

Module 18

Welfare of Working Animals



This lecture was first developed for **World Animal Protection** by Dr David Main (University of Bristol) in 2003. 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

What species of animals are used for working and the tasks which they undertake

Why they have welfare problems

How to identify problems affecting their welfare

What short-term improvements can be made

What is needed for long-term improvements and alternatives

Why improved welfare benefits both the owner and the animal

Introduction

At least 400 million working animals, mainly draught

- ✦ Used by at least 2 billion people in about 30 countries

Purpose of working animals

- ✦ Agriculture
- ✦ Hauling carts
- ✦ Power to devices
- ✦ Carrying loads on back, e.g. bricks, people
- ✦ Herding, guarding, hunting, assistance
- ✦ Also: meat, milk, fibre

Introduction: types of working animals 1

Equids: horses, donkeys and mules

In Asia (Middle East, India, Pakistan, China);
Africa (many countries),
Central and South America

Globally – military and police
horses/mules

Ruminants

Buffalo (*Bubalis* spp) in Asia, Brazil, Egypt

Cattle (*Bos* spp) globally

- ❖ Eg gayal (*Bos frontalis*) in India, Indonesia and Malaysia
- ❖ Yak

Camelidae

- ❖ Camels, eg India, N Africa
- ❖ Llamas – Andes

Introduction: types of working animals **2**

Elephants: India, SE Asia

Dogs: globally, for

- ✦ **Transport**
- ✦ **Herding, guarding and hunting**
- ✦ **Detecting explosives and drugs**
- ✦ **Human assistance, e.g. people who use wheelchairs;
people with visual impairments**

Common welfare problems (Ramaswamy, 1998)

- ❖ **Overworking/insufficient rest**
Renting ❖ lack of responsibility
- ❖ **Overloading/inadequate loading technique**
- ❖ **Inadequate equipment (cart, harness)**
- ❖ **Inhumane handling**
- ❖ **Working while in poor health or too young**
- ❖ **Road accidents**
- ❖ **Seasonality of work**
- ❖ **Lack of health care**
- ❖ **Poor nutrition**

Underlying causes: welfare inputs

Husbandry system

Role of economics – poverty – only source of income – affects feeding, rest, veterinary care, etc.

Genetics

Stockperson/owner

Knowledge

Attitude – poverty → despair (de Aluja, 1998)

Cultural attitude to, e.g. donkeys

No normal animals to compare with: 'bad becomes normal'

How to identify problems

Area	Criteria
1. Good feeding	Animal should not suffer from prolonged hunger
	Animal should not suffer from prolonged thirst
2. Good housing	Animal should have comfort around resting
	Animal should have enough space to allow ease of movement
	Animal should have thermal comfort
3. Good health	Animal should be free of physical injuries
	Animal should be free of disease
	Animal should not suffer pain caused by procedures
4. Appropriate behaviour	Animal should have a positive emotional state, and negative emotions should be avoided as far as possible
	Animal should be able to express normal social behaviours
	Animal should be able to express species-typical behaviours
	Promotion of good human–animal relationships

The welfare of working equids



Horses

Social

Open grassland

Flight instinct

Not well adapted to arid conditions

Numbers in 2011 (FAO)

Africa: ~5 million

Asia: ~13.5 million

Central and South America:
~22 million

Donkeys

(Social)

Arid habitat

More efficient thermoregulation,
less water lost in sweat, etc.

Utilise poor quality forage

Can withstand dehydration and
keep eating

Numbers in 2011 (FAO)

Africa: ~18 million

Asia: ~16.4 million

Central and South America:
~6 million

Mules

Male donkey bred with female horse

Numbers in 2011 (FAO)

Africa: ~1 million

Asia: ~3.5 million

Central and South America: ~6 million

Area 1: good feeding

Free from prolonged hunger

Body condition score (BCS)

- ✦ Quantity of food
- ✦ Auality of food
- ✦ Access to food
- ✦ Endoparasites
- ✦ Teeth
- ✦ Other disease



BCS predicts other aspects of welfare (Burn et al., 2010)

