WHITE PAPER

Good Welfare for Equids

EUROGROUP FOR ANIMALS

THE DONKEY SANCTUARY

WorldHorseWelfare

ippothesis

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DEUTSCHER TIERSCHUTZBUND

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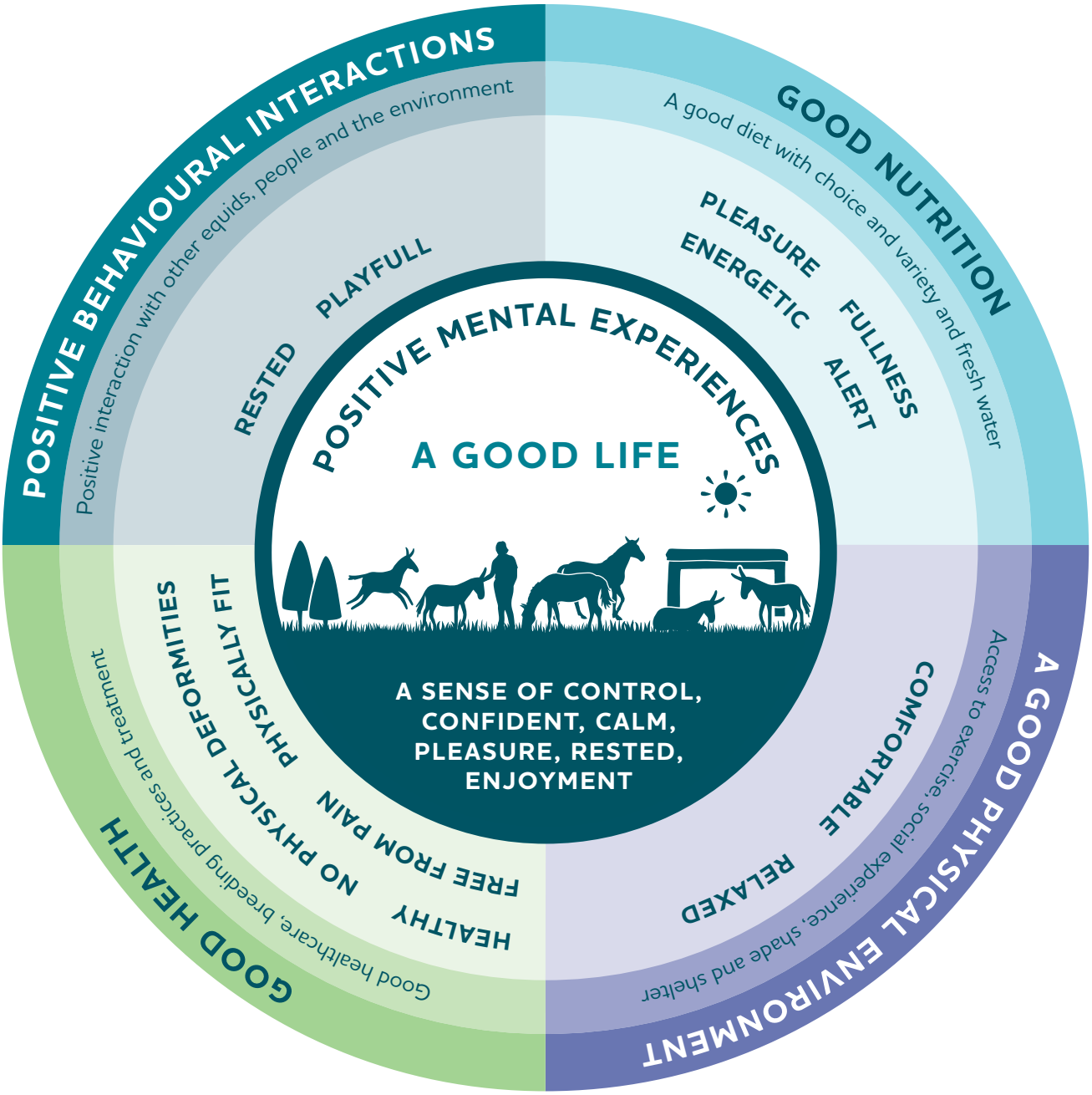

Providing a Good Life involves more than just minimising negative life experiences that lead to negative emotional states such as stress and fear but requires also that the animal experiences positive emotions similar to contentment, joy, pleasure and happiness as experienced by people.

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Executive summary

Currently there are an estimated 7 million or more horses, donkeys and mules (equids) in Europe (European Horse Network, n.d.). They fulfil a variety of roles from working animals in agriculture and tourism to being used for sport and leisure. The definition of equids and their subsequent inclusion or exclusion from contextual legislation, for example as farm or companion animals, can affect the provision and protection they are afforded. Equids therefore run the risk of falling into legislative gaps and grey areas, with many moving in and out of relevant scope throughout their lifetime. In addition, implementation and enforcement of relevant European Union legislation can vary considerably between European countries, including assessments undertaken by competent authorities, which can lead to welfare standard disparity and differences in provision of services to accommodate welfare needs. Given that the use of animals carries with it an ethical responsibility to ensure the welfare of such animals to the greatest extent practicable (World Organisation for Animal Health, 2024) it's essential that equid welfare is properly safeguarded through effectively enforced species specific legislation.

THIS WHITE PAPER OUTLINES THE RATIONALE, AND PROVIDES THE EVIDENCE FOR OUR CALL FOR ACTION (see Section 8) FOR ENSURING THAT:

- All equids are included in legislation because of the degree of interchangeability between the different purposes for which they are kept.
- There is an agreed single, specific definition of "Equidae" stated within core EU legislation related to animal welfare and relevant policies.
- There is recognition that because equids are sentient beings with an intrinsic value, they should all have the same legislative framework and welfare expectations applied to provide a good quality of life irrespective of their economic value, with the opportunity to experience, within practical parameters, positive physical, mental and emotional well-being with the ultimate aim of providing them with a Good Life.
- There is recognition that all equids are as significant as those animals kept for production purposes in Europe, and there is an equal approach to ensure good welfare for all equids across Europe.
- All equids benefit from individual identification (ID), and registration, with traceability and surveillance made possible via a central register
- There is ongoing investment in research and education to address gaps in knowledge regarding equids and equid welfare in Europe, recognising the ever-changing nature of evidence-based information and ever evolving understanding of equid needs for good welfare.
- As all equids irrespective of their original purpose are susceptible to be traded/ placed on the Union market, all kept equids should be ensured of good welfare with the aspiration to provide them with a Good Life.

1.
What are equids?

KEY POINT: **There needs to be an agreed single, specific definition of "Equidae" stated within core European Union legislation related to animal welfare and relevant policies.**

Equid(s)/Equidae is the family name for species that include horses, donkeys and their hybrids. These are defined as the:

HORSE

The horse, *Equus ferus caballus,* is one of two extant subspecies of *Equus ferus.*

DONKEY

the donkey is a domesticated equid, derived from the African wild ass, *Equus africanus,* and may be classified either as a subspecies thereof, *Equus africanus asinus,* or as a separate species, *Equus asinus.*

HYBRID

Hybrids (Mules and Hinnies) are the result of breeding between a horse and a donkey

There are an estimated 7 million horses, donkeys and mules (equids) within Europe (European Horse Network, n.d.) used widely for production, work, sport, tourism, companionship and leisure, as well as for habitat conservation and species biodiversity. Their varied status has led to there being no uniformity regarding the way they are classified, and in turn protected under current EU animal welfare legislation and guidelines. This White Paper will consider all equids generally, but where there are important differences for the donkey or the hybrid these will be highlighted.

Equids are perhaps one of the most versatile animals, and many of them may fulfil many different roles across their lifetime. They are used widely for production, work, sport, and leisure, and are ecologically important in habitat conservation and species biodiversity. Their diversity makes definition and categorisation challenging, especially because there is frequent movement between the sectors and little clear demarcation.

However, these categories are organised, for the purposes of this White Paper, according to the specific risks faced by domesticated equids whose primary role falls within these sectors:

- Production
- Work
- Sports and Racing
- Leisure

In addition, equids may also be found across Europe living as feral or semi-feral groups, and these animals are as important as those managed by humans and are also deserving of protection.

The provision of good equid welfare depends to a large extent on understanding the differences among the species involved. Important features of the evolution, ethology, and behaviour of horses, donkeys and their hybrids are outlined below.

EQUIDAE – EVOLUTION AND ETHOLOGY

Horses and Ponies

Looking at the origins of the horse tells us much about their natural behaviours and behavioural needs. They were first domesticated more than 5500 years ago and, although certain characteristics of the modern horse, such as size, type, colour, feed conversion, and temperament have been changed through selective breeding, horses retain most of their wild ancestors' evolved characteristics. There are no truly wild horses, although there are examples of feral or semi-feral horses living in different environments in Europe. Feral and semi-feral horses are defined as free-roaming equids descended from domesticated ancestors but living in an unmanaged or relatively unmanaged natural state.

Horses adapted to life on the temperate open plain. They adapt well to different climates and can cope well in environments with significantly different temperatures. As a preyed upon herbivore whose survival has relied on developing a good sense of balance and a strong flight response, they have excellent peripheral vision and will react quickly to any perceived danger, running at great speeds over long distances. Many of the predator-avoidance behaviours so essential for the survival of their wild ancestors, have been retained through domestication. This means that even seemingly confident individuals will react defensively (kicking or running away) when frightened and need to be handled and trained to reduce their reactivity.

Horses are also highly social animals forming strong bonds, and who rely upon the security provided through being within a stable group. They primarily communicate through subtle body language. While they do use vocalisation to convey information to their group mates, they use them sparingly probably to avoid attracting the attention of predators. When free to form their own social environment such as with feral or semi-feral horses, they tend to live in small to medium-sized groups depending upon the environment and resources, and mainly interact with each other on a bilateral level (i.e., each horse has an individual relationship with each other horse in the group).

Under optimal conditions, they form long-lasting bonds with other horses, and it is thought that this aspect of their nature has been instrumental through domestication in enabling humans to train, ride and drive them. Due to their digestive physiology, under natural conditions horses spend a considerable portion of each day (around 16 hours) grazing (trickle-feeding), on low energy grasses and leaves, and under optimal conditions, their fasting periods do not normally exceed more than 4 hours.

Donkeys

The origins of the donkey explains much of the differences between the equid species. They were first domesticated in Africa some 5000–7000 years ago and have been used mainly as working equids since that time. Their ancestors came from an arid, rugged terrain with limited supplies of food and water which could not support large herds, therefore the donkey leads a relatively solitary life with mares staying in groups of 2- 3 and stallions developing territorial behaviour. They would browse on low nutrient plants for 14 - 18 hours a day whilst travelling up to 30 km. The loud call or bray of the donkey, which typically lasts for 20 seconds and can be heard for over 3 kilometres, is thought to assist in maintaining contact with conspecifics over the wide spaces they roam.

Their distinguishing feature – their large mobile ears, assist in picking up braying from distant donkeys, and in controlling body temperature in desert environments. The domesticated donkey is described as intelligent, sociable and calm, and it's for this reason that they are not only used for working purposes but also valued as companion animals.

It's important to note that their behaviour and some of their physiology differ considerably from horses, for example they have different ways of responding to frightening or aversive situations. They have a strong sense of self-preservation and won't readily do something they consider unsafe. They have a natural propensity to freeze when threatened or frightened or they may respond to a threat with a 'flight' response. They demonstrate 'stoicism' or 'masking behaviour' as a typical predator-avoidance behaviour seen in the more solitary species, demonstrating subtle body language, especially when showing pain or fear. Due to their territorial nature, they can engage in a 'fight' response more quickly than a horse.

Hybrids (Mules, Hinnies)

Hinnies are generally less common than mules and are often smaller, typically having the body of a donkey and the extremities of a horse.

Mules have hybrid vigour, are often less prone to ailments than either parent and can withstand extreme climates. They can carry more weight than donkeys. They can be calm and stoic like the donkey but also have the energetic flighty reactions of the horse, although they are less likely to panic than horses

Mules and hinnies are misunderstood, and there is currently very little knowledge about their behaviour. The main challenge is that they take 50% of their genes from horses and 50% from donkeys, two species with quite different behavioural biology, and we can't know which genes they take from which parent, or how they interact with each other. It is important, as with all equids, they are handled appropriately and from a young age.

2.
The legal framework for the keeping and welfare of equids in the EU

KEY POINT: **There needs to be revised European animal welfare legislation that addresses key concerns with regards to the keeping and care of equid animals, regardless of their purpose or monetary value. This legislation should take into account the species-specific needs of equid animals and, therefore, must include equid species-specific provisions.**

There is a need to accommodate the differing perceptions of equids across Member States and to introduce species-specific legislation for equid welfare. The legal position of equids varies throughout the European Union, resulting in differences in their classification and treatment under the law. This lack of consistency can cause confusion for equid owners, businesses, and enforcement agencies, particularly in the context of cross-border trade, as can the fact that there is no single, specific definition of "equidae" within the core EU regulations related to animal welfare.

The revised Treaty on the Functioning of the EU (TFEU), adopted in Lisbon in 2007, marked a potential revolution in animal welfare. The introduction of Article 13 TFEU represents a significant acknowledgment by the EU, in recognising animals as sentient beings.

While Article 13 TFEU itself does not serve as a legal basis for addressing animal welfare concerns, it serves as a guiding principle that the European Commission, co-legislators, and courts must consider when legislating under the specific

legal bases outlined in Article 13. These include agriculture, fisheries, transport, the internal market, research and technological development, and space policies.

There is currently no specific EU legislation for the protection of equids kept for economic purposes, and these species are only vaguely covered by the horizontal provisions of Directive 98/58/EC intended only for animals kept for farming purposes and explicitly excludes wild, experimental or laboratory animals and animals intended for use in competitions, shows, and cultural or sporting events or activities (Art 1.1 & 1.2).

Some EU provisions related to equids concern traceability under the Animal Health Law (Regulation (EU) 2016/429). These are aimed at safeguarding public health and are supplemented by Commission Delegated Regulation (EU) 2019/2035 as regards rules for the identification and traceability of equids and Regulation (EU) 2021/963 that specifies the format and content of the single lifetime identification document for equids (equine passport).

An important caveat on traceability requirements needs to be made for certain horse populations kept under wild or semi-wild conditions to whom traceability requirements cannot be fully applied (Commission Delegated Regulation (EU) 2019/2035).

EU legislation regarding the licensing and administration of veterinary medicinal products to equids is governed by Regulation (EU) 2019/6 of the European Parliament and of the Council.[1]

Directive 2010/63/EU applies when collecting blood from pregnant mares for the purpose of producing medicinal products (Art 3.1). This Directive mandates the application of the 3Rs (Replacement, Reduction, and Refinement), requiring that animal experiments be replaced by alternative methods not involving live animals whenever possible.[2]

A Proposal for a Regulation of the European Parliament and of the Council on the protection of animals during transport and related operations, amending Council Regulation (EC) No 1255/97 and repealing Council Regulation (EC) No 1/2005 is currently under discussion at the Council level as of the making of this report with EFSA's opinion broadly concluding that providing more space, lowering maximum temperatures and keeping journey times to a minimum are required to improve animal welfare during transport.

The primary piece of EU legislation on slaughter, also applying to equids, is Council Regulation (EC) No 1099/2009 on the protection of animals at the time of killing which is in need of improvement in animal welfare terms as has been acknowledged under the Farm to Fork Strategy.

Ultimately, the recommendations and conclusions from the EU Platform on Animal Welfare, established by a Commission Decision on 24 January 2017, serve as advice to assist the Commission. This group and in particular the outcomes of the experts group on the welfare of equids should also be taken into account when aiming at achieving a 'Good Life' for all equids.

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[1] On this regard the Commission shall present a report to the European Parliament and Council no later than 29 January 2025 on its assessment of the situation as regards the treatment with medicinal products of equines and their exclusion from the food chain including with regard to imports of animals of the equine species from third countries, to be accompanied by any appropriate action by the Commission taking into account, in particular, public health, animal welfare, the risks of fraud and the level playing field with third countries.

[2] Iceland admits to breaching EU law on horse blood farms.

3.
What is good welfare for equids?

KEY POINT: **There needs to be a focus on positive welfare with requirements for equid sectors to demonstrate minimum welfare standards as outlined in this White Paper, and support where required, to attain best practice standards of welfare, to enable equids to live a 'Good Life'.**

According to the World Organisation for Animal Health, animal welfare is defined as the way in which an animal is coping (*physically, behaviourally, socially and mentally*) with the conditions in which they live and die. An animal is considered to be in a good state of welfare if (as indicated by scientific evidence) they are healthy, comfortable, well nourished, safe, able to express innate behaviour, and they are not suffering from unpleasant emotional states such as pain, fear, and distress (World Organisation for Animal Health, 2014).

The equid-human relationship has a long and varied history related to changing human/societal needs. Our association and reliance upon the various species of equids has included: as transportation of goods and people, fast travel for trade, migration and communication, for effective military action, in revolutionising farming practices, as a symbol of prosperity or power and to provide sustenance through meat, milk and fuel. Their contribution to the development and maintenance of many societies has been considerable. Today, they are also used for sport and recreation, in human health services and conservation projects.

The ethics of their use concerns the moral position an individual or society takes in relation to how they should be treated. What is deemed acceptable is a value-based position held by an individual/group. Welfare science can help inform these ethical discussions but cannot set thresholds. Instead, it contributes empirical evidence of what is, or is not, acceptable from the animals' point of view.

Over the past decades, societal attitudes toward animals have progressively shifted, leading to widespread recognition and acceptance of animal sentience which refers to the capacity to have both negative (unpleasant) and positive (rewarding) experiences (Mellor, 2012). Historically, acceptable welfare standards focused on the minimisation of negative emotional experiences, such as pain, fear, and distress (Mellor, 2017). However, the absence of negative emotion does not necessarily mean that the animal is experiencing good welfare – and it's now recognised that animals must also experience and express positive affective states (emotions) (Lawrence et al., 2019; Mellor, 2017), for their welfare to be good (Boissy et al., 2007) .

This shift has driven three key advances in animal welfare science:

- Significant growth in the study of animals' affective (emotional) states, and how to evaluate them (Mellor, 2017).
- The focus has moved from merely minimising negative experiences to also promoting opportunities for animals to have positive experiences (Mellor et al., 2020).
- There is now greater attention on the cumulative effects of experiences over time, emphasising the importance of assessing welfare at multiple points throughout an animal's life, to determine their Quality of Life (Mellor et al., 2020; Reimert et al., 2023).

Emotions can be broadly defined as an innate, intense but short-lived response to an event that has behavioural, physiological, subjective (emotional), and cognitive components (Paul et al., 2005). Emotions have the evolved functional role of motivating behaviours that are crucial for an animal's survival and to flourish. This means that although emotions are subjective, they can be inferred and evaluated by observing and/or measuring changes in behaviours and/or physiology associated with them (Hall et al., 2018; Waran & Randle, 2017) . Emotional state as used in this paper, refers to the longer, less intense, over-arching mood or outlook, for example, the negative emotional state called 'depression' or the positive emotional state such as 'pleasure'. Momentary emotion is event-related, whereas emotional state or mood is not linked to a particular stimulus or event.

