

A perspective on ungulate management and welfare assessment across the traditional zoo to large landscape spectrum



David Powell, Saint Louis Zoo

Dan Beetem, The Wilds

RoxAnna Breitigan, The Living Desert

Adam Eyres, Fossil Rim Wildlife Center

Brandon Speeg, White Oak Conservation

Why this commentary?

- A science-based, but flexible, welfare assessment philosophy is needed for ungulates living in a variety of settings and should be embraced
- AZA requires welfare assessments
- Regulatory agencies are concerned about welfare but perhaps don't understand it as we do
 - After a mortality event, changes are dictated because 'welfare was not protected'
- Biases and opinions are being used as welfare 'data' in some cases



Julie Maher/WCS

What's in the paper?

- Conceptual approach to ungulate welfare assessment and management predicated on the belief that positive animal welfare and 'lives worth living' (Mellor, 2016) are achievable for ungulates living in human care in diverse settings.
- Suggest some behaviors that appear negative are necessary for proper social development and positive welfare later in life, thus we argue for taking a long-term approach to welfare.
- Explore the role of **motivation** and **effectiveness** in assessing the valence (positiveness or negativeness) of behaviors



Julie Maher/WCS

The risk portfolio for good and bad welfare across the spectrum

- Generally:
 - Traditional zoo exhibits offer a lot of human control, proximity, observability, and intervention ability
 - Tend to be less stimulus rich/diverse and social groups are generally smaller
 - Less choice, possibly less control because more dependency on humans for variety, stimulation, and social management
 - Veterinary management can be more individualized
 - Safari parks & large ranches offer less human control, proximity, observability, and intervention ability
 - Often are larger, more complex/stimulus diverse, and allow for more natural-sized social groups
 - More choices
 - Less dependency on humans for variety, stimulation, and social management
 - Veterinary management may require a herd approach and could be more invasive



The Living Desert
& Gardens

What is animal welfare science saying right now – with some consensus?



- Some say feelings are all that matters
- A more holistic philosophy that acknowledges the role of natural behaviors and basic physical and psychological health is where most people are.
- Welfare ‘inputs’ (e.g. a ‘balanced diet’) are important but likely more relevant from animals’ perspective are outputs (e.g. is the animal maintaining appropriate BCS? Or does it feel hungry most of the time?)
- The Five Domains Model by Mellor is the most widely used and accepted model of animal welfare

What is animal welfare science saying right now – with some consensus?

- Comparison of welfare metrics across systems has appeal but may not be all that useful
- What can be compared is the extent to which animals have an overall positive balance of life experience: “Lives worth living”
- Be aware that
 - our desire to control welfare +
 - our easier ability to recall negative events +
 - our sense of satisfaction when animals thrive ‘in our care’=
 - encourages us to remove control and agency from the animals and makes us forget all the days when nothing went wrong.
 - “They depend on me for everything” is not a great welfare argument

What to make of 'natural' and/or 'ephemeral negative' behaviors?

- Not all natural behaviors improve welfare – some may improve it at a later life stage
- Some unnatural behaviors are very satisfying
- Evolution doesn't optimize welfare, it optimizes fitness, and it is inherently selfish
 - Some level of welfare is necessary for successful reproduction but excellent welfare is not necessary for it
 - So animals in human care will still compete with one another for example



Johan Swanepoel

What to make of 'natural' and/or 'ephemeral negative' behaviors?

- Some behaviors may have benefits for the actor while having costs for the receiver, this is inevitable
- Both players may incur costs to achieve goals they feel are important
- The uncertain role of Motivation
 - Animals are highly motivated to do some risky things; living in human care doesn't erase this
 - If they have undergone proper physical and psychological development, they should have the skills to choose battles wisely
 - But still they could 'lose', but if they win, they make experience rewards and 'effectiveness'



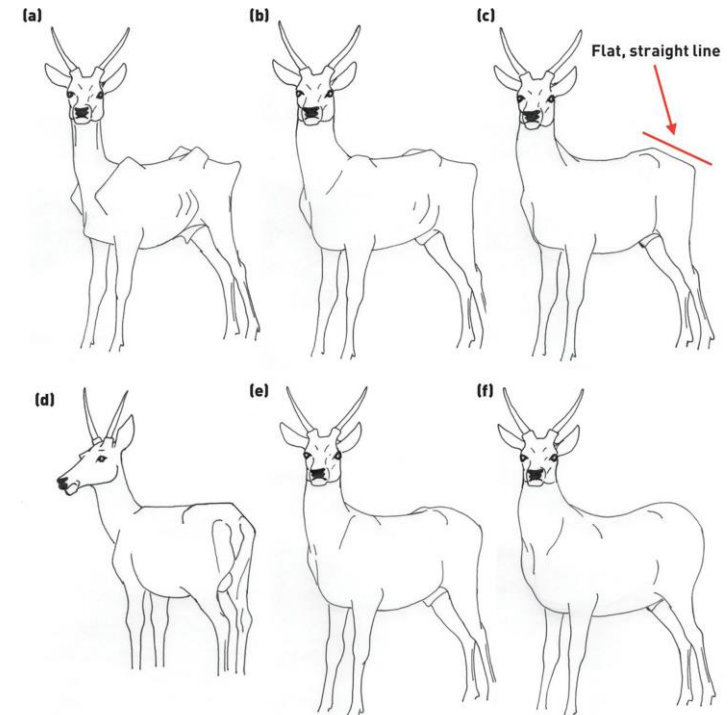
What to make of 'natural' and/or 'ephemeral negative' behaviors?

- Taking a long-view on welfare (i.e. asking whether a situation now has welfare implications in the future) can address concerns about negative behavior now
- Look at life stage-related and any other 'negative' behaviors and ask if they could be building skills and resiliency useful later, and be aware of 'hidden costs'
- These behaviors are generally a small part of the animals' lives
- These behaviors are the ways animals know how to get what they want



Suggested welfare metrics

- Nutrition Domain: Body Condition Scoring
- Health Domain: Morbidity and Mortality metrics
- Environment Domain: Use of opportunities for thermoregulation
- Behavior Domain:
 - frequency of comfortable grouping (i.e., resting together) vs. separation from the group
 - appropriate levels of vigilance
 - rumination time
 - stereotypy



British Veterinary Association

Thanks

