.^{15, 17}

The Five Domains (nutrition, environment, health, behaviour and mental state) represent areas of potential welfare compromise and, conversely, areas where welfare can be enhanced. The first four domains, encompassing potential negative-to-positive nutritional, environmental, health and behavioural elements, are largely physical or functional. Sensory inputs from these physical domains provide subjective experiences for the fifth (mental) domain, which also receives sensory inputs elicited by external stimulation.

ANIMAL WELFARE IN ZOOS AND AQUARIUMS: STRENGTHS, CHALLENGES AND OPPORTUNITIES

To be relevant and credible, an industry specific approach to animal welfare must be consistent with current concepts in animal welfare and as such must be a 'living' document that is revised and updated as animal welfare science evolves. The Five Domains model of animal welfare assessment provides a contemporary framework for assessing welfare that can be applied across taxonomic groups and as such this model is of particular value to zoological organisations, which hold a diverse array of species.

Animal welfare is generally difficult to assess objectively, however a range of indirect measures (such as behavioural indices) can be used to give an indication of the welfare status of a given animal.^{14, 15} For the industry to be confident it is achieving positive animal welfare, it is important that methodologies to quantify and assess welfare outcomes in captive animals are developed and routinely applied in the zoo setting.

Animal welfare science draws on expertise from numerous disciplines. This multidisciplinary approach is already embraced by zoos and aquariums. Examples include veterinary involvement in the development of behavioural or husbandry programs and scientists specialising in animal behaviour and nutrition being engaged in management and research of zoo collections. Engaging external subject matter specialists to increase animal welfare knowledge, complemented by the skills encompassed by animal managers and keepers, can only enhance animal welfare in zoos and aquariums.

Zoos and aquariums have taken a strong lead in several areas of animal welfare research including behavioural analysis and non-invasive physiological assessment of stress. Despite this a number of authors have identified gaps in the science of animal welfare as it applies to zoos and aquariums.^{9, 13} Such gaps provide opportunities for the zoo and aquarium

industry to contribute to the knowledge of animal welfare science through participation in research projects and broad dissemination of project findings.

FIVE DOMAINS

BEHAVIOUR

The zoo industry has had a well-demonstrated focus on both behavioural research and behavioural enrichment over recent decades.^{10, 19-21} The methodologies employed in these endeavours can be readily applied to the assessment of animal welfare and in attaining positive welfare outcomes. Despite this, and as previously mentioned, knowledge gaps do exist.¹³ Various natural behaviours exhibited by some species in the wild have been shown to be predictive for poor welfare outcomes in captivity under typical management regimes.²² One example is the association between wide-ranging lifestyles and large home range sizes in the wild and a high incidence of stereotypies and high neonatal mortality in carnivores in captivity.³

It is important to note that many behaviours are stimulus driven and a full range of natural behaviours may not be exhibited in captivity due to different stimuli in captivity compared with the wild. The exhibition of 'wild type' behaviours does not necessarily occur as a result of, or equate with, good animal welfare. Behaviours are frequently species specific requiring careful, skilled interpretation. Choice, through exposure to a range of diverse environmental conditions, is likely to be just as important for attaining better welfare outcomes for captive species, as are enrichment practices promoting 'wild type' behaviours.

NUTRITION

While the nutritional requirements of domestic species are well described, enabling nutritionally complete diets to be designed, manufactured and assessed with relative ease, meeting the requirements for non-domestic species is a complex task. The nutritional requirements are poorly known for many non-domestic species.

Many non-domestic species live successfully and reproduce in captivity on diets that may not completely meet their nutritional needs. Further challenges for zoos and aquariums include the requirement to meet not only a given species' nutritional needs but also the physical form requirements and an animal's psychological needs in relation to diet and mode of food acquisition, for example, providing live food for amphibians and variable foraging opportunities for ungulates.

Zoos and aquariums can contribute to knowledge relating to nutritional developments associated with species-specific diets and taste preferences. This can be achieved by undertaking nutritional analyses or by sharing information with those parties participating in nutritional, taste and preference research.

ENVIRONMENT

Zoos and aquariums have a responsibility to consider individual and species specific environmental requirements, whilst also taking into account public expectation (aesthetics,

visibility etc.) and logistical constraints (finances, site etc.), when designing and constructing enclosures for animals in their care. First, the needs of the animal should always be a primary concern in enclosure design. Additionally, a thorough welfare assessment of the suitability of housing a given species or individual in a given enclosure or zoo should be undertaken prior to the acquisition or movement of animals.

PHYSICAL HEALTH

On the basis of the Five Domains model the health of animals can be broadly divided into physical and psychological health. To ensure the physical health of collection animals, zoos and aquariums require proficient keeping staff, high husbandry standards, access to veterinary care and implemented management systems which ensure timely intervention when health care is required. A regularly reviewed preventative medicine program should be in place. For some species longevity in captivity exceeds that experienced in the wild and geriatric care has become a growing focus of zoological medicine in recent decades. Quality of life should take precedence over longevity.

AFFECTIVE STATE (PSYCHOLOGICAL HEALTH)

Only, when needs in the abovementioned four physical domains are met, can a positive affective state be achieved. Thus, when needs in all Five Domains are met, in a context where key elements of natural living are also addressed, positive states of welfare can exist.