- ✦ 70–80 per cent had a BCS of 1 or 2
(Pritchard et al., 2005; Burn et al., 2010)

Area 2: good housing (working comfort) 1

Resting area

- ❖ Tethering and hobbling
- ❖ Time to rest

Ease of movement

- ❖ Tethering and hobbling
- ❖ Harness and equipment
(cart, plough, etc.)
- ❖ Not overloaded, eg in Lahore (Whay, 2010)
 - 400kg (small donkeys)
 - 600–700kg (large donkeys)



Harnessing 1



Harnessing 2

Guidelines on harnesses and carts

World Association for Transport
Animal Welfare and Studies (TAWs)

www.taws.org/harnessguidelines.htm



Area 2: good housing (working comfort) 2

Temperature – heat stress, eg

- ❖ Panting, laboured breathing
- ❖ Increased body temperature
- ❖ Less elastic skin

Treatment: pour on cold water

Prevention

- ❖ Shade when resting
- ❖ No overwork
- ❖ Water: horses, 40–60 litres per day; donkeys, 20 litres per day (Heleski et al., 2010)
 - 40–50 per cent of 4,903 animals were dehydrated on skin-pinch test (Pritchard et al., 2005)



Area 3: good health (pain) 1

Lameness

90–100 per cent (Burn et al., 2010)

Hooves

- ⌘ Overgrown
- ⌘ Too short
- ⌘ Cracks

Arthritis/tendonitis

Injuries

Firing

Farriery – shoeing



Area 3: good health (pain) 2

Skin lesions from

Saddle / harness

Beating

Tether / hobble

Injuries from falling down / cart / accidents



Area 3: good health (pain) 3

Infectious diseases

- ✦ Tetanus
- ✦ Rabies
- ✦ Leptospirosis, e.g Brazil (Heleski et al., 2010)

Parasites

- ✦ Helminths
- ✦ Ectoparasites, e.g. ticks – mowing grass as effective as ectoparasite treatment? (Labruna et al., 2001)

Disposal of old / sick animals

Left to die

- ❖ Owners hope animal might recover
- ❖ Cultural objection to euthanasia
- ❖ No value
- ❖ Lack of knowledge about alternatives

Dealer – transport – slaughter



Area 4: Appropriate behaviour

Negative emotional states

- ❖ Inhumane treatment ❖ fear, apathy
- ❖ Cognitive bias?
- ❖ Aggression (Burn et al., 2010)

Important behaviours

- ❖ Social
- ❖ Mother and young



Changing owners' behaviour

Role of human–animal bond?

You can use participatory learning approaches to encourage, support and strengthen an owner's ability to:

- ✦ **Identify his or her animal's welfare needs**
- ✦ **Set his or her own objectives for improving welfare**
- ✦ **Plan, implement and monitor and evaluate his or her own initiatives**
(van Dijk et al., 2011)

Example: donkey owners in Lahore

- ✦ **Their own checklist**
- ✦ **Monthly assessments (Whay, 2010)**

Summary so far

What species of animal are used for working

Equids

- ▣ **Why they have welfare problems**
- ▣ **How to identify problems affecting their welfare**
- ▣ **What short-term improvements can be made**

Next: Ruminants, elephants and dogs

What is needed for long-term improvements and alternatives

Why improved welfare benefits the owner and the animal

The welfare of working ruminants



Water buffalo

Main purposes

- ❖ Milk, meat
- ❖ Work



Humid tropics

- ❖ Access to water necessary
- ❖ Large hooves are well suited for work in wet conditions
- ❖ Slow animal



Cattle



**Humped/zebu:
warm climate**



**Non-humped:
temperate regions**

Welfare of working buffalo and cattle

Area	Criteria of concern
1. Good feeding	Prolonged hunger
2. Good housing	Ease of movement
	Thermal comfort
3. Good health	Injuries
	Disease
	Pain caused by procedures
4. Appropriate behaviour	Positive emotional state
	Expression of species-typical behaviours
	Good human–animal relationships

Area 2: good housing (working comfort)

Information on harnesses and carts for bullocks

India: Centre for Action Research and Technology
for Man, Animal and Nature (CARTMAN)