Where health or environmental issues impact on an equid's emotional state, expression in terms of behaviour is considered the most accessible indicator of that animal's subjective experience.

Equid welfare is therefore best described as the integrated mental experiences (feelings) that arise from an individual's perception of their internal state and their external situation, which can be positive, negative or neutral.

The notion of Quality of Life (QoL) acknowledges that animals can have both negative and positive experiences, and that the net balance between them will vary over time providing for opportunities for assessment at different time points. Quality of Life therefore has a strong emphasis on the individual and their subjective experience over longer time periods. Assessment of the balance of these emotions at different time points enables consideration of QoL in relation to a scale defining; "a life not worth living", "a life worth living" and "a good life" (Farm Animal Welfare Council, 2009).

Quality of Life (QoL) definitions in terms of the relative balance of positive and negative experiences equids may have:

A GOOD LIFE	The balance of salient positive and negative experiences is strongly positive. Achieved by full compliance with best practice advice well above the minimum requirements of welfare.
A LIFE WORTH LIVING	The balance of salient positive and negative experiences is favourable, but to a lesser extent than for a Good Life. Achieved by full compliance with the minimum requirements of welfare that include elements which promote some positive experiences.
A LIFE NOT WORTH LIVING	The balance of salient positive and negative experiences is strongly negative and cannot be remedied through veterinary intervention or change in husbandry practices. Euthanasia may need to be considered.

Note: *A definition of Quality of Life. Adapted from Green & Mellor, 2011.*

Since the absence of suffering alone does not deliver good welfare (Mellor, 2015), requiring that equids have a Good Life (and therefore experience positive welfare) means that positive affect (emotion) must be assessed.

An equid that is in positive welfare will be able to respond to motivational needs such as the ability to engage in behaviours they find rewarding. This enables them to exercise "agency", where they can participate in voluntary, self-generated and goal-directed behaviours (Wemelsfelder, 1997) with a general sense of having some control regarding their environment and interactions.

> *"Under a transport of joy or of vivid pleasure we see this in the bounding and barking of a dog when going out to walk with his master; and in the frisking of a horse when turned out into an open field."*
>
> Darwin 1872[3]

Therefore, to achieve a good QoL, equid living environments should provide opportunities which include: access to preferred sites for resting and that provide thermal comfort; environmental choices that encourage exploratory and food acquisition behaviours which are enjoyable (such as a variety of forage providing pleasurable tastes and textures); circumstances for social activities for bonding and other affiliative interactions including; mutual grooming, unrestricted social play and maternal behaviour. The objective is to provide a range of opportunities, and to allow choice and control of those opportunities, in order to enable equids to experience positive mental states such as comfort, pleasure, enjoyment and joy.

> *"A Good Life is described as one where an equid's overall experience of their life when taken across their lifetime is a substantially positive one."*
>
> EEWB 2023[4]

Currently, welfare scientists primarily use the Five Domains model for welfare assessment to determine the welfare state of an animal. The Five Domains approach to animal welfare assessment and monitoring was first proposed in 1994 and has been revised and updated regularly as the scientific evaluation of animal affective states

has improved. Initially, it was intended to direct attention to negative indicators, with more recent versions highlighting the importance of indicators of positive affect (emotion). It has been applied extensively in various contexts to evaluate welfare prospectively and retrospectively (Mellor et al., 2020).

The significance of this approach is that it provides a structured framework to consider systematically a broad range of internal and external factors that affect the equid's mental (affective) state. The model includes 4 physical/functional related areas: nutrition, physical environment, health, and behavioural interactions with the environment and other animals, including humans. The aim of each of the 4 domains is to draw attention to a wide range of aspects that influence the fifth domain – an individual animal's mental state – because they are relevant to how the equid experiences their life.

See Appendix 8 for a glossary of welfare terminology.

[3] Darwin C The expression of the Emotions in Man and Animals. First published 1872.

[4] Equine Ethics and Wellbeing Commission. Federation Equestre Internationale, 2023.

4.
Why does equid welfare matter?

KEY POINT: **There needs to be recognition of the important role that all equids play across Europe. That all equids are equally significant, and have intrinsic value, whatever the purpose for which they are bred or kept at that time. Therefore, there should be an equal legislative approach to ensure all equids across Europe have good welfare and a 'Good Life'.**

> *"The equine sector makes a significant contribution to the economies and cultures of many countries in Europe. The sector is worth more than €100 billion per annum to the EU, uses at least 2.6 million hectares of land and provides employment to at least 900,000 people.*
>
> *Removing the Blinkers: The Health and Welfare of European Equidae in 2015*

Article 13 of the Treaty on the Functioning of the EU stipulates that, as sentient beings, full regard should be paid to animals' welfare requirements. Equids matter not only because they are sentient beings, but also because they matter to European citizens. They have long been relied upon to fulfil a multitude of important roles - in transport, haulage, construction, leisure, therapy, sport, production and for companionship. The contribution of equids to human progress is considerable and has led to them being considered as a major influence in the civilisation and development of many European societies.

Even today, they still contribute to the wellbeing of people, communities and economies across Europe and elsewhere in the world (Brooke, 2015).

For equids, their diversity in terms of species, use and value across Europe has led to challenges in relation to the development of legislation concerning their welfare. Depending on where and how they are used, equids may be legally defined as farm animals, companion animals or even wild animals. Furthermore, a single equid can fit within several of these classifications within their lifetime. In addition, the legislative provisions regarding the keeping and care of equids differ across the different European countries. Only a few have adopted specific legislation on the protection of horses, ponies, donkeys and mules. In some European countries, guidelines for the care and management of equids have been drawn up either by competent authorities or industry stakeholders.

Whether classified as a farm, companion or wild animal, high welfare standards are central

to their management, care and Quality of Life (QoL), benefitting not only the individual equid, but also the industry or individual relying upon them. Without specific uniform legislation across European countries equid welfare is at risk, with their specific requirements being overlooked leading to them not being adequately protected.

There is a need for uniform legislation for equids and common EU guidelines to help enhance and safeguard the welfare of all equids throughout the Union.

Animal welfare is described as 'a complex, multi-faceted public policy issue, including important scientific, ethical, economic and political dimensions' (World Organisation for Animal Health, 2014) Although traditionally the scientific study of animal welfare involving measurements of an individual animal's QoL has been seen as separate from the ethics of animal use and treatment, there is increasing acceptance that the two are inter-connected.

Public attitudes towards animal welfare vary within and between countries, in part because of a wide range of factors including culture, religion, traditional practice and values. These different beliefs lead to varying concerns for animal welfare, which in turn impacts on developments in policy and legislation in relation to animal use and treatment.

4.1
SUSTAINABLE DEVELOPMENT GOALS

In 2015, the adoption of 17 Sustainable Development Goals (SDGs) by the United Nations created targets and indicators across 3 key areas: economic growth, social inclusion and environmental protection. The role of working equids is significant in 12 out of the 17 SDGs, including some of the most urgent: poverty reduction, gender equity, food security and education (ICWE International Coalition for Working Equids, n.d.).

> *"Only if concerns of animal health and animal welfare were observed could some of the SDGs be achieved."*
>
> WOAH's Director General (2018), World Federation for Animals, 2023

It has been suggested that animal health and welfare have been neglected in considerations regarding sustainable development - specifically in the SDGs concerning food, water, sustainable consumption and production, conservation, and climate change (Visseren-Hamakers, 2020) However, a mutually beneficial relationship between improving animal welfare and achieving SDGs has been demonstrated highlighting the importance of animal welfare when implementing these goals in practice (Keeling et al., 2019).

Equid welfare matters for achieving the SDG goals across Europe and measures to ensure high standards of equid welfare across Europe are required to facilitate this.

4.2
ONE WELFARE – THE LINK BETWEEN HUMAN AND EQUID WELFARE

The 'One Welfare' concept is a relatively new lens through which we can meaningfully integrate knowledge to more fully explore the connections between animal and human welfare problems.

It is suggested that using a 'One Welfare' approach (Pinillos et al., 2016) to consider the interconnection between good welfare for animals and positive societal benefits through promoting the direct and indirect links between animal welfare and human welfare (Waran, 2018) ensures better outcomes for all.

Working equids have been described as 'hidden helpers'- the invisible livelihood assets for many communities, supporting people's livelihoods in a wide range of sectors (Brooke, 2015). They contribute to the livelihoods of many communities all over the EU, supporting the sustainability of lives and livelihoods across a number of different urban and rural industries such as; tourism, public services (collecting waste, maintaining natural spaces within towns) and in agriculture, forestry and environmental management, where they can work on difficult terrains otherwise inaccessible by mechanical vehicles, do not damage crops or land, and allow minimum disturbance in important conservation areas.

The relationship between working equid welfare and human livelihoods is evident when one considers the economic contributions of working horses, donkeys and mules to household economies, and by extension national economies. This is well recognised and documented as vital in Low-and-Middle-Income countries, but this value and versatility can also be seen within Europe, representing a contribution to lives and livelihoods

that may otherwise be overlooked or perceived less favourably (Eurogroup for Animals et al., 2022).

It is increasingly clear that enhancing animal welfare positively influences the welfare of our own species (McBride & Baugh, 2022) and the relationship between owner and equid is an important part of the role that owner attitudes play in influencing equid welfare (Haddy et al., 2023).

4.3
EQUID WELFARE AND SOCIAL LICENCE

In recent years, societies' attitudes towards the use of equids for work, production and sport have changed alongside expectations in relation to protection of their welfare. There are a growing number of countries, where animal welfare is a mainstream issue with significant public concern driving the development of public and private regulations governing the way animals are treated, used and cared for.

In particular, public interest in the use of horses in competitive sport has grown in recent years. This interest is part of a much larger societal discussion about what constitutes a 'reasonable' human use of animals. Over the past few years, changing societal values and an increased knowledge and awareness of equid welfare needs has led to questions regarding the involvement of equids in sport, tourism and other public facing commercial animal activities, and the ethics of equestrianism generally.

The Federation Equestre Internationale (FEI) Equine Ethics and Wellbeing Commission identified that public and equestrian concern regarding the involvement of horses in sport, relates to 6 key areas (see Final report 2023, Equine Ethics and Wellbeing Commission. FEI, 2023) Recommendations for addressing these key areas and ensuring equid welfare is paramount where horses are used in sport and leisure are contained in the report. Similarly, the Thoroughbred Racing industry has produced guidance information to raise awareness amongst participants and third parties of appropriate standards of horse welfare in racing and breeding in areas that are vital to ensure the ongoing success of racing (International Federation of Horseracing Authorities, 2023).

4.4
EQUID WELFARE AND PRODUCT QUALITY

The attraction of horse meat for human consumption differs between cultures and goes against cultural norms in some countries where the acceptability of horse meat as a food source is non-existent (Gill, 2005), although it forms a significant part of the culinary traditions of many countries, particularly in Eurasia.

It has been suggested that where equids are farmed for meat, production could be environmentally friendlier than farming of cows for example, since equids produce significantly less Greenhouse gas (GHG) than large ruminants (Belaunzaran et al., 2015). In addition, the nutritional composition of horse meat is characterised by low levels of fat and cholesterol (about 20% less than beef), relatively high concentrations of n-3 fatty acids and heme iron indicating that its consumption may be beneficial for human health (Lorenzo et al., 2014).

However, where horse meat is intended for human consumption, the relationship between food safety and the welfare of the animals while being reared, how they are managed and transported are all also important considerations. Arguably the quality of the final product will be influenced by the animals' QoL as well as their quality of death. An extensive production system with more space and social interaction, was found to improve the quality of the meat produced, for example higher polyunsaturated/saturated (P/S) ratios and low intramuscular fat levels in the meat (Lorenzo et al., 2010)

By contrast, poor welfare conditions during handling and transport will not only lead to injury and stress and potentially even death (De Lama et al., 2021). The animal's poor experience will also likely lead to damage to the carcass, poor meat quality and loss of income.

A key consideration for the production industry is that a high standard of welfare will be beneficial for reputation, the quality of the final product and profitability.

4.5
EQUID WELFARE AND BIODIVERSITY

Contemporary conservation is a diverse enterprise, focusing on several goals including maximising biodiversity, protecting a particular species or assemblage, maintaining or restoring ecosystem health and services, or restoring a past ecological community (Gillson, 2016).

It is becoming more common for equids to be kept on nature reserves across Europe for conservation grazing purposes (Eurogroup for Animals & World Horse Welfare, 2021). As selective grazers, equids can be valuable in maintaining the biodiversity of wild areas, ensuring that natural ecological processes are maintained and controlling fire risks by removing undergrowth. Equid breeds native to the country, or known to be adapted to the particular conditions, are commonly used for conservation grazing, as they are ideally suited to living with minimal human intervention on uncultivated land. These animals are not wild however, as they are generally confined to a particular area (such as a nature reserve or national park), may receive some interventions such as supplementary feeding in times of hardship, or some routine or preventative treatments, and in some situations their breeding is controlled to avoid over-population. They are sometimes owned by the body that has placed them into the area for conservation purposes, whilst in other areas they may have been in situ for generations. This hands off or minimal contact approach can have significant welfare implications for the equids involved *(See Appendix 7 for recommendations regarding the management of these equids and protection of their welfare).*

Rewilding is an increasingly pursued approach to enhance biodiversity, which aims to restore healthy ecosystems by reintroducing animals, including equids, and creating wild and biodiverse spaces. Rewilded ecosystems can also help mitigate climate change by increasing carbon removal from the atmosphere and protect against climate change impacts by reducing soil erosion and flood risk, for example. Rewilding can also create socio-economic opportunities for local communities (e.g. through ecotourism), reduce the effects of and costs associated with environmental hazards (such as flooding), and improve human health and well-being by improving access to nature (International Union for Conservation of Nature, 2021).

4.6
EQUID WELFARE AND HUMAN SAFETY

As social creatures, equids can form close bonds with humans. Where equids are used for work or pleasure, a good relationship between human and equid is essential for ensuring the safety, welfare and sustainable success of the interaction. Human-equid interactions based upon promoting fear or pain are likely to create an unsafe situation for both equid and handler. When exposed to stressful situations equids trained or handled in a negative way are more likely to attempt to escape or defend themselves often with detrimental consequences for humans (McGreevy & McLean, 2009).

Prioritisation of equid welfare is therefore viewed as essential, not just as an ethical obligation, but also for maintaining a positive, safe and productive working relationship.

4.7
EQUIDS AND ONE HEALTH

One Health acknowledges the close links between animal and human health and their shared environment and seeks to address the problems in a holistic manner. The concept of One Health demands improved animal disease surveillance with the requirement for reliable methods and implementation of animal identification and traceability systems, and accurate recording of administration of drugs, which in turn would aid understanding of the demographics and monitor trends in population numbers.

Zoonoses, infectious diseases transmitted between animals and humans, account for a significant portion of all newly identified infectious diseases and many existing ones in humans (World Federation for Animals, 2023). They are a great public health concern, causing animal diseases and death and posing a severe threat to human health, and they can have severe economic consequences, including increased healthcare costs and disruptions to trade.

With their potential to cause global pandemics, such as COVID-19, it has become increasingly clear that we cannot isolate human health from the health of other species and the environment. Moreover, zoonotic diseases can spread to other animal populations, including threatened ones,

leading to the death of wildlife and further biodiversity loss, which can destabilise ecosystems.

One fundamental issue for effectively managing zoonotic risk, is the lack of available data regarding equids across Europe. For example, currently we don't know how many equids there are, where they are, and what they are used, or kept, for. In addition, there is no robust information regarding antimicrobial use in equids, although a recent study suggested that the use of high priority critical antimicrobials is still relatively common in equid practice in the UK and Europe (Wilson et al., 2023). Without systematic recording of this important information, we have no means for responsibly and effectively tracing or managing the use of antimicrobials across the equid population in Europe.

4.8
EQUID WELFARE, BIOSECURITY AND SURVEILLANCE

Equids may well be the most transported animals in Europe as a proportion of the overall population (Eurogroup for Animals & World Horse Welfare, 2021). The purposes of their journeys vary greatly – from high-value sports and racehorses being transported for competition, breeding and training, to lower value production animals moving between markets across Europe or to slaughter. In addition, thousands of animals will be moved short distances by their owners – to take part in low-level competition, for leisure activities, to move between working locations (such as in forestry extraction operations), to access training facilities or veterinary treatment, or to change where the animal is kept, meaning that their journeys do not appear on the official databases for movements in some countries.

However, movements of equids within countries, and especially across borders, increases the risk of spread of highly infectious diseases, increasing risks of zoonoses and emergence or re-emergence of transboundary disease and of compromise to food safety (increased by the challenges of traceability).

Introduction, spread and escalation of highly infectious diseases can cause huge economic damage to the entire sports and racing industries and also significantly compromise their welfare.

Long distance transportation of equids poses a significant risk to equid welfare as well as having detrimental climate impacts due to the increased carbon 'footprint'. For example, carbon emissions calculated for horses used in competition showed that transportation across Europe contributed more than any other aspect of their management to their total GHG emissions (Hausman, 2024).

The table below notes the numbers of movements into and between member states of the EU. They must be interpreted with caution, noting that they are only those movements which are officially recorded and do not include any illegal movements.

Table 1: Officially recorded movements of equids into and between EU Member States (Eurostat)

Year	Total number of imports to the EU	Total number of movements within the EU	Total number of movements into the EU or between countries
2019	32,125	55,692	87,817
2022	15,959	229,507	245,466
2023	16,659	444,311	460,970

NOTE: Data for 2020 and 2021 has been excluded due to reduction in movements as a result of the Covid-19 global pandemic and associated lockdowns.

In 2023 there were a total of 460,970 officially recorded movements of equids into and between EU member states alone.

There is little or no traceability, insufficient surveillance and no means of epidemiological studies, identifying disease, including new, emerging and zoonotic diseases, threats to the species and/or illegal activity.

To rectify this, data is needed to enable accurate reports on equid population numbers and the demographics, including the purpose for which the equid is kept.

An important first step to safeguard animals and humans is that all equids whatever the reason for which they are kept need to be recognised, identified and recorded in order to regulate and understand populations.

Methods of identification and data systems must also ensure that accurate data is added to the equid history, including veterinary treatments that may affect public health, along with the purpose for which the equid is kept and movements across those purposes.

Risk mitigation using robust equid identification methods

Identification of equids using specified systems is already a compulsory industry requirement for many horses involved in sport such as with thoroughbred racing. However, this is not a lifetime guarantee, and once an equid retires from being used for sporting purposes they may no longer be maintained on a register and so are often harder to trace without additional measures in place.

Current regulations in the EU require the use of a Unique Equine Life Number (UELN) and a single lifetime identification document and electronic identification is mandatory. The identification document will also contain information about the equid's food chain status. EU Member states are required to keep a computer database to record specific minimum information regarding equids and the exchange of electronic data between Member States is encouraged to facilitate the traceability of the equid animals and the controls on the integrity of the food chain.