The growing recognition of the importance of affective states may present some challenges as there are potential difficulties associated with assessing the affective state of animals.⁷ Nonetheless there are a number of indirect indices which can be measured enabling credible and scientific assessment of the affective state of an animal.^{15, 16}

WELFARE ASSESSMENT OF ZOO AND AQUARIUM ANIMALS

Quantitative assessment of welfare by zoos and aquariums is required in order to measure the effectiveness of animal welfare endeavours. This requires commitment of appropriate resources. Welfare assessment should be focused on animal based outcomes (as opposed to human based inputs). Several methodologies are already employed for welfare assessment in zoos and aquariums. These tools allow for assessment of potential welfare compromise in the Five Domains and fall into four broad categories:

- behavioural analysis²⁻⁶
- physiological analysis (biological measures of poor or good physical function and stress)^{10, 20}
- physical health
- population level welfare analysis^{12, 18}

Considered alone each of the above methodologies have potential limitations. When combined a more accurate assessment of an animal's welfare can be obtained.⁷ Additionally, for individual animals the concept of 'quality of life' assessment (life quality assessed from the animal perspective) has recently been proposed, e.g. methods used to

guide the decision-making relating to the on-going care of animals on a daily basis to assess their quality of life.⁸

Research into and the understanding of animal welfare is generally biased towards domestic mammals, carnivores and primates. For animal welfare outcomes to consistently improve across all taxonomic groups, the Association is of the opinion that there is a need to broaden the taxonomic scope of zoo and aquarium animal welfare science.

CONCLUSION: EXPECTATIONS AND ACHIEVING POSITIVE ANIMAL WELFARE OUTCOMES

The perspectives in this Statement provide a contemporary framework for thinking about animal welfare. Member organisations are encouraged to think in these terms when developing their own statements and any related policies and procedures. Approaches to achieving positive animal welfare are evolving, progressing as science provides new information.

The Association recommends that members develop their own animal welfare position statements and maintain and improve welfare for all animals in their care.

ACKNOWLEDGEMENTS

The Zoo and Aquarium Association would like to thank the following for their contribution and support, making this Position Statement possible; David Mellor (Massey University, New Zealand); Tim Portas (Zoo and Wildlife Veterinary Consultant); Mark Lawrie (Australian Veterinary Association); Simone Vitali (ZAA Veterinary Specialist Advisory Group Convenor); Taronga Conservation Society Australia; Zoos Victoria; and Wellington Zoo. Thanks also go to all who attended the Zoo and Aquarium Association's Animal Welfare Conference and Workshop held on 16th March 2012. We would also like to thank the Department of Agriculture, Fisheries and Forestry* for the financial contribution from the Australian Animal Welfare Strategy to this work.

* Following the Australian Federal election on 7 September 2013, the Department of Agriculture Fisheries and Forestry changed their name to the Department of Agriculture.

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APPENDIX 1

The World Organisation for Animal Health's (OIE's) definition of ANIMAL WELFARE

“Animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour and is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling, and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.”

APPENDIX 2

The Zoo and Aquarium Association's definition of POSITIVE WELFARE STATES IN ZOO ANIMALS

Animal welfare may be considered on two levels, i.e. first, the basic elements of 'acceptable' welfare states, and second, those elements which when added to the basic ones give rise to a higher proportion of positive states.

The basic elements of the first level are derivable from a modification of the OIE characterisation of animal welfare¹ that aligns with the 'Five Domains' model, incorporating nutrition, environment, health, behaviour and mental state², as follows:

Animal Welfare means how an animal is coping with the conditions in which it lives. It refers to what an animal itself experiences. The treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

An animal is in an acceptable state of welfare if (as indicated by scientific evidence) it is well nourished, comfortable, healthy, and able to express innate behaviour, and if it is safe and not suffering from unpleasant experiences such as pain, fear, and distress.

Acceptable welfare requires species-appropriate nutrition and physical environments, as well as disease prevention and veterinary treatment, supported by knowledgeable and skilled management that incorporates humane handling.

The second level builds on the foundations established by the basic elements of the first level and encompasses significant enhancement of welfare state by positive experiences. Key characteristics of these experiences, derived from an amalgam and extension of those outlined by FAWC (2009)³, and Mellor (2012)⁴, include the following:

- *As appropriate for the species and circumstances, animals should experience comfort, pleasure, interest and confidence, thus:*
 - *Consuming the food provided should be an enjoyable experience*
 - *Expressions of normal behaviour should be possible and harmless wants met*
 - *Environmental choices should be available and should enhance exploratory and food acquisition activities that are rewarding, and*
 - *Social species should be able to engage in bonding and bond affirming behaviours and, depending on the circumstances, other affiliative interactions such as maternal and group care of young, play and sexual activity.*

Presenting animal welfare in terms of these two levels makes the point that reputable zoos may justifiably be seen to be doing better than the basic level.

This document was prepared for the Zoo and Aquarium Association by Professor David Mellor, Animal Welfare Science and Bioethics Centre, Massey University, New Zealand, with input from the Association.

¹ OIE Animal Welfare – <http://www.oie.int/doc/ged/D5517.PDF>

² Green & Mellor (2011). New Zealand Veterinary Journal 59, 316–324.

³ FAWC (2009) Farm Animal Welfare in Great Britain: Past, Present and Future. Pp 243–54. Farm Animal Welfare Council, London, UK.

⁴ Mellor (2012). New Zealand Veterinary Journal 60, 1-8.