

Module 21

Wild Animal Welfare: Management of Wildlife



This lecture was first developed for **World Animal Protection** by Dr Christine Leeb (University of Bristol) in 2003 and updated by Dr Matt Leach (University of Bristol) in 2007. It was revised by **World Animal Protection** scientific advisors in 2012 using updates provided by Dr Caroline Hewson.

Free online resources

To get free updates and additional materials, please go to www.animalmosaic.org/education/tertiary-education/

This module will teach you

The main welfare issues affecting wild animals living freely and in captivity

How those issues might be resolved

Background

Wild animals

- ❖ Free-living and captive animals of species that typically live without human intervention

Welfare

- ❖ Physical functioning, mental state/feelings and performance of important behaviours
- ❖ Sentience: vertebrates including fish, and many invertebrates, e.g. decapods (Elwood, 2012)

- ❖ Respect for nature ethical framework
- ❖ Collective welfare of the species in the wild is more important than the welfare of the individual in captivity or wild
- ❖ Number, duration, severity (Mathews, 2010)
- ❖ Focus on the individual as a vet

Factors affecting wild animal welfare

Naturally occurring

- ❖ E.g. disease, predation, etc.

Anthropogenic

- ❖ Factors that result directly or indirectly from human actions
- ❖ Especially human encroachment

Welfare issues affecting free-living wild animals (Leach et al. 2005)

World Animal Protection commissioned a report into welfare issues affecting free-living wild animals in sub-Saharan Africa and Latin America

Identified three categories:

1. Trapping, hunting and fishing
2. Trade in live wild animals or their
3. Human encroachment

Applicable to all species throughout the world

Human encroachment

The negative impact that human presence and activities have on wild animal welfare

- ❖ **Responsible for other welfare issues, e.g. hunting and trade in wild animals**

Four aspects affect free-living wild animals

- ❖ **Habitat loss**
- ❖ **Pollution**
- ❖ **Human contact**
- ❖ **Methods of managing wild populations**

Encroachment: habitat loss

The loss or degradation of the natural habitat in which animals live, because of a range of human actions, such as

- ❖ expanding human habitation
- ❖ disruption of wildlife habitat by buildings, roads and fences
- ❖ exploitation of natural resources
- ❖ cultivation of wildlife habitat and livestock grazing



Credit: Digital Visions

Encroachment: effects of habitat loss

Disturbance of natural behaviour, movement patterns and migration routes

Increased inter-species aggression and competition

Fragmentation of populations and separation of social groups

Competition with livestock for food and water, leading to starvation and dehydration

Disturbance of breeding and nesting sites, which can lead to increased offspring mortality

Fear due to the close presence of human beings

Displacement of animals from their home ranges

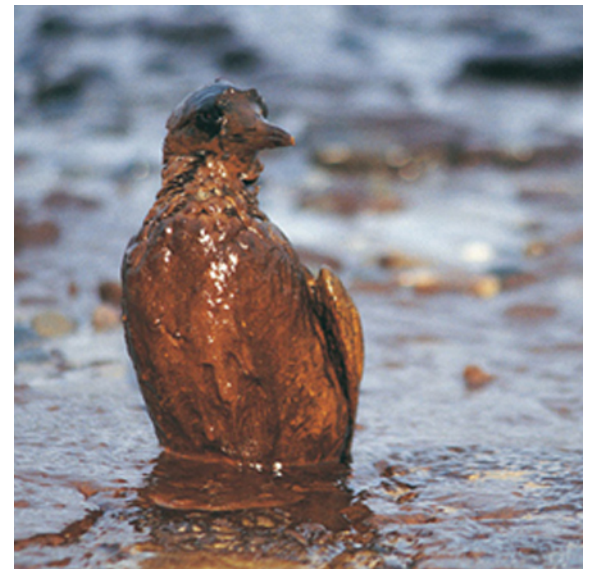
Pain, injuries and death, e.g. vehicles, buildings, fences, poisoning to control 'pests', etc.