<http://www.livestock-nature-development.org/CompletedProjects.html#bullcartmanual>

Case study: ox carts in Madagascar 1

Rural transport programme

- ❖ 'Ban traditional ox carts – use pneumatic tyres instead'
- ❖ Improve animal welfare
- ❖ Protect roads

Case study: ox carts in Madagascar 2

Local people use traditional carts because they

- Are cheaper and easily available
- Are puncture-free and long-lasting
- Have a very good braking system
- have high clearance for poor roads
- Are noisy, so people can hear them

Camelidae

Camels:

One-humped = dromedary

Two-humped = bactrian

Extreme temperatures

Hump

Physiology

Llamas

Pack animals



The welfare of camelidae

Area	Criteria of concern
1. Good feeding	Prolonged hunger
2. Good housing	Ease of movement
3. Good health	Injuries
	Disease
	Pain caused by procedures
4. Appropriate behaviour	Expression of species-typical behaviours
	Good human–animal relationships

Elephants

Trained wild animals

- ❖ Breeding
- ❖ Training

Ceremonial / tourist / timber logging

Life span (Laws 1966; Clubb et al 2008)

- ❖ In wild ~60 years
- ❖ At work ~40 years (Burma)
- ❖ In zoos ~19 years



Credit: Minna Tallberg



The welfare of elephants

Area	Criteria of concern
1. Good feeding	Prolonged hunger
2. Good housing	Ease of movement
3. Good health	Injuries
	Disease
4. Appropriate behaviour	Positive emotional state
	Expression of social behaviours, as appropriate to the species
	Expression of species-typical behaviours
	Good human–animal relationships

The welfare of working dogs

Types of work

- ▣ Herding
- ▣ Guarding
- ▣ Hunting
- ▣ Draught
- ▣ Military / police
- ▣ Assistance, e.g. guide dogs



The welfare of working dogs

Area	Criteria of concern
1. Good feeding	Prolonged hunger
	Prolonged thirst
2. Good housing	Ease of movement
3. Good health	Disease
4. Appropriate behaviour	Positive emotional state
	Expression of social behaviours, as appropriate to the species
	Expression of species-typical behaviours
	Good human–animal relationships

Solutions for the welfare of working animals

Four main solutions (Ramaswamy, 1998)

Nutrition and health care

Improved harnesses, carts, etc.

Improved education, subsidies, laws, etc.

- ❖ **Economic importance of working animals still isn't recognised, eg difficult to calculate; populations who use working animals are overlooked for cultural and political reasons (FAO / Brooke, 2011)**

Improved breeding

Animal Welfare Portal, FAO

- ❖ **www.fao.org/ag/againfo/themes/animal-welfare/en/**

Nutrition and health care

Veterinary treatment

- ⌘ Rest animal
- ⌘ Provide shade
- ⌘ Frequent watering and feeding
- ⌘ (Euthanasia)

Training of farrier

Field-based vets and technicians

Veterinary advice

Social behaviour

Keep social animals in groups

Ensure adequate mother–offspring contact

Locomotory behaviour

Limited tethering

Housing in pens, paddocks

Comfort behaviour

Provide wallows – elephants, buffaloes

Allow grooming behaviour

Groom animals



Improved harnesses, carts, etc.

Immediate improvements to equipment (Heleski et al., 2010)

- ❖ **Padding: cotton canvas; soft leather; sheepskin; woven wool; foam**
- ❖ **Repairs: twine or string, not wire**
- ❖ **Cleaning**

Make vehicles more visible



Improved education

Owner education

Tourists (Burn et al., 2010)