However, the paper-based lifetime ID document is relatively easy to falsify and may not be kept up-to-date meaning that inaccurate information exists on electronic databases. In addition, enforcement is not uniform across the Member States and the document varies hugely depending on the issuing organisation, which hinders the enforceability even more. Premises where equids are habitually kept must also be recorded on a centralised system, however this does not always include premises where equids are temporarily kept. Certain movements must also be recorded by the operator; however, these are not recorded on a centralised database and are held by the operator.

Recommended best practice for enabling permanent electronic equid identification is the use of microchipping, and simultaneous registration. The microchip should be inserted by a veterinarian or trained equid handler to ensure a good aseptic and pain-free technique.

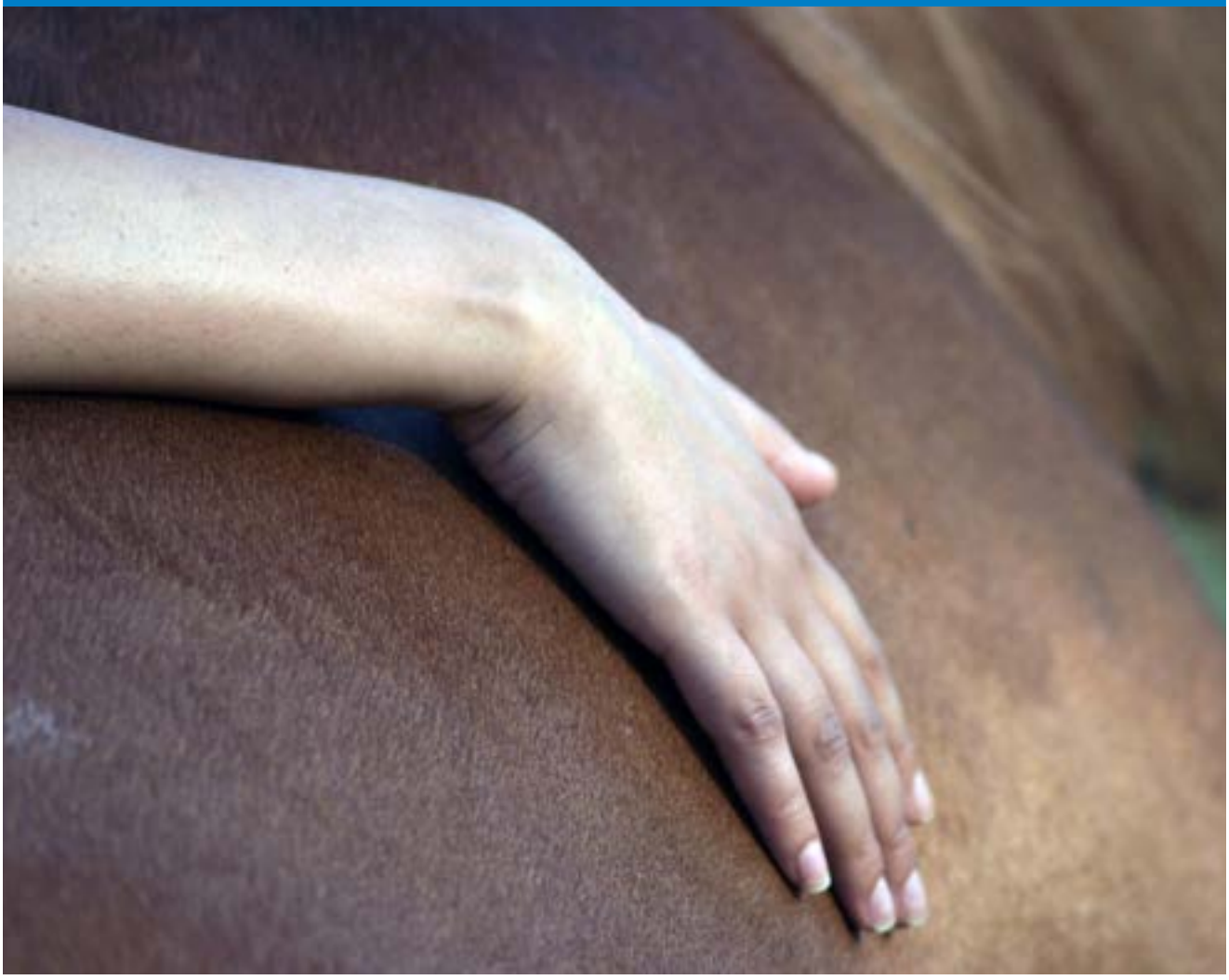
An equid identification and traceability register provides the opportunity for tracing equids in the event of a biosecurity event. Although limitations for some sectors, such as working equids or semi-feral equids, must be acknowledged, permanent identification can also be used as a method of tracking an equid when they have been sold or being transported, and can also be a way of proving ownership in the case of horse theft.

Effective methods of identification, along with a requirement for details of all equids to be held on a fully digitalised central database, is not only vital for encouraging responsible equid ownership but will also allow records of movements of horses around Europe to be held on a centralised system and to be interrogated in the event of a disease outbreak. This will help give a much clearer picture of the EU equid population, allow surveillance of the population, identify and mitigate any trends or threat of disease and be beneficial to equid welfare and the industries and stakeholders that rely upon them for work, income, sport and leisure

Effective traceability has numerous benefits including effective disease control, meaningful checks on food chain status and the ability to identify equids that are neglected, have strayed or been abandoned.

5.
Why do people keep equids?

KEY POINT: **There is a need for improved data through the development, dissemination and analysis of a survey of all equid-related sectors across European countries to improve understanding of the size and diverse nature of the European equid population, and in different industry sectors, with results publicly communicated.**



Equids play many different roles in society as they are perhaps one of the most versatile animals – from athletes to meat production, from pets to a source of transport or use in agriculture, forestry, tourism. This diversity may lead to severe problems when seeking legislative protection since equids do not fit neatly into modern legislation and policy making, and they can easily fall into gaps between laws drafted for companion animals and agricultural animals, often leading to welfare detriment.

They are kept across Europe for a variety of purposes, with different impacts and importance to animal, human and environmental health (One Health, One Welfare), the SDGs and the country's economy. The different roles they play involve different specific requirements to provide good welfare.

This section outlines some of the major risks and impacts that are specific to the primary or original purpose for which the equid is kept,

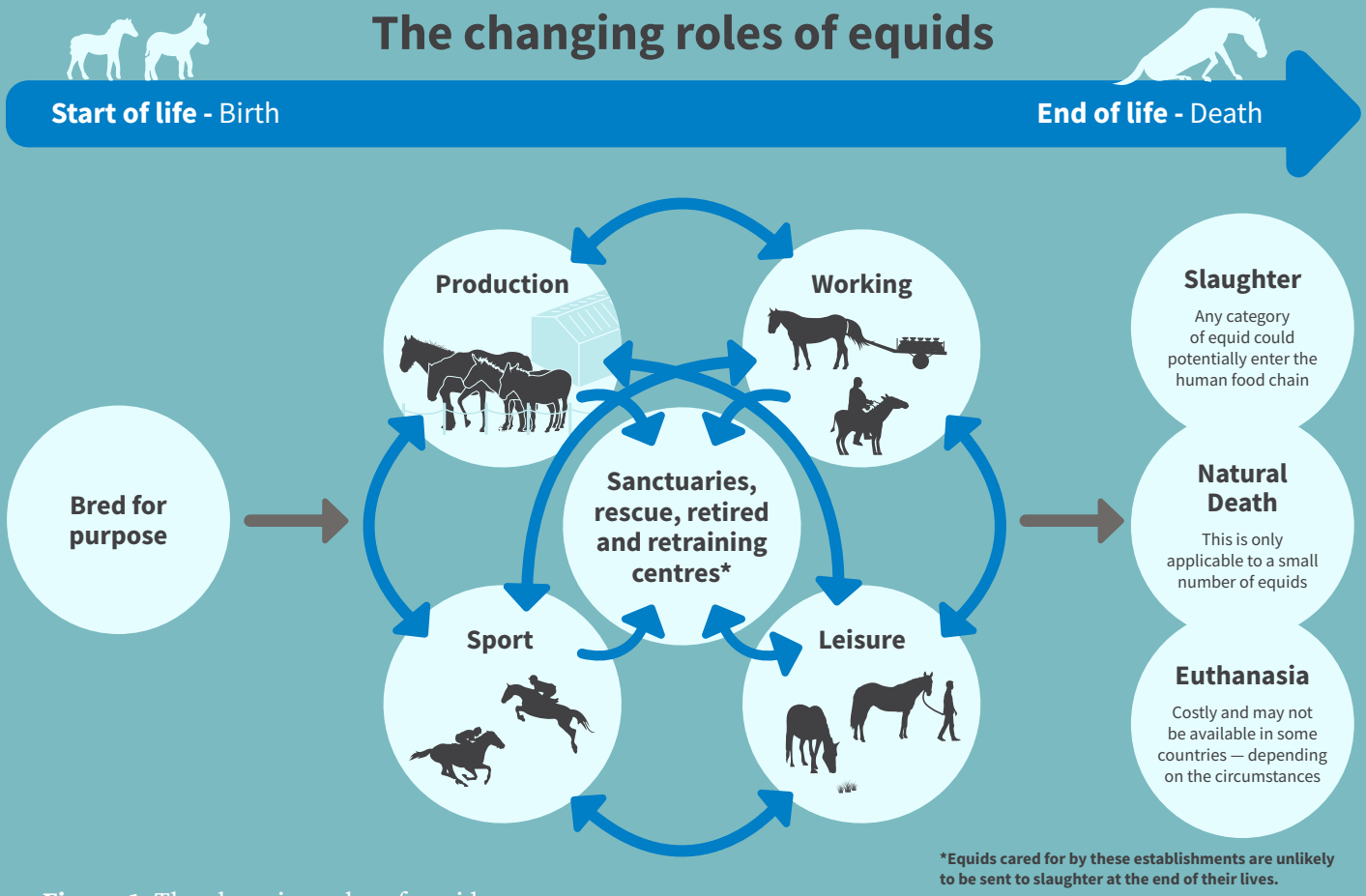


Figure 1: The changing roles of equids

as well as discussing the interconnections and interchangeability between the different sectors, providing a strong argument for inclusion of all equids in uniform legislation and regulation whatever the purpose for which they are kept.

Since identification and data collection for equids is currently not consistent across European countries, the interconnection between the different purposes for which equids are kept and constant flux between the different sectors and industries, means that there is a urgent need for regulation and enforcement of robust methods of identification for traceability related to management of disease surveillance, management of residues and safety for public health.

Purposes for which equids are kept across Europe can be broadly categorised into 4 representative groups, according to the main issues, conditions and requirements for providing good welfare and taking actions to ensure a Good Life for the equids concerned. These are:

PRODUCTION	All equids kept solely for the commercial production of food, pharmaceuticals, skin, cosmetics, other products or for other farming purposes such as breeding for the purpose of sale.
WORKING	All equids that provide physical work for the benefit of people, families and communities, whether providing a livelihood, opportunities for a better life for people or services for people and authorities.
SPORTS AND RACING	All equids kept for the primary purpose of performance or competition that may or may not have a commercial benefit.
LEISURE	All equids kept for recreational activities and the well-being of people, whether for direct commercial benefit or as companions in private homes

5.1
PRODUCTION

DEFINITION: an equid bred or kept for the production of food, pharmaceuticals, skin, cosmetics, other products or for other farming purposes such as breeding for the purpose of sale.

This includes owning or keeping of equids, extensively or intensively, for the commercial purpose of producing food and products including meat, milk, skin, pharmaceuticals and for breeding for the purpose of sale.

Specific impacts from this industry include:

EQUID WELFARE	Equids kept for the purpose of production are often kept in intensive units, large groups or groups that are unsuited to the expression of natural behaviours. Frequent regrouping according to stage of production is necessary for management but causes stress in these species. Stress caused by this can lead to ill health and reduced productivity and any replacement or regrouping may increase the risk of disease spread.
PUBLIC HEALTH	Introducing animals from sectors with no identification or traceability leads to risk from drug residues and disease which may be present in meat and by-products. Blanket use of antimicrobials may lead to resistance or to residues in products for human consumption or animal feed products.
ANIMAL HEALTH	Introducing new animals can lead to the introduction of disease, especially when they are stressed with a resulting suppressive effect on their immune systems. This is a particular risk if brought in from multiple sources, often without following adequate biosecurity and quarantine measures and basic routine care, and when no identification or traceability exists. Early signs of disease may easily be missed resulting in spread amongst the group before diagnosis and control measures can be put in place. Blanket use of anthelmintics (dewormers) may lead to resistance.
ENVIRONMENTAL HEALTH	Ecotoxicity and resistance as a result of blanket deworming for internal parasites and the use of antiparasitic products for external parasites. Disinfectants necessary for biosecurity may run off into the environment and may cause harm.
ECONOMIC HEALTH	Any cost incurred for controlling/eradicating any national disease outbreak and a potential loss of trade as a result of an outbreak.

A NOTE ON DONKEY FARMING

> *"Farming of donkeys is practised for the production of meat and milk and associated products such as cheese and cosmetics, but also for their skins and the production of the Chinese traditional medicine ejiao. Farming is not suited to a species in which it is acknowledged to be difficult to identify ill health and therefore presents a high risk of undetected infectious disease, especially where the herd is restocked from multiple sources, often with no identification or traceability."*
>
> The Donkey Sanctuary, 2022a

A NOTE ON THE PRODUCTION OF PHARMACEUTICALS, BIOLOGICALS AND THERAPEUTICS FOR USE IN HUMANS AND OTHER ANIMALS

> *"This involves the collection of blood, serum, or other substances from horses because of their large size. There are few international guidelines that provide recommendations for caring for horses kept for these purposes and blood is often collected from pregnant mares at levels and frequency over and above any guidelines for good welfare. Mares may suffer hypovolaemic shock, venous disease, anaemia, spontaneous abortions, fear and pain.*
>
> Federal Office of Consumer Protection and Food Safety, n.d.; Vilanova et al., 2021

5.2
WORKING

DEFINITION: An equid that is used directly or indirectly for agriculture and commercial activities, providing traction, transport and income generation, contributing to households' livelihoods and benefiting communities as a whole.

This includes owning or keeping equids for the purpose of work to support a family or community, or work in agriculture and forestry, waste management, sanitation and construction, the military, police, tourism, cultural and entertainment events.

Specific impacts from this industry include:

EQUID WELFARE	Animal welfare is often not recognised in an animal providing a commodity and considered more as a means of income or support and often to be found in areas of poverty or low resource. A lack of awareness of requirements for good welfare and lack of access to professional support is a contributing factor
PUBLIC HEALTH	Risks from zoonotic disease because these equids often live in close proximity to owners and households and may have no access to healthcare or diagnosis. The lack of identification, traceability and regulation in this population may result in drug residues in consumed products. Good welfare in working animals has been shown to have a positive effect on human wellbeing.
ANIMAL HEALTH	Disease may be present but unrecognised, and certainly untreated where time to seek professional help relates to time lost in working and loss of associated income.
ENVIRONMENTAL HEALTH	Blanket use of dewormers and antimicrobials in a population which is unregulated will threaten the environment in addition to the health implications of resulting resistance. Positive reduction in carbon footprint where working animals replace need for motorised vehicles or equipment.
ECONOMIC HEALTH	Working equids often have no identification, are not on government census and population is unrecognised and unrecorded. This results in a lack of traceability, lack of understanding of population demographics, surveillance and a likelihood of missed disease (zoonotic, new and emerging and highly infectious). Any outbreak of disease would affect the economy, both in cost of control but also in any resulting loss of trade or spread to the wider equid population such as equids kept for sports and leisure. There is also a reputational risk impacting on a country's tourism economy if associated with poor welfare standards and practices.

5.3
SPORTS AND RACING

DEFINITION: an equid kept for the primary purpose of performance or competition that may or may not have a commercial benefit, and that is competing at national or higher levels.

This includes those equids that may compete in racing (over jumps or on the flat), dressage, eventing, showjumping, showing, polo, carriage racing, endurance, and vaulting. These sports and activities are governed by an over-arching governing body that is responsible for setting standards, enforcing rules and investigating non-compliance.

Specific impacts from this industry include:

EQUID WELFARE	Equids are often transported over long journeys. In addition, they may be asked to perform at levels for which they are neither sufficiently mature or fit and with inadequate rest periods between performances. Inappropriate use of tack and equipment and training methods may lead to welfare issues.
PUBLIC HEALTH	There is a risk of injury to riders, handlers and grooms, risk of spread of infection at well attended events, but increased well-being for people attending, and participating in, events. A significant risk from residues of drugs used to facilitate performance in equids destined for the human food chain.
ANIMAL HEALTH	Significant transboundary movements carry a high risk of disease spread. Equids carry a high risk of injury and of compromise to their musculoskeletal system as a result of sustained athletic demand.
ENVIRONMENTAL HEALTH	A significant carbon footprint from travel to equestrian events. and intensive management practices. Reduced grazing practices have a detrimental effect on species diversity in grasslands
ECONOMIC HEALTH	A lucrative industry bringing economic benefit to the country's economy, but concerns regarding equid welfare have threatened equid sport's social licence to operate with potential economic impacts due to the dependence of many on the sports industry for work and income. There is also a high cost to trade and disease control if infectious agents are introduced by equids frequently travelling across borders.

5.4
LEISURE

DEFINITION: all equids kept for recreational activities and the well-being of people, whether for commercial benefit or not, and including equids kept for use in equid-assisted assisted activities or as companions in private homes.

This includes equids involved in leisure activities that may be used for riding or trekking, or in local competitions, races, religious festivals, and events. In addition to covering equids kept as non-ridden companions on private land, it also includes those kept for recreational purposes on public land. The latter are often tethered on grass or waste land and include the urban horse that exists in some parts of Europe.

Specific impacts from this industry include:

EQUID WELFARE	A lack of owner knowledge of husbandry, allied with an inability to afford professional healthcare, frequently causes poor welfare in this sector. An imbalance between the amount of nutritional energy provided and the animals' energy requirements is often observed in leisure equids, resulting in many overweight or obese animals.
PUBLIC HEALTH	Confinement, poor training and inexperienced handling can lead to more fearful and reactive horses which are more likely to cause accidents. Close contact with people will increase the risk of spread of zoonotic disease. However, there are also benefits to physical and mental health and wellbeing associated with human interactions with equids.
ANIMAL HEALTH	Healthcare may not be affordable across this sector resulting in reduced uptake of vaccination and prompt diagnosis and therefore a potential risk of disease introduction and spread.
ENVIRONMENTAL HEALTH	Over grazed fields, compacted soil and mono-cultured grass may be a result of the large population of leisure equids. Overuse of anthelmintics and management of manure may compromise the environment, particularly if muck heaps are located near to water sources, polluting rivers and waterways.
ECONOMIC HEALTH	Consequences to associated businesses such as feed merchants, saddlery stores, livery yards and healthcare services if this sector is compromised.

5.5
OTHER GROUPS OF EQUIDS

There is a need to consider groups that do not fit within these criteria but are important for the protection of all equids and for surveillance across all equids:

Feral or Semi feral populations

DEFINITION: Domesticated horses that live in natural conditions relatively unmanaged by humans.