Increased predator vulnerability

Encroachment: pollution

The release of contaminants into the air, water and soil, plus excess light, sound and heat

- ❖ **Household and industrial rubbish**
- ❖ **Industrial and household chemicals in water, air and soil**
- ❖ **Disruption caused by light, noise and heat pollution**



Credit: Digital Visions

Encroachment: human contact 1

Negative effect that contact with human and domestic animals can have on wildlife welfare

- ❖ **direct contact with humans and domestic animals**
- ❖ **research practices**
- ❖ **Ecotourism**

Encroachment: human contact 2

Effect on individual animals

- ❖ **Disease and parasite transmission**
- ❖ Role of conflict
- ❖ Role of drought
- ❖ **Distress, fear and injury from**
- ❖ Domestic animal attacks e.g. cats (Calver et al., 2011)
- ❖ Poor research methods
- ❖ The presence of tourists
- ❖ Misguided 'rescue' by concerned members of the public (Wimberger & Downs, 2010)

Encroachment: management 1

Human intervention needed to control wild animal populations due to human encroachment

Human interventions can cause

- ❖ **Habitat loss**
- ❖ **Man-made barriers**
- ❖ **Creation of national parks and game reserves**
- ❖ **Conflict between humans and wild animals**
- ❖ **Introduction of alien species**
- ❖ **Painful death, e.g. rodent control**



Encroachment: management 2

Effect on individual animals

Pain, suffering and distress associated with methods of

- ❖ Capture
- ❖ Killing
- ❖ Relocation
- ❖ Contraception



A snare

Potential solutions to encroachment 1

Human communities and land use

- ❖ **Broaden the debate**
- ❖ **Involve all stakeholders in the debate**
- ❖ **Avoid sub-division of wildlife habitat**
- ❖ **Increased tolerance by local communities**
- ❖ **Protect humans from wild animals**
- ❖ **Wild animal population control**



Credit: iStock.

Potential solutions to encroachment 2

Interaction with the environment

- ❖ Building of 'wildlife-friendly' structures
- ❖ Preventing pollution
- ❖ Humane research methods
- ❖ Keeping domestic and wild animals separate

Example 1: agriculture

(Mathews, 2010)

One third of the earth's surface

✦ Also aquaculture

Wildlife live on or around the cultivated land,
e.g. eat the crop

Animals pass through the farmland during
migration, etc. ⇒ damage the crop



Example 1: agriculture

(Mathews, 2010)

Biggest threats to wildlife from agriculture

- ❖ Disease transmission and attempts to control wildlife reservoirs of disease
- ❖ Controlling 'pests': if non-targeted, other non-pest species will be killed as well
- ❖ Land use, e.g. harvesting; conversion of bush to farmland ⇒ exposed to predators
- ❖ Use of agrichemicals

More research needed into solutions

- ❖ Some are simple and cost-effective, e.g. maintaining wild borders around the fields; ensuring effective barriers between domestic and wild species

Example 2: pest control

(Littin, 2012; Warburton et al., 2012)

Often inhumane killing methods

Solutions include

- ⌘ Regulation
- ⌘ Economic incentives
- ⌘ Theoretical models:
 - ⌘ Estimate minimum number needed to be killed
(minimises number suffering from inhumane methods?)

Example 3: cats and wildlife

(Calver et al., 2007, 2011)

The extent to which this predation affects wildlife numbers is unclear

❖ cats' welfare vs. wildlife survival

Four-step solution

- ❖ Data confirming that predation is putting wildlife at risk
 - ❖ Uncertainty about the extent still points to the need for protection
 - ❖ Take precautionary measures, e.g. limit numbers of cats per household; use deterrent to prevent cat from catching the wildlife, e.g. cat bib
- Do all in consultation with experts, e.g. vets, biologists

Welfare issues of captive wild animals



Animals in captivity

Welfare directly controlled by those that keep them

- ❖ Zoos
- ❖ Rescue and rehabilitation centres
- ❖ Exotic pets
- ❖ Farming, e.g. ostriches, alligators
- ❖ Working, e.g. elephants

The Five Freedoms apply



Typical confinement

Environment is impoverished ⇒ stressful

(Morgan & Tromborg, 2007; Mason et al., 2007), e.g.