Educating children



Improved breeding

Optimal adapted species / breed, eg

Conformation

Temperament

Disease-resistance

Summary

Special needs of species

Common problems

- ❖ Ignorance of owners
- ❖ Overwork
- ❖ Malnutrition
- ❖ Parasitic disease

Prevention and treatment – education

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

- Burn, C., Dennison, T. L., & Whay, H. R. (2010). Environmental and demographic risk factors for poor welfare in working horses, donkeys and mules in developing countries. *The Veterinary Journal*, 186, 385-392.
- Clubb, R., Rowcliffe, M., Lee, P., Mar, K. U., Moss, C., & Mason, G. J. (2008) Compromised survivorship in zoo elephants. *Science* 322: 1649
- de Aluja, A. S. (1998). The welfare of working equids in Mexico. *Applied Animal Behaviour Science*, 59, 19-29.
- FAO/Brooke (2011). Food and Agriculture Organization (FAO)/The Brooke Electronic Consultation on the role, impact and welfare of working (traction and transport) animals. Retrieved from www.fao.org/fileadmin/user_upload/animalwelfare/FAO-The%20Brooke%20working%20animals%20e-consultation%20report.pdf
- Heleski, C. R., MacLean, A. K., & Swanson, J. C. (2010). Practical methods for improving the welfare of horses, donkeys and other draught animals in developing areas. In T. Grandin (Ed.), *Improving animal welfare. A practical approach* (pp. 252-273). Wallingford, UK: CABI.
- Labruna, M. B., Kerber, C. E., Ferreira, F., Faccini J.L.H., De Waal, D.T., & Gennari, S.M. (2001). Risk factors to tick infestations and their occurrence on horses in the state of São Paulo, Brazil. *Veterinary Parasitology*, 97, 1-14.
- Laws, R. M. (1966). Age criteria for the African elephant. *African Journal of Ecology*, 4, 1-37.
- Pritchard, J. C., Lindberg, A. C., Main, D. C. J., & Whay, H.R. (2005). Assessment of the welfare of working horses, mules and donkeys, using health and behaviour parameters. *Preventive Veterinary Medicine*, 69, 265-283.
- Ramaswamy, N. S. (1998). Draught animal welfare. *Applied Animal Behaviour Science*, 59, 73-84.
- van Dijk, L., Pritchard, J., Pradhan, S. K., & Wells, K. (2011). *Sharing the load: A guide to improving the welfare of working animals through collective action*. Bourton on Dunsmore, Rugby, UK: Practical Action Publishing
- Whay, H. (2010). Horses and donkeys. In J. Webster (Ed.), *Management and welfare of farm animals* (5th ed., pp 414-451). Chichester, UK: Wiley-Blackwell.

Further reading

Hadrill, D. (2002). *Horse health care: a manual for animal health workers and owners*. Bourton on Dunsmore, Rugby, UK: Practical Action.

Hovell, G. J. R. (1998). Welfare considerations when attaching animals to vehicles. *Applied Animal Behaviour Science*, 59, 11-17.

Kaushik, S. J. (1999). Animals for work, recreation and sport. *Livestock Production Science*, 59, 145-154.

Legel, S. (1989). *Nutztiere der Tropen und Subtropen [Livestock in the topics and subtropics]*. Leipzig, Germany: Hirzel.

McCrinkle, C. M. E., & Moorosi, L. E. (1999). Extension to improve the welfare of traction animals. In P. Starkey & P. Kaumbutho (Eds.), *Meeting the challenges of animal traction*. Rugby, UK: ITDG Publishing.

Pathak, B. S., & Gill, B. S. (1984). 'Management and utilization of cattle for work'. In FAO (Eds.) *Expert Consultation on Appropriate Use of Animal Energy in Agriculture in Africa and Asia*, pp.8-20, 15 Nov 1982, (FAO Animal Production and Health Paper no. 42). Rome: Animal Production and Health Division.

Starkey, P., & Kaumbutho, P. (1999) *Meeting the challenges of animal traction. A resource book of the Animal Traction Network for Eastern and Southern Africa (ATNESA)* . Rugby, UK: ITDG Publishing.

Sherman, D. M. (2002). *Tending animals in the global village: A guide to international veterinary medicine*. Oxford: Wiley Blackwell.

Useful websites

Animal traction information and links:

www.animaltraction.com

Animal Traction Network for Eastern and Southern Asia:

www.atnesa.org

Draught Animal News:

www.vet.ed.ac.uk/ctvm/Welcome%20page/Publications/DAN/DANFP.HTM

World Association for Transport Animal Welfare and Studies:

(TAWs): www.taws.org