These include all free-living equids that roam over extensive grassland areas and are largely unregulated. Populations are being introduced in areas across Europe in order to improve and maintain species diversity in grasslands and rural biotopes. These equids live with risks to their existence from climate change and from humans as they develop their environments, increase numbers of roads and vehicles and exterminate herds due to the perception that they are a 'pest'.

This population may also include working equids who have been abandoned where their role has changed and/or increased motorisation has made their role unnecessary.

Specific impacts from this industry include:

EQUID WELFARE	The need for good welfare may not be recognised in equids perceived to be living as 'wild' animals. However, end-of-life decisions and management is essential where there is suffering, such as, a long-term deficit in supply of food and water due to events linked to climate change or painful foot health in the event of floods. A means of gathering these equids and restraint for interventions are essential and regular inspections for good welfare necessary.
PUBLIC HEALTH	There are increased risks of road accidents, potential harm to people using the areas for leisure activities, potential harm of disease spread or contamination of environment that people use for leisure.
ANIMAL HEALTH	Castration may be necessary as a means of population management or in some areas, chemical contraception has been used. Where equids are castrated, techniques must be humane, carried out by animal health professionals and include the use of appropriate anaesthesia and pain relief.
ENVIRONMENTAL HEALTH	The presence of herds of semi feral equids may be beneficial to grass management and the ecological balance of the environment in which they live. However, over-population may cause problems in depletion of grass and fodder for other animals or increased 'nuisance' for people living in the same area or travelling through that area.
ECONOMIC HEALTH	There are possible benefits for tourism, or a threat if equids are poorly managed and the area is over-populated.

Equids that are retired, rescued or being retrained

DEFINITION: Equids that have been rescued, abandoned or surrendered by their owners on welfare grounds, presenting with health, age & behavioural issues, that require rehabilitation before moving onto a new or similar purpose for which they were bred.

This includes the centres or sanctuaries in which equids are kept for the purposes of rescue, rehabilitation, retirement or retraining for a different purpose. These centres or sanctuaries carry specific risks and impacts and are often unlicensed or unregulated. There is a need for knowledge and understanding of the extensive behavioural and clinical interventions needed for these equids.

Specific impacts from this industry include:

EQUID WELFARE	Equids in retirement, rescue, rehabilitation, and retraining facilities need specialist knowledge, understanding, and care. If this is lacking, this can cause ill health and poor welfare. Retraining requires an understanding of species-specific behaviour and positive reinforcement techniques. These centres may easily become overstocked, and this can result in reduced standards of care.
PUBLIC HEALTH	Equids may be sent for slaughter with medicinal products ending up in the human food chain and an associated risk from drug residues.
ANIMAL HEALTH	Provision of nutrition requires special consideration, as does the environment in which they are kept, with care for poor dentition, sight or locomotion and ability to access and digest foods.
ENVIRONMENTAL HEALTH	Possible local risks if grass management is poor or blanket medicinal treatment is practised.
ECONOMIC HEALTH	Unlikely to have an effect, although these organisations will often help with abandoned equids.

6.
How to ensure good welfare for equids

KEY POINT: **There needs to be a focus on positive welfare with requirements for equid sectors to demonstrate minimum welfare standards as outlined in this paper, and support where required to attain best practice standards of welfare, to enable equids to live a 'Good Life'.**

Living a good Quality of Life (a 'Good Life') results when animals have more positive than negative experiences in their lives.

A 'Good Life' – is arguably achieved when an animal experiences positive animal welfare. This involves more than just minimising negative life experiences that lead to negative emotional states such as stress and fear but requires also that the animal experiences positive emotions similar to contentment, joy, pleasure and happiness as experienced by people.

The overarching aim is to enable equids to live a Good Life regardless of their life context. Achieving this will rely upon consideration of the nature of the living and working environment they experience, the resources provided and the interactions they have with humans.

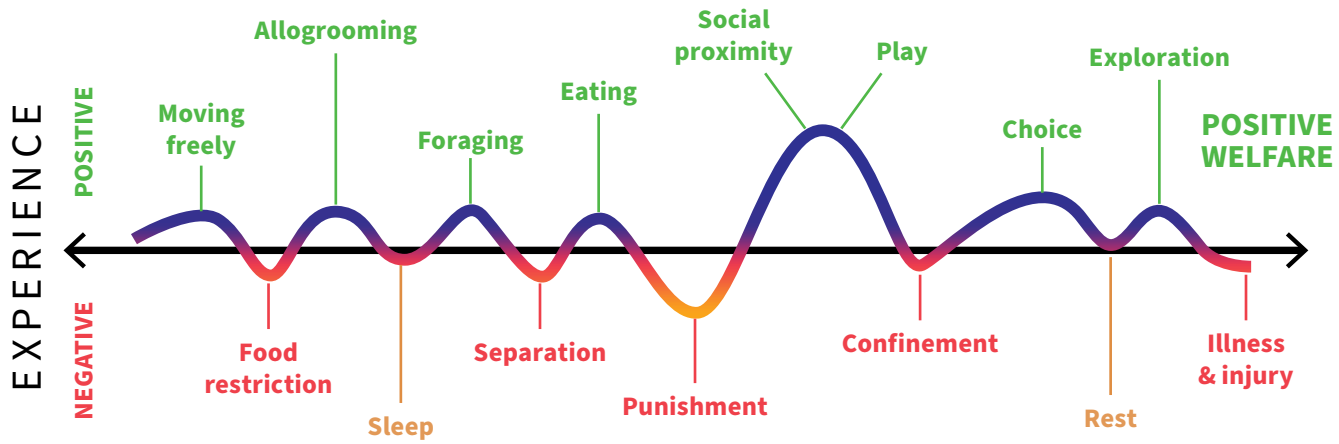
This section of the White Paper will refer to practices and resources required for good welfare in a general sense. Specific factors relevant to the purpose for which the equid is kept will be covered in the later section along with positive enhancement opportunities to ensure that equids live a 'Good Life'.

The Five Domains Model was introduced in Section 3 (What is Good Welfare for Equids). This model has a significant focus on subjective experiences, also known as affects, which collectively contribute to an animal's overall welfare state.

In the context of animal welfare, the noun 'affect' refers to 'feeling' or 'emotion', and to its behavioural expression.

In the Five Domains model, the internal states and external circumstances of animals are evaluated systematically by referring to each of the first 4 domains of the Model, designated "Nutrition", "Physical environment", "Health" and "Behavioural interactions". Affects, which are considered carefully to be generated by factors within each of these domains, are accumulated into the fifth domain, which is designated "Mental state".

Figure 2: The balance of experiences related to the emotional state of equids modified from the Affective states (ZAA) (Zoo and Aquarium Association Australasia, n.d.)



6.1
WHAT ARE THE MEASURABLES TO ASSESS AND REGULATE FOR GOOD WELFARE?

For the purposes of the White paper, the Five Domains will be considered as Five Provisions alongside the actions necessary to provide for them. We will consider each of the **Five Provisions** individually to demonstrate how these provide the resources and experiences needed to achieve a 'Good Life' for Equids (Mellor, 2016).

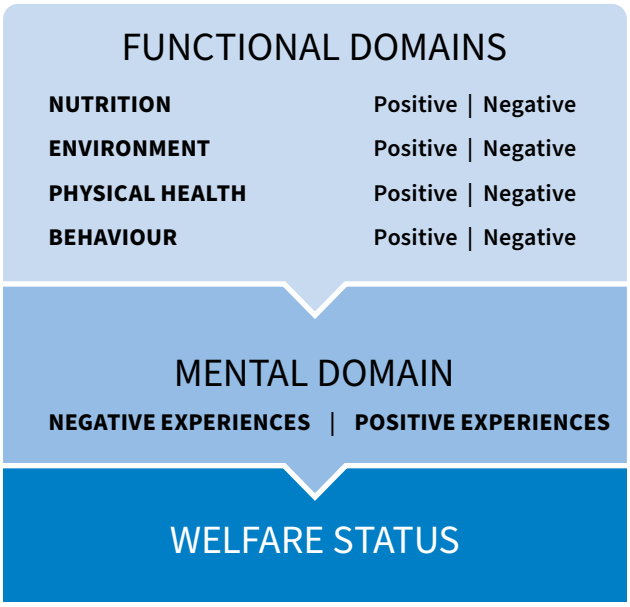
Applying the Five Domains Model relies on recognising the unique and evolved sensory abilities of the species that is being assessed. Decisions about the best way to manage and optimise equid welfare can be made by assessing the impact of an action or practice on each of the 'five provisions' considering the positive as well as the negative impacts.

Animal welfare science has identified a large number of objective measures that can be used to determine the welfare state of an animal. Indirect assessment of affective state is via animal and resource-based indicators known to be associated with positive, negative or neutral experiences. These may include measurement of physical, behavioural, physiological, immunological, production and/or performance parameters dependent upon the circumstances and requirements.

Despite progress in animal welfare assessment there is no single measure that can be used by itself to assess an animal's welfare status. Animal-based indicators, or outcome measures, are generally considered as more indicative of animal experience than input measures, or resource-based indicators and have become the preferred method of assessing welfare. However, whilst the reliability and practical application of some animal-based indicators have been reasonably well established; there are others such as some behavioural indicators that still need to be assessed. In these situations, resource-based indicators (e.g. space allowance, availability of water) may prove more practically effective as a reliable guide. It is suggested that multiple measures, including both animal-based and resource/management-based, provide a more holistic assessment of an animal's welfare, if considered alongside the context of the situation.

Using a battery of measures for assessing welfare in a holistic manner provides a more accurate picture of the animal's welfare state, and their Quality of Life at different time points.

Figure 3: The Five domains and how they relate to Quality of Life. Adapted from The Five Domains (ZAA) (Zoo and Aquarium Association Australasia, n.d.)



Achieving **Best Practice** standards enable equids to live a good quality of life. This requires assessment of all of the provisions using evidence-based welfare indicators to ensure the balance of negative and positive experiences is in favour of positive welfare outcomes. This goes beyond the minimum standards or requirements an animal has for ensuring its functional needs.

Minimum standards of welfare that will provide the equid with 'A Life worth living' include elements which promote some positive experiences and will provide adequate welfare.

However, providing best practice in addition to the minimum standards will provide the equid with a 'Good Life'.

> **Whether equids are kept for production, work, sport or leisure, the aim should be to ensure that they have a 'Good Life', being able to resolve, in a timely manner, any negative experiences that may arise, as well as benefit from a wide range of positive, rewarding experiences**

6.2
USING A FIVE PROVISIONS APPROACH

Provisions provide practical advice on the minimisation of negative experiences and states and more recently the recognition and promotion of positive experience or states. Aligning animal welfare aims with the actions to provide for them (Provisions), supports those responsible for animal care to be able to minimise negative subjective experiences and promote positive experiences. Provisions describe practical measures that provide for an animal's basic (minimum) needs for water, food, shelter and disease reduction as well as providing information regarding the range of opportunities animals need to experience positive subjective states such as comfort, pleasure, interest, and a sense of control *(see table below)*.

Table 2: Aligning animal welfare aims with the actions to provide for the five provisions, whilst promoting positive experiences (Adapted from Mellor 2016) (Mellor, 2016)

Provisions	Animal Welfare Aims
❶ **Good nutrition:** Provide ready access to fresh water and a diet to maintain full health and vigour	Minimise thirst and hunger and enable eating to be a pleasurable experience
❷ **Good environment:** Provide shade/shelter or suitable housing, good air quality and comfortable resting areas	Minimise discomfort and exposure and promote thermal, physical and other comforts
❸ **Good health:** Prevent or rapidly diagnose and treat disease and injury, and foster good muscle tone, posture and cardiorespiratory function	Minimise pain, fear and other aversive experiences and promote the pleasures of robustness, vigour, and well co-ordinated physical activity
❹ **Positive behavioural interactions:** Provide sufficient space, safe facilities, company and appropriately varied conditions	Minimise threats and unpleasant restrictions on behaviour and promote engagement in rewarding social activities and positive human interactions
❺ **Positive mental experiences:** Provide safe, species-appropriate opportunities to have pleasurable experiences	Promote various forms of comfort, pleasure, interest, and a sense of control

Example of Assessment of Equid Quality of Life (QoL) using the Five Provisions

This example of a horse kept for leisure purposes demonstrates the need for a holistic QoL assessment using multiple indicators, both resource-based and animal-based, within a horse's individual life context.

Leisure or companion horses are arguably most likely to be able to live a Good Life since they are generally not used for work purposes or relied upon for income, they aren't required to perform at a high level for sport, aren't transported long distances and are usually valued highly by their owners regardless of their monetary value. Leisure horses can usually be managed more extensively than those used for other purposes, can be kept in social groups, can be forage fed due to their lower energy requirements and may therefore live a more natural lifestyle.

Although there are many leisure horses that will experience best practice care and management and will have a good QoL, there are a large number of horses, ponies, donkeys and mules kept as leisure or companion animals in Europe and it would be incorrect to assume that all individuals live a good life, or even 'one worth living'. Animal welfare agencies across Europe report a range of welfare concerns associated with the leisure horse including end of life decision making. In addition, it's difficult to generalise regarding the welfare issues they may face since their management and living environments will vary considerably across Europe depending upon the climate, what they are used for, the environment and culture within which they are kept in and the level of knowledge their owner has regarding their functional and behavioural needs.

Lack of education regarding the dietary needs of horses in relation to the environment and work levels, can lead to both under and over feeding with associated health consequences including obesity and laminitis. There are many leisure horse owners who keep their animals at a commercial premises where there is limited turn-out, unpredictable feeding regimes due to sharing space with other horse owners with different management schedules and lack of social opportunities with horses being maintained on their own – or in unstable social situations with horses being removed and returned in line with their owner's requirements.

The following Case Example shows that it is possible to provide a 'Good Life' for an equid.

CASE EXAMPLE TO ASSESS EQUID WELFARE HOLISTICALLY

A GOOD LIFE

These two horses are used for leisure riding and live out all year around at pasture with plenty of good grazing, and free access to other familiar horses. They appear to live a Good Life.

Assessing their welfare:

They are mainly forage fed with the correct level of nutrition for a horse used for light exercise (low level riding four times a week) and living out in a large paddock with the opportunity to exercise freely and graze throughout the day.

They live with other familiar conspecifics, there is evidence of positive horse to horse social interactions and space for animals to move freely. The horses experience positive interactions with people, and actively seek contact with their familiar handler.

Although living outside, the climate is not extreme and there is a purpose-built shelter available that the horses can access when they choose.

Their health is good, and they have access to professional healthcare on a regular basis, good foot care and evidence of good husbandry by a knowledgeable owner.

They show behaviours that are indicative of experiencing positive emotions such as pleasure and there is no evidence of negative experiences leading to fear, pain or discomfort.

> **Looking more holistically at the quality of life experienced by these leisure horses is important and, in this case, taking into account all of the Provisions, it is likely that these horses are living a Good Life.**

GOOD NUTRITION

General Information

Good nutrition is not only important for an equid's physical health, but it also plays a vital role in fulfilling their behavioural needs and protecting their mental state. Equids evolved to eat a variety of forages (which contain plant cell walls (fibre) essential for the hind gut microbiome) to meet their nutritional needs. They have large hind guts that contain the bacteria which ferment fibre as their main energy source and thus their stomachs are small. Equids mechanically break their fibre into small pieces by chewing (part of their natural eating behaviour) before swallowing, eating little and often and consuming their daily fibre intake over 16-20 hours. Fibre should be the foundation of all equids' diets so that their physiological need to chew and behavioural needs to graze and/or browse are met (Harris et al., 2017).

A number of factors should be taken into account when considering the amount and type of food and water that any equid requires for good health and welfare, including its physiological state, health status (including dental health and any locomotor or sight issues that will reduce ability to gain access to food), the size and age of the equid, the management system being used, the climate and the amount of work an equid is required to perform.

It is essential to note the differences between equid species in their nutritional needs.

Forage should be the foundation of all equids' diets and the rest of the ration will be put together to balance any nutrient deficiencies in the forage. Forage can usually provide all the energy (calories) needed by equids in light or no work ; however they will be deficient in vitamins and minerals if grass fed and in protein, vitamins and minerals if fed preserved forages.

See Appendix 1 for the requirements for maintenance levels of nutrition (Martin-Rosset, 2018b; National Research Council (U.S.). Committee on Nutrient Requirements of Horses., 2007).

Equids in moderate-to-heavy work will need additional energy, protein, vitamins and minerals and this is usually provided by grains or manufactured feed.

DONKEYS: It's important to recognise the difference between the equid species in their nutritional requirements and tolerances. Donkeys have lower energy and protein requirements per kg body weight than horses and are more efficient at digesting fibrous, poor nutritional quality plant material. Inclusion of grain-based, nutrient rich feeds in the diet can cause ill health, laminitis, obesity and gastric ulceration.

The forage: concentrate ratio for the diet of a horse will vary according to the amount of energy required. Leisure horses will obtain between 90-99% of their energy from forages; performance horses should always be provided with a minimum of 50% of their dry matter intake (1.25% of body weight daily) as forage.

Food requirements should be adjusted for growth, pregnancy, lactation, climate and workload of the equid.

Although the majority of equids have multiple changes to their diets from grass to preserved forages and back again in 24hrs, food that is digested in the small intestine and stomach should be introduced gradually and progressively to the diet over a minimum of 14 days. Performance horses that need larger intakes of starch take up to 1 month to adapt to starch digestion and if a large starch ration is needed, this should be fed as small starch meals of 1g starch/kg body weight/meal to ensure digestion in the small intestine. Contaminated, mouldy or stale feed or forage should not be fed.

Feeding levels are best determined by monitoring the body condition score (BCS) of each equid species *(see Appendix 5 for the tools),* taking into account the difference in anatomy between the species and use of the appropriate body score system.

DONKEYS: Hyperlipaemia is a life-threatening condition and is a common and serious result of an incorrect diet, or inappetence, where the energy demand is not provided. A different body condition scoring technique and tool must be used to that used for a horse. *See Appendix 5 for the tools.*

MULES: Body condition scoring must account for the different anatomy; they lay down fat in similar regions to donkeys so the donkey BCS tool can be used. The rump resembles that of a horse and the neck and lateral and dorsal thorax that of a donkey and the tool should be applied accordingly.

CASE EXAMPLE TO ASSESS EQUID WELFARE HOLISTICALLY

NUTRITION

These working horses are kept for use in the tourist industry, mainly transporting tourists in carriages. They work long days with few rest periods and are tethered on any available ground during rest periods and overnight.

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An initial assessment of the welfare of these horses based on food and water provision, might lead to the assumption that welfare is adequate.

However: The forage and the water are out of reach of the tethered horses. The bucket of water may even be dry. The ground within the reach of the equids has no vegetation for browsing.

Body condition is poor.

The site and reach of the tether does not allow for all-day shade or shelter. One horse is stood in direct sunlight and is likely to be at risk of suffering from heat exhaustion and being irritated by insect activity.

Whilst the two horses have sight of each other, they cannot have physical contact due to the length of their tethers, and as such this is likely to cause frustration and stress to both.

Finally, neither equid has any opportunity to exercise their choice, either for socialising, opportunities for food or browsing or for access to shade or shelter.