- ❖ **Lack of sensory stimuli relevant to the species**
- ❖ **Restricted movement, feeding and other behavioural opportunities**
- ❖ **Abnormal social groups and lack of area to retreat to**
- ❖ **Forced proximity to humans**
- ❖ **Too little environmental control**
- ❖ **Too much predictability, e.g. owned vs. feral cats**
(Dybdall et al., 2007)

Welfare issues 1: provision of food and water (basic need)

Method of presentation

- ❖ Feeding frequency
- ❖ Nutritional balance
- ❖ Hygiene

Depend on nutritional requirements

- ❖ Species behaviour
- ❖ Size, condition, physiological, reproductive and health status

Welfare issues 2: provision of suitable environment

Appropriate environmental conditions for comfort and wellbeing

Inside and outside enclosure must offer shelter

Enclosure and barriers must not harm animals

Balance of hygiene vs. biological needs



Welfare issues 3: provision of health care

Routine observations; records

- ❖ Condition, health and behaviour

Enclosure size and design must avoid injury

Enclosure must protect animals from

- ❖ Predators
- ❖ Build-up and spread of disease and parasites

Appropriate veterinary care must be available



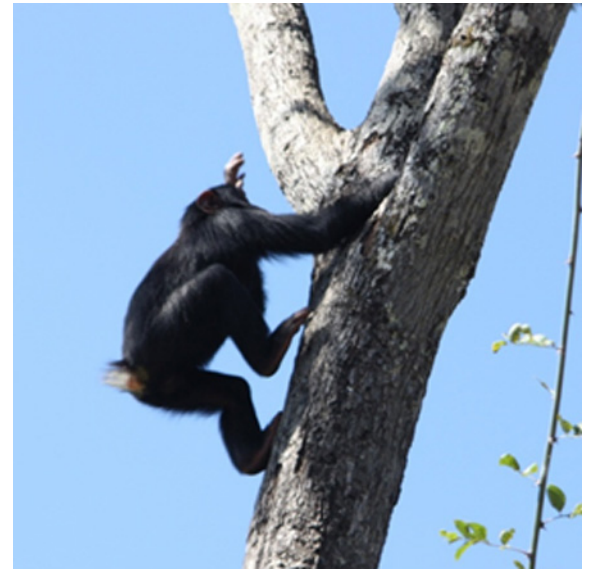
Credit: BRC

Welfare issues 4: expression of normal behaviour

Understand biology, habitat and husbandry needs

Life in captivity must meet these needs

Encourage species-specific normal behaviour and
minimise abnormal behaviour



Credit: Ruth de Vere

Welfare issues: protection from fear and distress

Cared for by qualified and experienced staff

Handling avoids discomfort, distress or injury

Appropriate housing

- ⌘ **Promote feeling of safety and security:**
- ⌘ Housing social species together
- ⌘ Providing a place to escape
- ⌘ Preventing unresolved conflict
(e.g. separating male animals)

Environmental enrichment

(Young, 2003; Mason et al., 2007)

How environments of captive animals can be changed for the benefit of their inhabitants

Goals of enrichment

- ❖ increase the frequency and diversity of positive natural behaviours
- ❖ decrease the occurrence of abnormal behaviour
- ❖ maximise utilisation of the environment
- ❖ increase the animal's ability to cope with the challenges of captivity or the wild

Type of enrichment 1

Depends on reason for keeping animals

- ❖ Long-term vs. short-term residents

Long-term residents

- ❖ Mimic or reproduce salient features of natural habitat ⇒ positive welfare
- ❖ Reduce or eliminate salient features ⇒ negative welfare