Looking at the holistic picture and multiple indicators, including animal-based indicators, demonstrates the negative experiences caused as a result of the lack of choice resulting from use of the tether and the conditions in which they are kept.

These horses were not having a 'Good Life', or even a 'Life worth living' with minimum standards in place.

The health of the equid and resulting ability to access and digest food and water are important factors for consideration. Equids that have poor sight or locomotor issues may not be able to access food and water readily and those with dental disease may not be able to break down the fibre and utilise the nutritional content. They will also have a higher risk of suffering from other conditions such as oesophageal obstruction and impaction colic.

The faeces is a good indicator of digestive health and also dental health. For example, long fibre length can be a sign of dental disease and a reduced ability to chew, and the absence of faeces can indicate the presence of impaction colic.

Overfeeding, or inappropriate feeding is a significant problem for the welfare of equids, with obesity being a major welfare issue across Europe. This can put equids at risk of developing other conditions such as metabolic diseases or laminitis.

Overfeeding is just as relevant to animal welfare as underfeeding/malnutrition

Alongside appropriate feeding, the provision of an adequate supply of clean water is critical for maintaining health and welfare. Water needs for individual animals vary widely, and there will be seasonal variation when up to 90% of their water needs may be provided by grazing. Water sources need to be checked to ensure that they are clean, adequate and easily accessible. If clean water needs are not met, both animal health and welfare will deteriorate.

The provision of adequate quantities of food and water is not enough to ensure good nutrition, there are several other elements that need to be considered:

- An inadequate diet may lead to a depressed water intake (Pritchard et al., 2006).
- Consideration must be given to the space, access, and frequency of provisions of food and water, dependant on the environment of the equid and the presence of conspecifics (competition for resources)
- Feed must be harvested and stored correctly, ensuring the nutritional value is preserved and that it is not exposed to contaminants. Both feed and water must be from safe sources with no toxins, chemicals or infectious agents.
- The equid will feel negative emotions associated with hunger and the related discomfort.
- Scavenging, as a result of hunger, may lead to ingestion of rubbish, plastics and toxic plants which may cause health issues such as impaction leading to colic and organ failure.

GOOD PRACTICE GUIDELINES:

FOOD

Equids need a forage-based diet with frequent and adequate access to palatable, safe feed that meets their physiological, behavioural and productivity requirements. If equids are not able to access the feed they require, then malnutrition will occur.

Good nutrition provides for:

- maintenance level requirements of energy, protein, vitamins and minerals
- the energy demands placed on the animal by workload, production, reproduction, growth and environmental temperatures
- allowance for natural behaviours by grazing and browsing, which includes exercise socialisation and 'trickle' (regular small amounts over time) feeding

Good nutrition should:

- provide adequate levels of energy, protein, minerals and vitamins and be adapted to the animal's needs
- be easily accessed and available at frequent intervals throughout the day to ensure digestive health and wellbeing; preferably available for a total of 14 – 20 hours a day, but as a minimum an equid should be no longer than 4 hours without access to forage
- include a high proportion of fibre
- be varied; preferably including grazing and/or browsing
- be palatable and free of contaminants
- be monitored regularly by means of body condition scoring

The minimum requirements for the diet can be found at Appendix 1.

Dietary requirements should be adjusted according to temperature, productivity (including pregnancy and lactation), stage of life and diet.

Body Condition Scoring

Accurate Body Condition Scoring (BCS) is a hands-on process for feeling the amount of muscle and fat that are covering the equids' bones. Careful assessment of all areas should be made and then combined to give an overall score.

The use of body condition scoring is good practice for assessing the nutritional status of the equid, their health and any factors affecting digestion and uptake of nutrients, and any behavioural factors affecting their accessibility to a balanced diet. Regular assessment of the BCS of an equid will show trends and also support management of the correct diet for the individual equid.

BCS can vary over time according to seasonal availability of grazing and nutrient content of forage. Factors such as these should be taken into consideration and trends over a period of time can provide a more valuable measurement.

There are several systems available with user-friendly tools for measurement. Any can be used effectively, but of utmost importance is that whichever system is used it is used consistently and appropriately.

The range of scores providing a minimum standard of welfare for equids vary according to the scale used.

Scales can be found as:

- 1-9 where a range of 4-6 would be the minimum standard
- 0-5 where a range of 2-3.5 would be the minimum standard
- 1-5 where a range of 2 -4 would be the minimum standard

See Appendix 5 for 3 of the commonly used tools, noting that donkeys must be assessed using a specific tool; systems designed for horses and ponies are not appropriate.

GOOD PRACTICE GUIDELINES:

WATER

The most important nutrient for the welfare of equids is water. Equids need regular and adequate access to palatable, safe water that meets their physiological and productivity requirements, which may vary. If equids are not able to access the water they require, then dehydration will occur. (Pritchard et al., 2006)

If equids are able to access water, but that water is unpalatable or unsafe, they may still suffer dehydration or may become unwell. They will suffer the negative emotions and discomfort associated with thirst. An inadequate supply of water can result in decreased food consumption in horses. (Pritchard et al., 2006)

DONKEYS: **signs of dehydration are only seen when the donkey is severely dehydrated. They cope better than horses with thirst and rapid rehydration. Donkeys will not decrease their food consumption if their access to water is restricted, this will put them at risk of conditions such as impaction colic.**

Water provides:

- sufficient hydration according to external temperatures, productivity and performance, stage of life and diet
- sufficient hydration to encourage correct food intake

Water must be:

- an adequate supply
- easily and frequently accessed
- palatable
- safe

The minimum requirements for water intake can be found at Appendix 1.

Water requirements should be adjusted according to temperature, work, productivity (including pregnancy and lactation), stage of life and diet.

Good Nutrition for Foals

Foals should feed within 2 – 4 hours of life for maximum absorption of colostrum and must receive colostrum during their first 12 hours of life. From the 3rd week of life every foal must have access to water in sufficient quantity and quality at all times (Crowell-Davis et al., 1985)

Good Weaning practices

There are a wide variety of weaning methods utilised, however, to ensure the welfare of the young animal, weaning must be gradual and must not start before the foal is 6 months of age. Best practice is for gradual group weaning from 7 months of age onwards.

Current scientific findings suggest that most health and behaviour problems related to weaning are due to social separation from the dam and not so much due to weaning from milk. Issues resulting from early weaning include a reduction in body condition and daily weight gain and aggressive behaviour and stereotypies such as crib biting and can be reduced with gradual weaning (Henry et al., 2020). A study looking at weaning practices found that natural/spontaneous weaning occurred at around 9/10 months and induced no stress (Henry et al., 2020).

Weaning is a period of psychological and nutritional stress for the foal and this can have an impact on food intake and subsequent growth.

Social separation from the dam should be gradual. Weaning a foal into a group of horses with calm adult horses lowers the risk of abnormal aggressive behaviour (Erber et al., 2012)

Equid Welfare Assessment

Minimum Standard and Best Practice Indicators – Nutrition

In addition to assessing the provision of Good Nutrition and aspiring to a 'Good Life' for Equids, both Resource-based and Animal-based indicators should be used to aid assessment of the provision of good nutrition.

Example Minimum Standard Indicators include:

Resource-based indicators

- Access to a nutritious diet, with a high fibre content
- Access to sufficient water to maintain good health
- Available forage and type and amount of supplementary feed is appropriate to the age, physiological state, level of work and breed of the equid
- Overweight or underweight animals are provided with appropriate diet and care
- Sufficient space and opportunity to feed freely and access required food and water
- Quality and palatability of food and water is monitored and does not contain contaminants at a level harmful to the health of equids
- Source of feed and water provides sufficient quantities at frequent intervals and is monitored and maintained regularly
- Grazing or browsing areas maintained free of plants that are poisonous to equids

Animal-based indicators

- Equids show no signs of poor health in relation to diet and show no signs of dehydration
- Equids show no aggression or injuries as a result of competition in relation to access to food or water
- Optimum equid BCS is maintained between 4-6 (for a body condition scoring system of 1-9), between 2 – 3.5 (for a body scoring system of 0-5) or between 2-4 (for a body condition scoring system of 1-5). See Appendix 5 for body condition scoring tools.
- Faeces shows moist consistency and short fibre length
- No abnormal behaviours performed, for example stereotypical behaviour

Evidence for providing the basic nutritional requirements (Minimum Standard Indicators) is not enough to ensure good welfare on its own, other elements and factors must also be considered and measured to give an overall assessment.

Additional indicators of Best practice provide evidence of an animal experiencing a 'Good Life'.

Example Best Practice Indicators to provide a 'Good Life'

Resource-based indicators

- Space available to feed and drink comfortably in social situations
- Access to a variety of forages and feeding environments allowing choice

Animal-based indicators

- Time available for foraging and chewing, with choice and variety available
- Equids exhibit positive behaviours associated with pleasure during feeding
- Equids show gastrointestinal comfort
- Forage is fed at ground level and equids show no signs of respiratory distress or ocular injuries

Monitoring nutrition by means of body condition scoring and signs of contentment, fullness and absence of thirst and hunger is essential.

Actions to achieve best practice

Refer Figure 4 below for examples of positive enhancement aims and actions to give the equid a life worth living or even a 'Good Life'.

Figure 4: Examples of actions to address minimum standards and to achieve best practice to provide a 'Good Life' in relation to Nutrition

WHERE WE SHOULD BE

INDICATORS DESCRIBING A NEGATIVE SITUATION (A life not worth living)	**INDICATORS OF MINIMUM STANDARDS** (A life worth living)	**INDICATORS OF BEST PRACTICE** (A Good Life)
+ Actions to improve welfare	+ Enhancements to provide a Good Life	
Adequate amounts of food and water		
• Inadequate supply of feed and water. • Insufficient time for chewing and drinking. • Signs of hunger, thirst, malnourished or dehydrated. • Agitated, stereotypical behaviour.	• Fresh water and good nutritious diet provided. • Faeces shows moist consistency and short fibre length. • Equid shows no signs of poor health related to hunger or thirst.	• Positive behaviours associated with pleasure during feeding. • Gastrointestinal comfort. • Enjoyment of taste and texture. • Bright, alert and interested in surroundings.
• Provision of sufficient, fresh food and water. • A high proportion of fibre included in the diet. • Any concentrates in diet always fed after roughage. • Time given for feeding and drinking.	• Variety of food provided in diet. • Space and opportunity for browsing and grazing. • Any supplementary concentrates given in small amounts throughout the day.	
Appropriate diet		
• Diet and water insufficient, or too much, for individual need, workload or for climate. • BCS indicates thin/poor or fat/obese. • Weak, exhausted, dehydrated.	• Access to feed and water suitable to individual need. • Optimum and stable BCS.	• Faeces show good fibre length. • Alert, enthusiastic, engages in play and is energetic.
• Diet adapted for individual need. • Weaning no earlier than 6 months of age. • Consideration of equids in poor health, over and under weight and with poor dental health. • Regular monitoring of BCS.	• Forage fed at ground level. • Equids requiring special consideration given additional space and access for dietary needs.	
Accessible and regular		
• Unsuitable containers, size and height for access to food & water. • Infrequent access to food and water, signs of water intoxication. • Increased aggression, stress and stereotypical behaviours around the feed or water sources. • High levels of injuries.	• Space and easy access to food and water for all equids in group. • No aggressive behaviour or injuries associated with feeding. • BCS consistent across group. • No abnormal behaviours.	• Time available for foraging and chewing. • Equids have space to feed comfortably in social situations. • Equids can demonstrate choice of food type and place to feed.
• No longer than 4 hours spent with no easy and non-competitive access provided to food and water. • Suitable containers at a height and space compatible with species and breed. • Source of food and water monitored and maintained for access, particularly the elderly and those with poor locomotion or sight.	• Regular inspections for signs of competition for food of water, unsuitable containers or fear of using troughs or other receptacles.	
Safe and palatable		
• Contaminated, poor quality or unpalatable food and water. • Clinical signs of disease, dehydration or respiratory distress. • Poor digestive health (colic).	• Access to good quality food and water that is palatable. • No dust or mould on feed. • Equid shows signs of good health.	• Good health. • Good respiratory and ocular health. • Comfort and fullness.
• Source of food and water is monitored and is palatable and free of contamination. • Areas for eating and drinking are dry and clean. • Grazing kept free of plants that are poisonous to equids.	• Regular inspection of water and food for palatability and signs of feeding and drinking.	

A GOOD PHYSICAL ENVIRONMENT

General Information

Equids evolved to roam and inhabit a range of environments, from very cold climates to very hot ones, from wet marsh lands to dry deserts. Equids need to live in an environment that allows them to be comfortable, promote positive health & welfare experiences and provide opportunities for equids to resolve discomfort themselves should they become uncomfortable.

Equids kept outdoors may be exposed to the effects of weather: heat, cold, rain, snow and wind.

The thermoneutral zone of a horse is usually between -15°C and 25°C , meaning that they can usually remain comfortable within this range without effort (Zeitler-Feicht et al., 2024). Outside of this temperature range, there is an increase in physiological effort required to maintain a healthy core body temperature.

It is therefore important that equids have access to shelter, ideally at all times but especially in extreme temperatures and weathers. In areas lacking natural shelter belts and trees, they benefit from constructed artificial shelters or covers for protection from the elements.

Lack of adequate shade and shelter can result in stress, discomfort, loss of body condition and increased susceptibility to disease. For the environment of the equid to provide good welfare it must be safe, comfortable and provide protection from adverse weather conditions, insects, from harm and allow appropriate behaviour.

> DONKEYS: **the coat and hooves of a donkey are more susceptible to the effects of wet weather; skin conditions will occur if the donkey does not have access to shelter from rain and hoof conditions/ disease will occur if the donkey does not have an area of hard dry clean standing because their hooves absorb more humidity from the environment than those of horses. Natural shelter alone is not considered to be suitable for donkeys kept in wet temperate climates.**

> MULES: **are better adapted than donkeys to withstanding extreme climates.**

Rest and sleep are important considerations in maintaining good equid welfare, and equids should have access to suitable locations and surfaces to allow them to rest and sleep safely. To achieve proper sleep, equids need to be able to lie down on a dry and comfortable surface.

Horses will always choose by preference a slightly elevated position to give themselves a good all-round view. Under benign conditions, and for enhanced sense of security, they will sleep at the same time, within visual contact of each other, and usually one horse remains standing. Sufficient space is essential to allow this.

Environmental stressors, such as higher temperatures and nuisance insects are known to affect the sleep patterns of free-living equids.

The place where the equid lives and is kept, the resources available and the external factors affecting their welfare all contribute to their environment. They should be protected and safe and able to move freely with the opportunity for physical contact with other equids on a daily basis, or the opportunity to avoid contact if they so choose.

The horse is adapted through evolution to a life as a prey animal living on open plains and has developed a strong flight response. Horses are herd animals and spend most of their day grazing with a need for social interaction. The provision of social opportunities, including when stabled or housed,

is important for all equids who as social creatures should not be housed in isolation. It is particularly important for donkeys in instances where they live with bonded companions.

Shelter may be a building or structure providing accommodation or a natural source of shelter, such as trees or hedging, providing access to protection whilst the animal is free roaming or grazing.

Where the shelter provided is natural rather than a structure it may be sufficient for good welfare, but it may not be possible to provide all the conditions, such as protection from predators or insects, and this should be considered. Colder weather or constant wind may reduce insect numbers, but natural shelter may not be sufficient on its own during warmer weather or in locations that attract insects.

> DONKEYS: **Bonding behaviour is strong in donkeys meaning that housing must allow for physical contact between the bonded pair/group at all times.**

All equids should have daily access to suitable pasture, grazing or browsing, preferably with other equids. However, there will be situations where for welfare reasons, grazing may need to be restricted, for example the overweight or laminitic equid, when alternative options for turn out will be necessary, whilst always managing the grazing so that there are no feeding breaks of more than 4 hours.

> **Opportunity for moving freely, social contact and exercise, with access to grazing and browsing, is essential for the equid to experience a Good Life and is not provided solely by work or 'exercise' that is under the control of people.**

Common environmental stressors for domestic equids are:

- Lighting
- Noise and vibration
- Odours
- Substrate quality
- Ambient climate

Equids are generally adaptable and resilient in the face of fluctuating environmental stressors; however, their adaptation capacities have limits that, when exceeded, will disrupt essential body function, give rise to negative experiences and compromise their welfare.

CASE EXAMPLE TO ASSESS EQUID WELFARE HOLISTICALLY

PHYSICAL ENVIRONMENT

Equids are used for dragging timber logs from forests; mechanical vehicles cause damage to the forest undergrowth and forest cart-roads as well as the emission of exhaust gases and noise.

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An initial assessment of the welfare of the equid in the forefront of the picture could be positive – body condition appears to be good and there is opportunity for social interaction, and water is available.

However: Upon closer inspection using a more holistic approach to assessment it is clear that welfare is problematic. The environment is unsuitable for equids. There is no dry or comfortable space for lying or standing. There's no availability of shelter from rain or weather extremes, and these animals all have wet, muddy coats. This will cause conditions of the skin, legs and feet and associated discomfort, pain and even suffering.

The harness and equipment used on the animals in the group has not been removed during what appears to be a rest period. There are wounds likely caused by incorrectly fitted, or badly used harnesses, directly behind the elbow joint on the equid in the forefront, and a chain across the nose that could cause wounds or get caught in fencing.

Whilst food and water appears to be or have been provided, the forage has been trodden into the mud and the water is dirty. Both are likely to be unpalatable. Finally, the equids look depressed, uninterested and resigned; there is a possibility of learned helplessness.

> **Looking at the holistic picture and multiple indicators, including animal-based indicators, demonstrates the negative experiences caused as a result of the physical environment and the conditions in which they are kept.**

> **These equids are not even provided with a 'Life worth living' with minimum standards in place.**

GOOD PRACTICE GUIDELINES:

SHELTER

Shelter should provide adequate space to allow the equid to rest comfortably and to lie down in dry conditions, experience positive social interactions with other equids and have non-competitive access to feed and water. It must protect the equid from direct sunlight.

Equids may be tethered in stalls for specific management purposes; however, this can be the cause of serious injury if they are left untended for prolonged periods and this practice restricts the ability to move freely. In some regions across Europe tethering is banned for this reason. If it is practised it should never be for more than 6 hours in a 24-hour period, unless veterinary direction instructs otherwise.

The minimum requirements for shelter can be found at Appendix 2.

The minimum requirements will need to be increased according to size of the equid, time spent in the shelter, number of equids in the shelter and stage of life

Good shelter provides:

- protection from wet weather, from direct sun, heat stress and from cold
- a dry standing and lying area
- protection from predators
- protection from insects and other means of transmission of infection and subsequent disease spread, such as rabies and insect borne disease.
- protection from injury, including sharp objects and toxic construction materials
- prevent escape and resulting accidents or injury from machinery, vehicles and unsafe construction or surroundings
- sufficient space to allow the ability to rest comfortably and for all equids in the group to lie down at the same time, roll and practice social behaviours
- sufficient trough space for access to feed and water without the need for competition.

Good shelter should:

- be of the correct size – dependant on the amount of time the equid will spend in the shelter
- preferably have a sloping roof to prevent build-up of snow or rainwater
- have adequate natural light
- be well ventilated but without draughts
- have good quality air with low levels of ammonia.
- have good ground conditions; dry and non-slip
- have clean soft bedding for warmth and to prevent sores
- cleaned regularly with soiled bedding and faeces removed and disinfectant applied as appropriate to prevent disease spread
- free from objects that could cause injury e.g. glass, nails, sharp metal, wire, electrical wires or toxic substances.
- allow constant access to suitable forage and safe, clean water
- designed so that equids have contact with other equids, even if this is only muzzle to muzzle.

GOOD PRACTICE GUIDELINES:

GRAZING AND EXERCISE

All equids should have access to grazing, browsing and exercise. They should have the choice and the opportunity to roam freely.

The ground should be well drained and safe; free from objects that may cause injury, from poisonous plants or trees and secure from escape or from predators. Fences should be well maintained and an appropriate height.

Grazing, browsing and exercise provides:

- freedom of movement and ability to exercise
- opportunity for social interaction with other animals, preferably equids
- forage and appropriate diet.
- opportunity for frequent intake of fibre and good digestive health.

Grazing, browsing and exercise should:

- be safe, free of rubbish, sharp objects and poisonous plants or chemicals
- provided with access to shelter and shade.
- managed where the nutritional intake must be limited

Good practice for provision of enrichment

An appropriate environment should promote normal behaviour and ensure that the equid's instinctual needs are met without the need to add enrichment (European Union Reference Centre for Animal Welfare, n.d.).

Environmental enrichment will allow additional stimulation for equids and will prevent problems associated with lack of behavioural opportunity, leading to the performance of abnormal or problem behaviours. Enrichment is only considered to be positive if it is perceived as such by the animal.

A poor environment with no stimulation can cause frustration and lead to negative emotional experiences.

Modifications to the environment can be:

- Physical enrichments to increase the interest in the equid's living space and the provision of additional elements, for example barriers to increase spatial complexity
- Occupational enrichments that promote physical and/or psychological activities by providing opportunities to exercise or to engage in cognitive tasks, for example positive training
- Feeding enrichments that promote foraging and feeding behaviour by providing new or varied foods, or feed delivery methods, for example the use of foraging devices

Equid Welfare Assessment

Minimum Standard and Best Practice Indicators – Physical Environment

In addition to assessing the provision of the resource-based requirements for a good physical environment as listed in Appendix 2 both Resource-based and Animal-based indicators should be used to aid assessment of the provision of a good physical environment.

Example Minimum Standard Indicators

Evidence for providing the basic requirements for a good physical environment (Minimum Standard Indicators) is not enough to ensure good welfare on its own, other elements and factors must also be considered and measured to give an overall assessment.

Resource-based indicators

- Adequate and appropriate space for lying down in a comfortable and dry bedded area or on suitable dry ground
- Adequate provision of dry standing and non-competitive access to shelter, feed and water
- Access to shelter from sun, rain, wind, insects and adverse weather conditions
- Natural shade or shelter is available or artificial shelter/s are provided and are large enough to hold all animals in the group
- Equids monitored frequently when ambient temperatures are extreme, animal behaviour is observed and corrective action taken if needed
- Opportunity to exercise freely and graze or browse
- Opportunity for social contact with other equids

Animal-based indicators

- Equids are not cold (e.g. excessive shivering) or experiencing heat stress (e.g. rapid breathing, excessive sweating)
- Equids have no skin lesions from unsafe/ inappropriate fencing or shelter construction, insufficient bedding, insect irritation or wet conditions
- Equids have good foot health and show no lameness due to standing in wet conditions
- Equids are comfortable and content
- No abnormal behaviours seen, for example stereotypical behaviour

Additional indicators of Best practice provide evidence of an animal experiencing a 'Good Life'.

Example Best Practice Indicators

Resource-based indicators

- Natural or artificial shelter provides a thermoneutral environment with protection from insects where necessary, sufficient lighting, good ventilation and air quality
- Sufficient quality and quantity of space for equids to perform their species-typical behaviours and fulfil their behavioural needs
- The environment is safe and free of rubbish and sharp objects
- Environmental enrichment is provided to supplement the animal's living environment to provide for essential behavioural needs

Animal-based indicators

- Equids appear comfortable, rested and are able to sleep
- Equids have daily physical contact with other equids
- Equids have the ability to make behavioural choices to help regulate their body temperature such as to seek available shelter or shade.
- Equids are engaged with their surroundings and demonstrate interest and play behaviours
- Equids exhibit positive behaviours associated with pleasure in exercise, ability to move freely and choice
- Equids perform normal maintenance behaviours such as rolling, grooming

Monitoring the physical environment in which the equid is kept, by means of behaviour, body condition scoring and health as well as signs of play, social interaction, contentment, curiosity and good health is essential for good welfare.

Actions to achieve best practice

Refer to Figure 5 below for examples of positive enhancement aims and actions to give the equid a life worth living or even a 'Good Life'.

Figure 5: Examples of actions to address minimum standards and to achieve best practice to provide a 'Good Life' in relation to the physical environment

WHERE WE SHOULD BE

INDICATORS DESCRIBING A NEGATIVE SITUATION (A life not worth living)	**INDICATORS OF MINIMUM STANDARDS** (A life worth living)	**INDICATORS OF BEST PRACTICE** (A Good Life)
+ Actions to improve welfare	+ Enhancements to provide a Good Life	
Adequate – Shelter and Protection		
• Wet and unsuitable ground conditions. • Poor skin health and foot health. • Heat exhaustion and cold stress. • Agitated, exhausted and stressed.	• Access to shade, shelter and protection from insects. • No signs of cold or heat exhaustion. • Equids are in good health and are comfortable.	• Equids are relaxed and calm, show resting behaviour and sleep. • Shelter has sufficient lighting, good ventilation and air quality. • Equids have choice to seek shelter and shade.
• Protection from direct sun, weather conditions and insects. • Protection from extreme weather. • Monitored for issues with thermoregulation and a need for coverings and/or additional food or water provided if necessary.	• Good air quality with efficient ventilation and management of dust.	
Sufficient space available		
• Unable to lie down and insufficient dry areas. • Competing for space and access to troughs, aggression between equids in group.	• All equids are able to lie down and stand in the dry. • Non-competitive access to shelter, food and water. • Equids show normal positive behaviours.	• No aggressive behaviour near entrances to shelter or troughs. • Equids show positive social interactions with other equids, and fulfil their behaviour needs such as rolling and grooming.
• Appropriate space for lying for all equids in group. • Sufficient dry, clean bedding and dry standing areas.	• Enough entrances to shelter and trough space for non-competitive access.	
Accessible grazing, browsing and opportunity for exercise		
• No access to grazing or exercise. • Poor health. • Showing irritation, stereotypical behaviour, boredom, stress. • Weak, exhausted, dehydrated.	• Equids have daily access to grazing and browsing. • Equids are able to move and exercise freely on a daily basis. • Equids have some exercise, but this is controlled by handler.	• Showing positive behaviours, moving over the distance available and making choices. • Equids show pleasure in exercise. • Equids are stimulated by environmental enrichment. • Safe environment free of sharp objects.
• Access available for grazing and browsing and for exercise. • Water and shelter available whilst grazing and protection from insects as appropriate. • If confined to accommodation, controlled exercise is given eg lunging.	• Area for grazing fenced for protection from harm if appropriate. • Area is cleared of rubbish and sharp objects • Environmental enrichment is provided.	
Opportunity for social contact and bonding with other equids		
• Boredom. • Frustration and agitated. • Rebound behaviour seen; fearful and reactive.	• No abnormal behaviours such as stereotypical behaviour.	• Equids have daily physical contact with other equids Equids perform normal maintenance behaviours such as rolling, grooming. • Inquisitive and enthusiastic.
• Sight of other equids at all times.	• Environment designed to allow daily physical contact with other equids and choice with regard to interactions.	


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GOOD HEALTH

General Information

Health and welfare are related, and those responsible for the care of equids must be able to recognise signs of ill-health, have knowledge of basic first aid, and have access to a veterinarian to diagnose and treat any serious illness or injury. Early attention to health problems and routine care minimises suffering and frequently optimises the outcome, therefore it is necessary to be able to recognise signs of both good and ill health, including subtle signs of pain or disease which may only be manifested by changes in behaviour or facial expression. Knowing and understanding the typical behaviour and demeanour of each individual animal is a key part of this.

> **Easy and affordable access to good professional or trained health care is essential for all equids, whatever the purpose for which they are kept.**

Animal health programmes need to include disease prevention strategies. To provide Good Health for an equid it is not only necessary to provide prompt and effective treatment for a condition or disease, but even more important for the quality of life (QoL) of the equid is to prevent occurrence of disease, injury and poor health by having effective prophylactic programmes in place.

An effective prophylactic programme requires an understanding of good husbandry, which includes provision of a safe environment that meets the animals' physical needs, provision of appropriate nutrition, and daily inspection for signs of physical issues and behavioural changes, supported by effective training and education. Education for owners and keepers should be based on positive reinforcement and include questionings and changed attitudes towards traditional practices which cause harm: mutilations and the detrimental effects resulting from them.

> **The principle of 'Do no harm' should be practised at all times**

In order to establish and maintain a Good Health programme, in addition to a Good Physical Environment and Good Nutrition, preventative healthcare must be practised and should include as a minimum:

- Effective biosecurity
- Foot care
- Dental care
- Vaccination as appropriate
- Parasite control

Effective biosecurity measures protect animals from exposure to, or spread of, infectious agents. Regular examination of the hooves of equids can ensure that signs of injury, other abnormalities,

loose shoes and impacted foreign material are detected before they cause further problems to the health of the equid.

Dental health can have a large influence on equid health and welfare. Worn, sharp or otherwise abnormal teeth can lead to discomfort or pain and difficulties with chewing and proper digestion of food, increasing the risk of life-threatening conditions such as impaction colic.

An effective parasite management programme must be in place, as large parasite burdens can cause disease, loss of weight and a gradual deterioration in general health. A holistic approach is most effective for management purposes, including environment management, faecal egg count monitoring and the strategic, rather than blanket, use of anti-parasitic agents.

Easy and affordable access to good professional or trained health care must be addressed and systems are already in place to improve access, but need to be applied consistently wherever equids are kept.

> DONKEYS: **Donkeys have clinical and behavioural parameters that are different to horses (The Donkey Sanctuary, 2021). See Appendix 3 for the parameters. They do not readily demonstrate disease or painful conditions; these may thus be missed, in particular if horse norms are used as reference points. An important sign of ill health in the donkey is a lowered head to below the withers and they may be depressed, dull, and show reduced interest towards their environment and companions and food.**

Breeding programmes should consider the genetic pool and the sustainability of the breed. Genetic manipulation can lead to unintended consequences with welfare issues, detrimental phenotypes, poor health and poor productivity. Artificially facilitated breeding for higher birth rates or specific factors, such as size, movement/gait, appearance or yield can cause welfare issues and by association health and productivity issues. Equids with detrimental phenotypes or heritable issues should never be considered for breeding.

Decisions around end-of-life must always be based on a Quality of Life assessment of the equid. The long-term QoL and the possibility of improving the welfare of the equid should be factors considered in the ultimate determination of the welfare status of the equid and the decision for end-of life.

CASE EXAMPLE TO ASSESS EQUID WELFARE HOLISTICALLY

HEALTH

Mares kept for the purpose of PMSG/eCG production in Iceland graze across vast pastures. They are provided with additional forage in the winter and generally have an adequate body condition score. They demonstrate the behaviour of the 'social herd-animal' with freedom to roam in a natural environment.

Based on these parameters the mares could be assessed as having a 'Good Life'.

However: Blood is collected at a rate (5 litres per week for 8 weeks) that is significantly greater and more frequent than allowed in existing guidelines for non-pregnant horses and presents serious health risks for the pregnant and lactating mare. They suffer pain from repeated puncture of the jugular vein and risk venous injury, inflammations or thrombosis. There is also a risk of injuries to their head, neck or legs as a result of the restraint.

Due to their negative experiences related to the restraint, handling and blood harvesting their response to human interaction is one of fear, flight or fight responses. The force used to drive them into the 'crush' and the inappropriate restraint causes stress and panic. They also show clear signs of frustration, such as repeated yawning, whinnying, nodding the head, pawing the ground and lip flapping when they are being restrained.

Some mares may appear to be acceptant; as they don't struggle or resist, but this is likely to be a symptom of 'Learned Helplessness', a stress response resulting from repeated failure to escape from, or avoid, the fear and distress on previous occasions.

> **Looking at the holistic picture and multiple indicators, including animal-based indicators, demonstrates that the negative experiences of blood mares outweigh the positive ones.**

> **These mares are not having a 'Good Life', or even a 'Life worth living' with minimum standards in place.**

GOOD PRACTICE GUIDELINES:

PREVENTATIVE PROGRAMMES FOR GOOD HEALTH

Although prompt treatment or procedures to resolve conditions are important to the health and welfare of the equid, the prevention of that disease or condition in the first place is best practice and provides a good QoL and a 'Good Life'.

Fundamental to this are good programmes of prophylaxis by well trained and experienced providers. In some of the sectors these must also be affordable and accessible.

Good biosecurity is often forgotten but protects against exposure to, or spread of, infectious agents. Important is the quarantine of sick animals or any new animals introduced to the group. Strict hygienic practices and disinfection when appropriate must also be followed and the use of a biosecurity plan is always best practice.

Good prophylaxis provides:

- Good welfare and good health for the equid
- Protection from exposure to, and spread of, disease
- Good productivity, vitality and comfort
- Absence of pain
- Good Quality of Life

Good prophylaxis should include:

- effective biosecurity practised at all times, including quarantine of newly introduced equids
- regular weight checks and BCS check
- a programme of foot care by a trained provider
- attention to dental health and oral examination included in all health checks
- vaccination as appropriate
- an appropriate programme for parasite control
- regular QoL checks at a frequency determined by age and health status
- an effective ongoing training programme for husbandry and health care for the equid

GOOD PRACTICE GUIDELINES:

RESPONSIBLE BREEDING

Best practice for breeding is to consider the attributes of the mare and the stallion, the method of breeding and whether breeding is necessary.

Artificial insemination and other methods of non-natural breeding must only be undertaken with professional support and guidance and the ethical and welfare implications of any assisted reproductive techniques must be considered along with the use of drugs or other interventions that aim to increase fertility or size of offspring. Thoroughbreds used for racing must always be bred naturally.

The existing genetic pool and sustainability of the breed and/or species must be considered and pairings that might increase inbreeding or otherwise be detrimental to the sustainability of the breed/species should not be allowed.

Good breeding practices and programmes provides:

- Good conformation and health for the equid
- Absence of inherited abnormalities or dysfunctions
- Survival of the species and the breeds
- Humane management of both mare and stallion at all stages of the reproductive cycle with allowance for species-specific behaviours.

Good breeding practices and programmes should:

- Ensure both mare and stallion: are in good health; have good conformation; are not carrying any venereal diseases; do not suffer from genetic conditions that are detrimental to health and/or welfare; do not experience any pain or are caused to suffer as a result of the method used
- Ensure that the mare has achieved sufficient physical maturity that covering, pregnancy, parturition, and lactation will not be detrimental to her own health or physical development
- Ensure that the period between gestations allows the mare time to recover from any previous pregnancy and parturition
- Ensure the diet is appropriate and adapted to the specific breeding stage

The minimum requirements for Good Health, including good breeding practices, can be found at Appendix 3

GOOD PRACTICE GUIDELINES:

MUTILATIONS AND HARMFUL PROCEDURES

Any procedure which destroys or interferes with healthy tissue must be considered as harmful or as a mutilation, unless it can be justified on the basis that it improves the overall health and welfare of the individual equid or group of equids. Two examples of the latter are castration and other humane methods of contraception, both of which may be used to control the size of a population or to prevent breeding where a congenital abnormality exists.

Many mutilations are traditional practices that have been handed down through generations. For some procedures, current generations may believe that the procedure is beneficial to the animal. For others, the original reason for the procedure may no longer be known, yet its use continues to be unquestioned. Human behaviour change, affected by education, is necessary to prevent continuation of these practices.

In contrast, some harmful practices are not traditional and are performed solely for the benefit of the people who keep or manage the equid, including commercial benefits. When considering the welfare costs to those animals involved it is clear that these practices should be made illegal on the basis of the welfare compromises that they involve.

One example of a commercial use of equids for human benefit involves the collection of blood from pregnant mares for the production of equine chorionic gonadotropin (eCG)/pregnant mare serum gonadotropin (PMSG). The volume and frequency of blood collected is greater than existing guidelines considered to be safe for the health of the non-pregnant horse.(Federal Office of Consumer Protection and Food Safety, n.d.) The procedure and resultant loss of blood can lead to hypovolemic shock, venous disease, cardio-circulatory problems, anaemia and spontaneous abortion (miscarriage). A pregnant mare exposed to fear, pain and stress from these procedures can never be said to experience even minimum standards of welfare.

A second example involves the castration of colts and stallions. This may be performed to render a male equid easier to handle, to control populations, or to reduce indiscriminate breeding. If performed without anaesthesia and analgesia, castration is both painful and stressful. However, the use of drugs may result in the equid being ‘signed out’ of the human food chain. As a result, castration may be performed without appropriate anaesthesia or analgesia in order to allow owners to retain the option of slaughtering the animal at a later date and will result in severe welfare issues for the equid.

GOOD PRACTICE GUIDELINES:

END OF LIFE

No equid should be allowed to suffer chronic unremitting pain or discomfort or acute untreatable pain or disease (Torcivia et al., 2021). Equid QoL must always be considered when decisions are made regarding the end of life for an equid.

Similarly prolonged hunger, thirst or an environment which poses a significant risk to the welfare of the equid (for example, prolonged drought, natural disaster, or conflict) may necessitate planned euthanasia or slaughter.

The use of a decision tree, including assessment of the physical and mental state of the equid, is best practice and should always be considered.

Equid Welfare Assessment

Minimum Standard and Best Practice Indicators – Health

In addition to assessing the provision of Good Health, and aspiring to A 'Good Life' for Equids, both Resource-based and Animal-based indicators should be used to aid assessment of the provision of good health, alongside the context of the situation that the equid is kept in.

Example Minimum Standard Indicators

Resource-based indicators

- Good biosecurity practices in place with evidence of good hygiene
- Appropriate areas available for quarantine of sick or newly introduced equids
- QoL assessed and monitored regularly
- Evidence of effective use of analgesia for routine painful procedures

Animal-based indicators

- Good foot conformation and gait
- Good dental health and skin health
- Absence of conditions caused by parasites
- Good growth and development and good conformation
- Stable and good BCS
- Absence of intentional harm and injury by human intervention
- Absence of pain and fear

Evidence for providing the basic health requirements (Minimum Standard Indicators) is not enough to ensure good welfare on its own, other elements and factors must also be considered and measured to give an overall assessment.

Additional indicators of Best practice provide evidence of an animal experiencing a 'Good Life'.