Credit: Helen Proctor

Type of enrichment **2**

Short-term residents

- ✦ **Provide salient features or stimuli of natural habitat**
- ✦ Including negative aspects to improve survivability following release
- ✦ Climatic extremes, thermal discomfort, variable and widely dispersed food sources, sub-toxic food, pathogens, changing environmental features

Must be permitted by animal protection laws

Increased survivability

Survivor skills

- ❖ Orientation
- ❖ Feeding and foraging
- ❖ Obtaining suitable places to rest and sleep
- ❖ Inter-species interactions (e.g. predators)
- ❖ Intra-specific interactions (e.g. breeding)

Reintroduction guidelines exist (e.g. IUCN, 1998)

- ❖ “The welfare of animals for release should be of paramount concern through all stages”

Zoos and parks

Functions of modern zoos

- ❖ Education, research, conservation and entertainment



Zoos

Serious concerns about welfare

- ❖ conditions that do not meet the Five Freedoms



Captive wild animals and ethics

Ethical and welfare concerns (mostly zoos)

- ❖ **Captive environment; lack of knowledge of needs**
- ❖ **Costs: compromised welfare of captive individuals**
- ❖ **Benefits: conservation through research, education, conservation and reintroduction**
- ❖ **Justification: highest standards of housing and care; promotion of education, research and conservation**

Meeting objectives?

Rescue and rehabilitation

Many wild animals need rescue and rehabilitation but not all ❖ **public education**

(Wimberger & Downs, 2010)

Keeping wild animals in captivity is difficult

- ❖ **Injuries, etc. can be treated and recovery is likely**
- ❖ **The animal can be returned to original or similar habitat**
- ❖ **There are sufficient resources, expertise and facilities**
- ❖ **The animal is endangered and cannot be released, but can be used for captive breeding**

If not, the animal should be humanely euthanised

Only do it if

Exotic pets

Wide variety of 'exotic' pets

- ❖ Local communities keeping indigenous animals
- ❖ Animals sold by large pet shops worldwide

Fear, distress and / or disease because of

- ❖ Extraction, capture, transport and confinement
- ❖ Confinement that does not meet species' needs
- ❖ Human contact and husbandry
- ❖ Inappropriate diets
- ❖ Inadequate veterinary care



Farming of wild species

Relatively wide range of species farmed

- ❖ Ostrich, wild boar, kangaroo, buffalo, peccaries

Some welfare concerns similar to domestic farm animals:
husbandry, housing, slaughter

Additional concerns

- ❖ Not domesticated, so greater distress and fear
- ❖ Need to modify some practices to avoid pain, fear and distress, e.g. slaughter of ostriches (Hoffman, 2012)

Working animals

Smallest category of captive wild animals

- ❖ Logging elephants, ‘helper’ monkeys, mine-hunting dolphins, circus and film animals

Particular concerns (pain, fear and distress)

- ❖ Human contact, handling, inappropriate training and alien situation
- ❖ May lack possibilities to perform normal behaviour
- ❖ New animals often need to be caught



Legislation

International examples

- ❖ **CITES (the Convention on International Trade in Endangered Species) (1975)**
- ❖ **International Convention for the Regulation of Whaling (1946)**
- ❖ **Convention on Migratory Species (1983)**

National example

- ❖ **The Animal Welfare Act of Philippines (1998)**

Summary

Most welfare issues are anthropogenic

Free-living wild animals: human encroachment

Captive wild animals: housing, handling and utilisation by humans

Improvement depends on awareness

❖ **Vets can play a critical role in this**

Feedback:

Please let us know what you think

- ❖ How have you used this module?
- ❖ What did you like about it?
- ❖ What did you not like?
- ❖ Do you have any tips to share?