Example Best Practice Indicators to provide a 'Good Life'

Resource-based indicators

- Evidence of good professional healthcare
- Evidence of appropriate biosecurity planning
- Evidence of change in practice away from normalised use of mutilations
- Evidence of knowledge of how to make humane and timely decisions regarding end of life

Animal-based indicators

- No signs of frequently recurring health conditions
- Good physical congenital health
- Equids have long, healthy lives
- Positive signs of comfort, pleasure and rest

Actions to achieve best practice

Refer to Figure 6 below for examples of positive enhancement aims and actions to give the equid a life worth living or even a 'Good Life'.

Figure 6: Examples of actions to address minimum standards and to achieve best practice to provide a 'Good Life' in relation to Health

WHERE WE SHOULD BE

INDICATORS DESCRIBING A NEGATIVE SITUATION (A life not worth living)	**INDICATORS OF MINIMUM STANDARDS** (A life worth living)	**INDICATORS OF BEST PRACTICE** (A Good Life)
+ Actions to improve welfare	+ Enhancements to provide a Good Life	
Prevention		
• Recurring health issues – wounds and injuries. • Overgrown feet, lameness, inability to chew and resulting issues such as colic, disease. • Pain, suffering, apathy.	• Good health, no signs of disease, lameness or wounds and injuries. • No potential for introduction of infectious agents. • Evidence of use of analgesia for painful procedures.	• Biosecurity plan in place. • Evidence of good professional healthcare . • Exhibiting behaviours that relate to comfort and pleasure and rest. • Equids have long, healthy lives with no evidence of recurring conditions.
• Training for foot and dental care in place. • Education for owners/keepers on husbandry needs and health care. • Good hygienic practices in place.	• Biosecurity plan in place where necessary and quarantine facilities in place. • Parasitic control programme in place. • Training and capacity building for healthcare providers.	
Good breeding		
• Poor conformation and poor development. • Congenital issues. • Fear, stress and stereotypical behaviour.	• Good conformation. • Absence of congenital deformities. • Good development and maturity. • Good and stable BCS.	• Good physical congenital health.
• Breeding programme in place to enable reduction of congenital abnormalities and survival of breed. • Breeding from mares allows for age and development and appropriate period between pregnancies.	• Risk assessment for artificial facilitation of breeding. • Monitoring welfare throughout artificial breeding practices.	
No mutilations or harm		
• Poor health. • Wounds and injuries. • Apathy as a result of pain. • Fear of people and remembered pain.	• Absence of intentional harm and injury. • Absence of pain and fear. • Good Health.	• Evidence of change in practice away from normalised use of mutilations.
• Education for human behaviour change with regard to traditional practices. • Risk assessment for justification of harm or intentional intervention.	• Regulations in place for intentional harm or injury.	
End of life		
• Signs of chronic suffering and pain. • Apathy. • Wounds due to lying for long periods. • Poor Body condition. • Exhausted, depressed, weak.	• Good quality of Life. • Calm, rested and content.	• Inquisitive and enthusiastic. • Resting behaviours and pleasure in comfort shown. • Positive approach to people.
• Quality of Life monitored and assessed regularly. • A decision tree in place for end of life.	• End of life considered where prolonged provision of food, water or a manageable environment is at risk. • Regulation against abandonment.	

Pleasure in social interaction, © The Donkey Sanctuary

POSITIVE BEHAVIOURAL INTERACTIONS

General Information

Behavioural Interactions include those with the environment, other animals and with people. It is necessary to understand the behaviours of equids, species differences and their responses to interactions to provide the requirements essential for good welfare of the equid.

Consideration of the evolution of the species will provide better understanding of the social, physical and human interface necessary to meet the behavioural needs of an equid and to ensure positive welfare outcomes.

Social Behaviour

Equids are highly social animals, adapted for group living where they interact with each other in complex and nuanced ways. Competition over certain resources (e.g. feed, shelter) is more common under domestic conditions than in naturalistic conditions, and may result in agonistic (aggressive and submissive) behaviour between two or more group members

Across Europe equids are kept under a variety of conditions, from extensive grazing to intensive housing individually or in groups in covered yards, barns and stables. As highly social animals, equid species thrive best in stable groups where they can establish stable individual relationships; even in intensively managed situations, horses, donkeys and mules need to be provided with companions to maintain their welfare.

While interaction with humans may provide an opportunity for social enrichment, the provision of social companions of their own species is necessary. Only in exceptional cases, such as for health reasons, should an equid be kept without physical social contact. However, even in such a situation there is a need for daily visual and auditory contact with other animals of the same species.

DONKEYS: **Donkeys bond strongly with each other. Care needs to be taken not to separate bonded partnerships in order to minimise the risk of stress and illness that this may cause, particularly if the donkey only has one other companion.**

A restrictive husbandry without daily direct social contact is a cause for the development of behavioural disorders.

CASE EXAMPLE **TO ASSESS EQUID WELFARE HOLISTICALLY**

BEHAVIOURAL INTERACTIONS

Equids are traditionally used for large religious festivals and ceremonies in many parts of Europe. Many thousands of equids are used at a festival with over a million people in attendance. Mules are usually paraded by their owners, and some young mules are brought to the festivals as part of their training for participation in future festivals.

The festivals can last many hours or days and although the mules have the opportunity to rest whilst waiting to work during the festival, they have a full harness and cart in place which will impact on their comfort.

In this example, the mules were in good body condition with an average BCS of 3 out of a scale of 5 and they had adequate food and water available to them. An initial assessment would have concluded that the mules' basic needs were being provided for, and they were experiencing adequate welfare.

However: The mules would have been transported over long distances to participate in the festival, sometimes by truck but also walking over several days. Whilst involved in the festival they would be exposed to a potentially frightening and stressful experience, with crowds of people, loud noises, no choice regarding their interaction with people and no control in relation to their environment. The demeanour of the group of mules in this example appeared to be dull, their heads were down and they appeared fatigued whilst waiting for work.

In order to provide the handlers with additional control, especially when the mules are fearful and want to show escape or flight responses, a heavy, metal spiked noseband (a Serreta noseband) was used on the mules and in particular on the younger, less experienced animals. This means that pulling on the reins causes increased pressure to the metal noseband with the result being an increase in discomfort, pain and/or injury to the nose, as a consequence of the spikes.

Making use of multiple welfare indicators provides a more holistic approach to assessing the situation. The negative emotions, including fear, pain and distress, experienced as a result of the use of the Serreta noseband can only lead to the conclusion that these mules are not having a 'Good Life', or even a 'Life worth living' with minimum standards in place.

Group living

When group housing or mixing animals in a paddock, consideration needs to be given to individual differences, such as temperament, health, physiological status and differences in breed, sexual status, age and body size, as well as environmental factors such as access and availability of food and water, ground conditions and available space. Whenever new animals are introduced into a group, they will need to establish their relationships with individuals within the group. Initial responses such as aggressive behaviour towards the incomer may lead to injury and distress. Introducing new animals and the group's behavioural response needs to be carefully managed, if possible, using a phased approach.

When given the option equids tend to avoid conflict. The predominant response to aggression from another individual is to show avoidance behaviour. Risk of injury increases where equids are overcrowded, and competition for food, water and space may lead to health issues such as poor body condition and increased aggression. Certain individuals as well as younger and older animals will need to have sufficient space available to escape unwanted attention.

Indicators of problems related to insufficient or poorly designed space to access resources manifest as continual harassment, injuries, hair-loss, kicking, excessive fence pacing and isolation.

Sick and injured animals, and in some cases mares prior to foaling, may require segregation from the group to reduce stress or risk of injury, and/or facilitate healing and reduce transfer of disease. Stallions and colts also have a need for social contact and should be kept at the very least in pairs but can also live together in groups.

Space and Opportunity for Exercise

Exercise, and especially the opportunity to exercise freely, is extremely important for physical and mental health, particularly where animals are maintained in individual stalls or stables for many hours of the day. For example, it is common practice for racehorses to be kept for much of their time stabled with limited or no social contact with other equids. They are often only taken out of their stable for ridden exercise but given minimal opportunity to exercise freely.

Insufficient exercise can lead to stress-related behavioural problems and the development of stereotypical behaviours. Equids should be provided with daily opportunities to move at leisure in paddocks or fields of adequate size. In addition to this, they may be exercised by being ridden, but they can also be exercised in other ways such as lunging them, walking them in hand or on a horse walker.

> **Horses are prey animals and therefore always scan their surroundings for potential dangers, "the larger the area, they can scan, the safer the animal will feel".**

Human Interaction

Behaviour is the primary method through which equids display their emotional state. It is therefore an important way to gain information directly from the animal about their welfare status, needs, wants and preferences, including what they find pleasant or unpleasant, what makes them comfortable or uncomfortable, and what their priorities are.

> DONKEYS: **It may be more challenging to gain information directly from the donkey about their emotional state; they are typically less behaviourally expressive than horses**

If people responsible for equids are not familiar with normal and abnormal behaviour for the species and individual animal, important opportunities to address welfare compromise, take preventative or remedial action, or capitalise on opportunities for positive welfare experiences may be missed.

Human-animal interactions should be positive in order not to compromise the welfare of the equid. Different natural behaviours and social interactions between horses, mules and donkeys should be taken into account when interacting with them. Positive human-animal interaction generally refers to behaviour from people towards animals that the latter find pleasant, comforting or enjoyable. Equids may have individual preferences for interactions they find particularly positive, as well as those that they find aversive, and it's important that people responsible for equids are able to recognise these responses.

GOOD PRACTICE GUIDELINES:
HANDLING AND MANAGEMENT

It is necessary to understand the behaviours of equids, of species differences and of their responses to interactions to provide the requirements essential for good welfare of the equid.

> **Equids have a good memory and remember good and bad experiences for a long time. Negative and painful experiences, and especially those provoking fear, can affect behaviour for many years.**

Good management skills, appropriate care and timely intervention can lead to positive outcomes for equid behaviour, health and welfare. There are some differences in the types of handling and care

required to maintain the welfare of equids that should be recognised for limiting stress and injury during restraint, handling and training.

Each species will have their own behaviour needs and methods of handling and restraint will be different if these needs are to be catered for.

Handling

The human-animal interaction should be characterised by the use of training and handling involving the correct use of positive and negative reinforcement; consistent response and language with the use of good timing will establish clear associations with the specific behaviours being targeted. Punishment is not appropriate for equids.

Ensuring that the equid has many positive experiences during a handling or training session and making sure to limit painful or fear-inducing experiences will help create positive associations to people that will make future handling easier.

Giving the equid a reward, such as food, following a correct behavioural response or in conjunction with restraint will help create a positive experience and mitigate any negative experiences.

Training

Horses are prey animals and so are likely to flee in response to situations they are unsure or fearful of. For this reason, horses should be exposed to any novel or potentially fear-inducing situation in a gradual and methodical way.

DONKEYS are more likely to freeze or fight in response to a situation they are unsure and fearful of.

MULES are likely to express a combination of horse and donkey behavioural responses.

The risk of injury to both handlers and equids is reduced when good handling skills are used and the animal is managed in appropriate facilities. Handlers with knowledge of appropriate handling and management approaches in keeping with the equids' natural behaviour, can lead to positive welfare outcomes for the animal(s).

Reinforcing and rewarding desired behaviours is crucial when training equids to perform to their full potential. Animals exhibiting undesirable physiological and/or behavioural responses to handling, training and confinement can do so for a number of reasons, including lack of prior experience/ novelty, negative prior experience, frustration or pain. Training techniques, methods and equipment should therefore be applied humanely making correct use of learning theory in training. All handlers should be able to recognise the signs of stress and pain in equids and avoid use of or continuation of any training or handling methods that are aversive to the animal and provoke a fear, frustration or stress response.

Training programmes must allow for growth and development when starting the programme and designing the athletic and load requirements. Training must avoid causing unnecessary physical and emotional discomfort, removing the risk of remembered pain or fear which will affect human-animal interactions for future handling, performance and procedures.

The age that an equid is physically and mentally mature enough to begin their training will vary considerably depending on their species, breed, individual development and the discipline for which they are to be used. The weight of rider/driver and amount of work they are asked to perform needs to be appropriate for their individual capabilities.

Performance

Good horsemanship, including husbandry and training, should enable horses (and this can be appropriate for mules) to perform as desired without the need for restrictive and painful methods, equipment or aids (Equine Ethics and Wellbeing Commission. FEI, 2023). It is essential that horses are not subjected to risks to welfare such as excessive behavioural restriction, discomfort, or constant pressure during training, management, transport, work or performance.

As social creatures, equids form close bonds with humans if given the opportunity, and a positive relationship between the person and horse or mule should be the aim for ensuring the safety, welfare and sustainable success of the interaction. At the highest level of performance, equestrians rely on the equids' training to successfully tackle challenging obstacles and for performing under demanding conditions, making prioritisation of the welfare of equids essential for maintaining a positive, safe and productive working relationship with the horse.

Periods of high athletic performance must be balanced with periods of rest and with consideration of intake of food and water, risk of injury and musculoskeletal issues. Age, stage of life and health must be an important factor in the decision to make athletic demands on an equid.

Restraint

There are times when procedures that are regarded as aversive by an equid must be carried out. As a general point, if a procedure can be delayed, it is always preferable to train the equid to accept the procedure using positive reinforcement and gradual desensitisation than to use restraint. However, sometimes, restraint is essential. This includes situations where prior training is not possible, where the procedure is inherently aversive, or where restraint is essential for the safety of the equid (e.g., in areas with heavy, moving machinery or vehicles that could cause harm). The method of restraint could be physical or chemical (i.e., sedation administered by a veterinarian).

Physical restraint should not cause pain or discomfort. Ear twitching is painful, should not be used, and can lead to the 'fight' response when used on donkeys. Nose/lip twitching should only be used in limited situations (e.g., a case of colic where there is no alternative and performance of a procedure is vital for the animal's future health) and for a short duration (less than 5 minutes).

Lifting a leg may be effective for some procedures. In contrast, use of 'aids' such as hobbling and twisting of ears is not conducive to good welfare and is likely to lead to 'remembered conditioning' and 'unwelcome' behaviour for future procedures. It is also likely to be dangerous to both the animal and the handler, especially in a species where 'flight' or 'fight' is the response to fear or pain.

If an equid is tied to an object using a lead rope to provide restraint for procedures, this must be done for short periods only and must allow quick release for emergencies. Stocks and races may be used but must always be designed with the equid in mind and training must be carried out prior to the procedure being performed, to habituate the equid to the equipment.

Tethering may be used as a form of restraint whilst animals are resting from work or performance. If tethered, the equid must always have access to shade and shelter and be able to reach food and water. Tethering is banned in some regions across Europe because of the risk of injury and the welfare implications resulting from the inability to move freely.

If the procedure can be delayed it is always preferable to train the equid to accept the procedure by using positive reinforcement and gradual desensitisation to the fear experienced by the equid.

Good handling and management provides:

- positive interactions with the environment, other animals and with people.
- space for allowing for the behavioural needs and responses of the different equid species
- opportunities for social engagement, exercise and free movement
- opportunities for physical contact with conspecifics
- positive training and handling programmes using appropriate methods suitable for the species

Good handling and management should:

- manage equids introduced into new groups to minimise the effects of competition, aggression and injury.
- monitor the social responses in the group and adjust management practices to provide for individual needs
- ensure social interactions with other equids, even when individually housed
- provide opportunity for daily exercise sufficient to maintain good health and welfare.
- ensure predictable and consistent interactions with people in order to reduce stress and uncertainty for equids.
- provide good training and handling policies, where punishment is never used, and negative reinforcement, if necessary, is applied in the correct way to elicit desired behaviours causing minimal stress to the equid.

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GOOD PRACTICE GUIDELINES:

EQUIPMENT AND WORKING CONDITIONS

Equids are asked to transport goods and people, to carry riders and to perform strenuous athletic activities. It is essential to design equipment that will cause no harm and will reduce weight and load bearing and remove risk of injury. Loads, weight bearing and pulling power, along with demands of work must also be managed so that the musculoskeletal system of the equid is not damaged, and the skin is not subjected to injury.

Equipment including harnesses, whips, saddles, bridles, bits, halters/headcollars, boots/bandages can have a significant impact on equid health and welfare. It is important that all equipment used to manage, handle, ride or drive equids is correctly fitted and sized to reduce risk of injury and minimise discomfort. All equipment should be maintained in a clean, supple condition, free from cracks and other features likely to cause injury, pain, discomfort or fear.

Equipment used to help guide or control and influence movement and behaviour, should be correctly applied. All handlers/riders/drivers should be aware of the potential negative effects that incorrect and harsh use of equipment can have on the health and welfare of the animal.

> **The use of restrictive equipment (e.g. draw reins, over tightened nosebands) used for controlling an equid needs to be reduced to a minimum through the application of appropriate, effective and safe training and handling techniques so as to maintain the equids' welfare.**

Padding or any covering, including rugs, should be made of appropriate materials and not be too thick to impair the function of the thermoregulatory mechanisms (Padalino et al., 2019).

Provision of a waterproof, well insulated cover is necessary for non-acclimatised, clipped, sick, injured, and old equids for warmth during cold weather.

Where purpose made blankets or covers are used to protect equids from climatic extremes, for traditional events or to pad other equipment such as saddles they must be fitted correctly and inspected regularly. They should be removed at least daily to check for any hidden skin conditions and to allow for natural behaviours such as rolling, to ensure that they are providing suitable protection and are not causing discomfort.

Work demands and loads

Excessive demands on an equid can cause physical harm to that animal; both short and long term, and especially if worked at too young an age; before they are sufficiently developed, or when they are elderly.

Overloading is defined as the weight with which gait rhythm is disrupted, leading to lameness and alteration of behaviour. Increased weight carrying may have negative effects on biomechanical, physiological, biochemical, and behavioural parameters of equids during exercise, including causing gait asymmetry or lameness.

The weight a horse can carry is important, and it depends upon several physical traits, including size, age, body condition score, body conformation, duration of work, third metacarpal bone circumference, type of work, and the intensity of the work to be performed. Overall, this subject is poorly studied. One factor that should be considered is that the impacts of mounted and harnessed loads are different, as the former is more energy demanding for a loaded trotting horse (Bukhari et al., 2021)

Donkeys have closer limbs and more upright hooves and are more suited for movement over difficult terrain instead of moving at speed. The anatomy of the donkey makes them able to carry heavier loads than that of the horse. Not much research has been carried out on donkeys, and there is no accurate and science-based permissible load carrying limit for them.(Bukhari et al., 2021)

> **In general, the working life of an equid should not commence until 3 years of age, and never earlier than 2 years of age (World Organisation for Animal Health., 2024).**

Equids should not work or perform if they are sick or injured and consideration must be given to temperatures. Elderly and pregnant equids must be checked regularly for fitness to work or perform.