Please take part in our 10 minute survey here:

<https://www.surveymonkey.com/s/BKP3D6H>

Your feedback will help other teachers like you

References

- Calver, M. C., Grayson, J., Lilith, M., & Dickman, C. R. (2011). Applying the precautionary principle to the issues of the impacts of pet cats on urban wildlife. *Biological Conservation*, *144*, 1895-1901.
- Calver, M. C., Thomas, S., Bradley, S., & McCutcheon, H. (2007). Reducing the rate of predation on wildlife by pet cats: The efficacy and practicability of collar-mounted pounce protectors. *Biological Conservation*, *137*, 341-348.
- Drake, D. R., Bodey, T.W., Russell, J. C., Towns, D.R., Nogales, M., & Ruffino, L. (2011). Direct Impacts of Sea-bird Predators on Island Biota other than Seabirds. In: C. P. H. Mulder, W. B. Anderson, D. R. Towns and P. J. Bellingham (Eds) *Seabird Islands. Ecology, Invasion, and Restoration*. (pp 91-132) Oxford. Oxford University Press
- Dybdall, K., Strasser, R., & Katz, T. (2007). Behavioral differences between owner surrender and stray domestic cats after entering an animal shelter. *Applied Animal Behaviour Science*, *104*, 85-94.
- Elwood, R. W. (2012). Evidence for pain in decapod crustaceans. *Animal Welfare*, *21*(S2), 23-27.
- Hoffman, L. C. (2012). Advances in the electrical stunning and bleeding of ostriches. *Animal Welfare*, *21*(S2), 9-13.
- IUCN (1998). IUCN Guidelines for Reintroductions. Cambridge: International Union for the Conservation of Nature and Natural Resources. Retrieved July 18, 2012, from www.iucnsscrg.org/download/English.pdf
- Kakapo Recovery 2012 Kakapo Habitat. Available at: www.kakaporecovery.org.nz/index.php?option=com_content&view=category&layout=blog&id=58&Itemid=170
- Leach, M., Whey, B., & Main, D. (2005). Identifying priority welfare issues affecting free-living wildlife in Sub-Saharan Africa and Latin America. Final report: Findings of the 1st consultation stage. WSPA internal report.
- Littin, K. E. (2012). Better rodent control by better regulation: Regulatory incentives and regulator support to improve the humaneness of rodent control. *Animal Welfare*, *21*(S1), 137-140.
- Mason, G., Clubb, R., Latham, N., & Vickery, S. (2007). Why and how should we use environmental enrichment to tackle stereotypic behaviour? *Applied Animal Behaviour Science*, *102*, 163-188.
- Mathews, F. (2010). Wild animal conservation and welfare in agricultural systems. *Animal Welfare*, *19*, 159-170.
- Morgan, K. N., & Tromborg, C. T. (2007). Sources of stress in captivity. *Applied Animal Behaviour Science*, *102*, 262-302.

Further reading

Warburton, B., Tompkins, D. M., Choquenot, D., & Cowan, P. (2012). Minimising number killed in long-term vertebrate pest management programmes, and associated economic interests. *Animal Welfare*, 21(S1), 141-149.

Wimberger, K., & Downs, C. T. (2010). Annual intake trends of a large urban animal rehabilitation centre in South Africa: A case study. *Animal Welfare*, 19, 501-513.

Young, R. J. (2003). *Environmental enrichment for captive animals*. Oxford. Blackwell Science.

Austen, M., & Richards, T. (2000). *Basic legal documents on international animal welfare and wildlife conservation*. London. Kluwer Law International.

Inglis, I. (2007). *Wildlife management and welfare*. Oxford. Blackwell Science.

Kleiman, D. G., Allen, M. E., Thompson, K. V., & Lumpkin, S. (Eds.) (1997). *Wild mammals in captivity: Principles and techniques*. Chicago. University of Chicago Press.

Taber, R. D., & Payne, N. F. (2004). *Wildlife, conservation, and human welfare*. Melbourne, Florida, US. Krieger Publishing Company.