Good equipment and work demand provides:

- safe and well fitted equipment that is suitable for the load, work, and performance required of the equid
- equipment that balances the load, reduces weight bearing, and/or decreases the pulling force required of the equid
- appropriate period for work and strenuous exercise
- minimum age for training and work that allows for correct development and maintenance of the musculoskeletal system
- regular rest periods, with access to food and water, where the equid can be comfortable and is sheltered from direct sunlight and other severe weather conditions

Good equipment and work demand should:

- be removed during rest periods to allow the equid comfort and for natural behaviours such as rolling.
- have no sharp edges in the harness or cart, should fit well, should have padding to spread load over a large area and should not impede the animal's movement, normal breathing or blood supply
- have accurate balancing and tyre pressure in carts and carriages and, where appropriate, a 'swingletree' to balance the pull.
- ensure a cart design with length of shafts etc that provide for ease of traction and the load on the cart should be properly balanced to eliminate the unnecessary workload caused by an unbalanced or badly designed load.
- consist of smooth 'bits' (if used) of appropriate size, clean, of a simple type and properly fitted to the shape of the mouth
- be appropriate in terms of working conditions and periods in relation to weather conditions, life stage and health of the equid

Equid Welfare Assessment

Minimum Standard and Best Practice Indicators – Behavioural Interactions

In addition to assessing the provision of positive behavioural interactions, and aspiring to a 'Good Life' for Equids, both Resource-based and Animal-based indicators should be used to aid assessment of the provision of positive behavioural interactions, alongside the context of the situation that the equid is kept in.

Example Minimum Standards Indicators

Resource-based indicators

- Provision of daily visual and auditory contact with other equids
- Provision of sufficient space to be able to escape the unwanted attention of others in a group situation
- Management practices provide for individual needs and minimise aggression between individuals
- Handling and training and the associated equipment is fitted correctly, designed and maintained and used in a way that does not cause pain, injury or distress to the animal
- Equids are handled, managed and trained at all times in such a way as to minimise the risk of pain, injury or distress
- Equids are not worked at such an intensity that is likely to cause exhaustion, heat stress, injury or distress

Animal-based indicators

- No signs of aggression and injury within mixed groups of equids
- Equids are active and alert and do not exhibit signs of discomfort, injury or distress
- Physical interactions with humans do not elicit fear responses and appear to be pleasurable for equids

The minimum requirements for workloads and rest periods can be found at Appendix 4.

These will need to be amended according to age and health status of the equid, and stage of production.

Evidence for providing the basic requirements for positive behavioural interactions (Minimum Standard Indicators) is not enough to ensure good welfare on its own, other elements and factors must also be considered and measured to give an overall assessment.

Additional indicators of Best practice provide evidence of an animal experiencing a 'Good Life'.

Example Best Practice Indicators to achieve a 'Good Life'

Resource-based indicators

- Equids are always maintained in stable social groups
- Ability for daily physical contact and social interactions with other equids even when individually housed
- Regular monitoring and appropriate response to ameliorate individual problems
- Vocal interaction using a soft, gentle voice

Animal-based indicators

- Equids show pleasure in exercise and activity
- Play behaviour is performed
- Frequent positive social interaction, physical contact and bonding with other equids including grooming
- Equids are calm, inquisitive and confident with humans

Actions to achieve best practice

Refer to Figure 7 below for examples of positive enhancement aims and actions to give the equid a life worth living or even a 'Good Life'.

Figure 7: Examples of actions to address minimum standards and to achieve best practice to provide a 'Good Life' in relation to behavioural interactions.

WHERE WE SHOULD BE

INDICATORS DESCRIBING A NEGATIVE SITUATION (A life not worth living)	**INDICATORS OF MINIMUM STANDARDS** (A life worth living)	**INDICATORS OF BEST PRACTICE** (A Good Life)
+ Actions to improve welfare	+ Enhancements to provide a Good Life	
Positive interactions with the environment		
• No access to grazing or exercise. • Showing irritation, frustration, stereotypical behaviour, boredom, stress. • Weak, exhausted, dehydrated.	• Space for all equids to choose interaction. • Suitable environment. • Good fitness and comfort. • Active and alert with no signs of distress.	• Equids are relaxed and calm and show resting behaviour. • Equids show pleasure in exercise and activity. • Able to exercise freely. • Choice of exercise.
• Access to exercise. • Time given for exercise. • Grazing or browsing available.	• Long periods spent grazing or browsing. • Access given to exercise with ability to choose.	
Positive interactions with other equids		
• Bullying and signs of aggression. • Stereotypical behaviours seen.	• No signs of injury or aggression. • Equids are calm and able to rest and sleep.	• Groups of equids are stable • Equids show positive social interactions with other equids and bonding behaviours. • Play behaviour is performed.
• Daily visual and auditory contact allowed. • Managed for individual needs and to minimise conflict. • Equids are able to escape unwanted attention.	• Opportunities for physical contact with other equids. • Equids are managed to keep groups stable where possible.	
Comfortable around people		
• Wounds and injuries. • Weak, exhausted. • Fear of people, remembered pain and flight or fight response. • Poor development and musculoskletal issues.	• Absence of wounds and injuries. • Good development and conformation. • No signs of fear towards people.	• A soft voice is used. • Calm and confident with people trust in people. • Inquisitive. • Positive approach to people which appears to be pleasurable.
• Well fitted, maintained and comfortable harness and tack. • Carts of correct design to minimise pulling force. • Rest periods given every 2 hours. • Strenuous training or work not started until a minimum of 2 years old.	• Positive reinforcement used in training. • Handling techniques used are appropriate to species. • Training for handling and restraint techniques is slow and allows for sensitisation.	
Opportunities for normal behaviour		
• Boredom. • Depressed. • Sress, aggression towards people. • Wounds from handling and restraint methods.	• Equids show normal behaviours such as rolling and self-grooming. • Enthusiastic and interested. • Calm and rested.	• Active, alert. • Signs of pleasure. • Rested and able to sleep.
• Enrichment opportunities provided. • Appropriate space for social interactions.	• Able to move freely, stimulation provided and choice to interact or exercise.	

POSITIVE MENTAL EXPERIENCES

KEY POINT: **A uniform educational framework to promote good equid welfare and best practice to achieve a Good Life for equids should be developed for use by members of the equid industry, regulators and all equid keepers in Europe.**

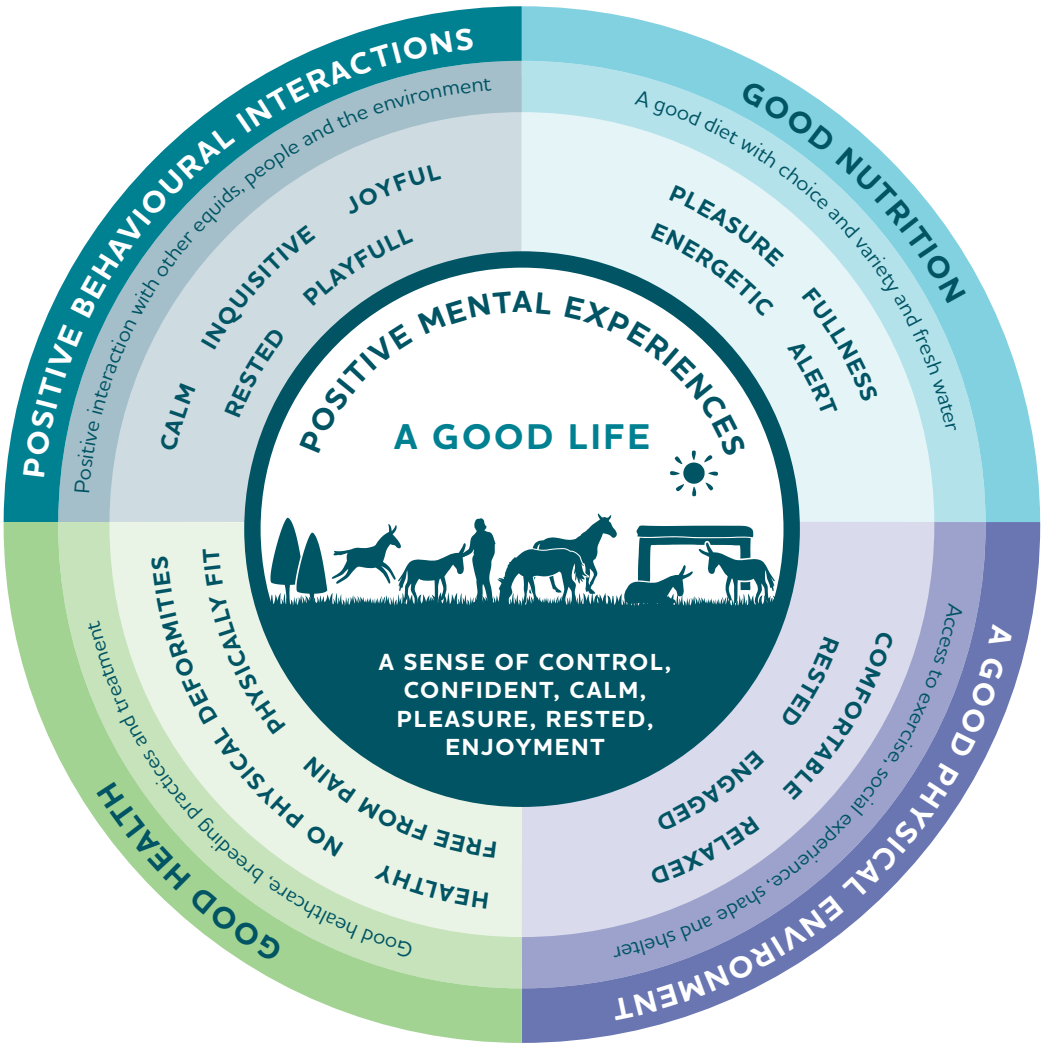
General information

Equids are sentient beings, meaning they can feel and experience a range of positive and negative affective states (or emotions). We can infer how they are 'feeling' from their behaviour, postures, facial expression as well as physiological and immunological parameters. Therefore, an individual animal's experiences or situation will influence its emotional (affective) state, with its behavioural expression considered as the primary and most accessible indicator of its welfare or wellbeing (negative or positive) at that time.

The mental domain focuses attention on the negative and positive subjective experiences (affects) of two main types: those generated by the functional conditions within the equids body, captured by the nutrition, environment and health domains; and those experiences that are associated with the animal's perception of its external circumstances, captured by the behaviour domain.

The four domains all focus attention on situations that contribute negative and positive experiences which all contribute to the outcome represented by the fifth 'mental' domain.

Figure 8: A Good Life for equids related to the four functional provisions promoting positive mental experiences



CASE EXAMPLE **TO ASSESS EQUID WELFARE HOLISTICALLY**

BEHAVIOURAL INTERACTIONS

Racehorses have a high monetary value and usually receive a good standard of care, a high standard of veterinary management and high-quality nutrition. An initial assessment of welfare based on their body condition would conclude that they experience positive welfare and have a Good Life.

However: Daily management of racehorses means that its common for them to be kept for much of their time stabled with limited opportunities for free movement, restrictions on their activities and no social physical contact with other equids. Horses may only be removed from the confinement of their stables/stall for ridden exercise or other forms of exercise such as the 'horse-walker' where they have minimal opportunity to move freely or to have choice around social interactions or their environment.

Nutrition for racehorses is carefully calculated but before races food may be withheld, meaning they can go for extended periods without forage further putting them at risk of poor digestive health. They are often found to have gastric ulceration and particularly when in high intensity training. Restriction and confinement in association with low fibre/high concentrate (grain) diets can lead to the development of various abnormal stereotypic activities that are symptomatic of poor welfare.

Horses involved in sport and racing are frequently transported over long distances in order to participate in sporting events. This can be challenging to provide adequately for their basic social and physical environmental needs. Transport for extended periods is in solitary stalls on a transporter moving over long distances can be stressful and tiring for the equid, and disruptive for normal feeding and watering, as well as exposing the animal to unnatural conditions (air quality, space and lighting) that can pose a health risk with associated negative impacts on their welfare.

Looking at the holistic picture and multiple indicators, including animal-based indicators, demonstrates that the positive experiences for a racehorse do not counterbalance the negative experiences.

When looking holistically at this Thoroughbred Racehorse's life experiences, it is clear he is not living a Good Life, but rather is having only his basic needs met.

Knowledge of the causal sources of different emotional states means that appropriate management of specific provisions can be used to prevent welfare problems before they arise, correct problems as they arise and ensure a 'Good Life' for equids.

Each of the functional domains contribute in different ways to an individual's mental state, with internal factors motivating specific behavioural responses *(see Figure 8).* For example, an internal factor such as thirst will lead to water-seeking behaviours in an equid, and if they are able to find water and quench their thirst, then they will no longer feel thirsty, and will remain in a positive mental state. Problems with an animal's mental state arise if they are unable to respond appropriately to address their internal drive (motivation), meaning that they cannot satisfy their needs. In this situation they will experience negative affective states (emotions) such as thirst, frustration and stress. If this situation is prolonged the equid will become unwell, feel weak and depressed and have compromised welfare.

Enabling equids to address their species-specific behavioural needs by providing appropriate enriched environments, opportunity for positive social (conspecific and human) interactions and ensuring good health and nutrition, will enable them to experience positive affective states (emotions) such as comfort, pleasure, interest, joy, confidence and a sense of control.

Indirect assessment of an equid's mental state is through using animal based behavioural indicators. Indicators of negative states such as fear, stress and pain have received more research attention than those associated with positive emotion, however the research in this area is developing with results that can be used for practical assessment purposes. Whilst the absence of indicators of negative emotion is important this is not enough to conclude that the animal's overall quality of life is good. Indicators of the equid experiencing positive subjective experiences are also necessary.

Equid Emotions

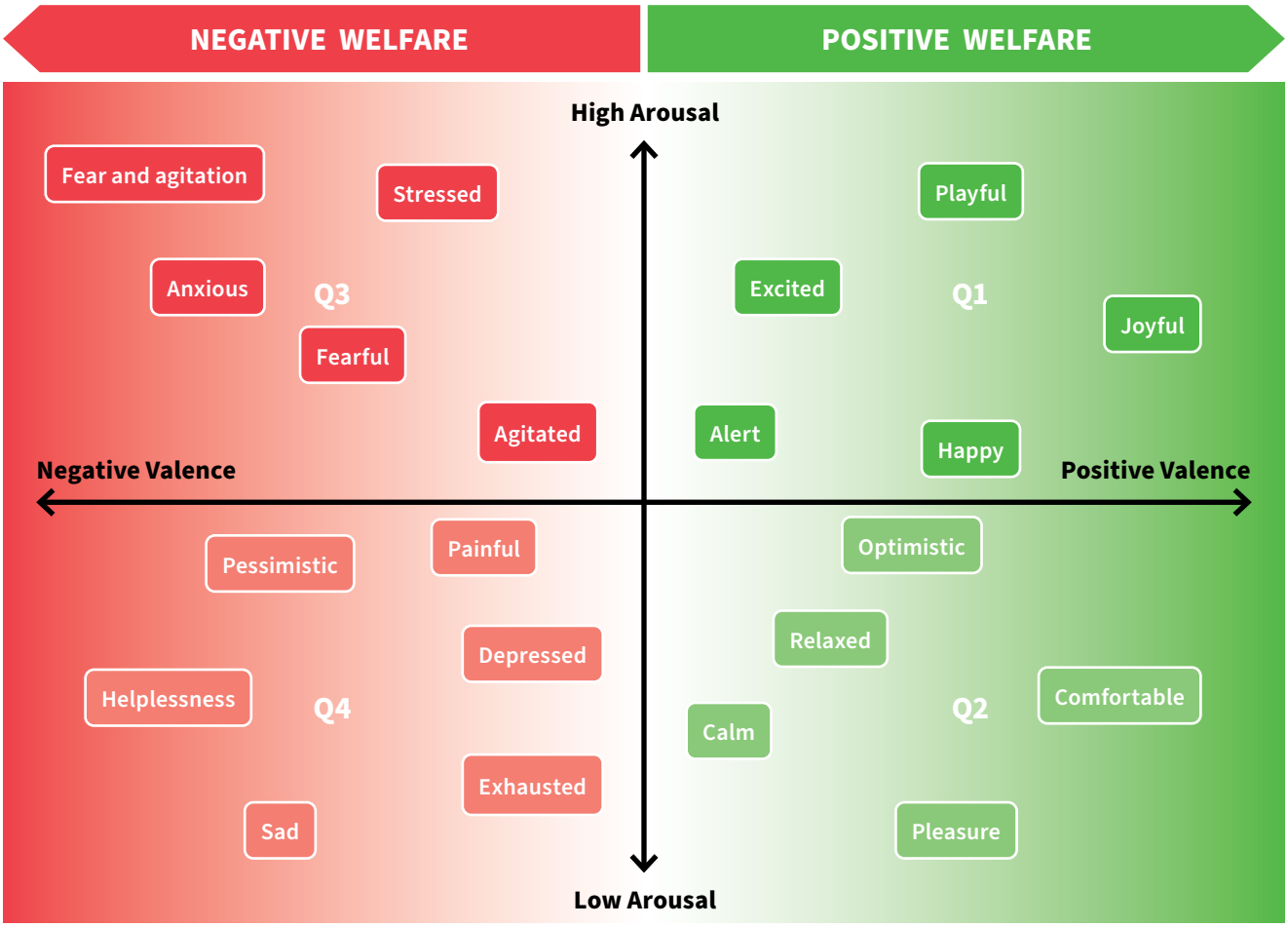
Animals' subjective emotional experiences can be characterised according to valence (e.g. positive or negative, rewarding or punishing, pleasant or unpleasant) and arousal/intensity level (e.g. contentment versus excitement) (Mendl et al., 2010; Paul et al., 2005). The characterisation of equid emotion in terms of level of arousal and valence, based on physiological, behavioural and cognitive indicators, offers a way forward to determine the impact of different situations and experiences on equids throughout their lives. Examples of the types of discrete emotions that have been suggested in animals are pain, fear, anxiety, distress, pleasure, joy, sadness, rage, lust, boredom, pride, guilt, grief, comfort, curiosity, frustration, contentment, and empathy (Stratton, 2022).

The infographic in Figure 9 below organises putative emotional states considered to be experienced by equids based on their level of arousal (how calm or agitated they are) and the emotional valence (whether the emotional state is pleasant or unpleasant for the individual).

By way of explanation, in the top right quadrant (Q1), equids are considered to be in a state of high arousal and also a positive emotional state (valence) experience positive emotions (affect) that human's describe as 'happy' or 'excited', with associated behavioural indicators that are reliably associated with this emotion, whereas low arousal and a positive valence (as described in Q2) will facilitate a relaxed or calm emotional state with associated behavioural indicators (Torcivia et al., 2021).

Equids that are fearful or anxious such as described in the top left quadrant (Q3), where they are in a high state of arousal but in a negative mood state, will show more conflict or stress related behaviours, and those that are in negative mood state and low arousal (Q4) will experience negative emotions such as depression and apathy.

Figure 9: Equid Emotions. (Recreated from Mendl et al., 2010)



To live a 'Good Life', equids need to experience positive welfare as indicated by the behaviours associated with experiencing positive emotions in Q1 and Q2 *(see Figure 9)* in relation to the four functional Provisions of Nutrition, Health, Physical Environment and Behavioural Interactions (with humans and other conspecifics).

Assessing equid mental state using behavioural indicators

The survival advantage of emotional responses relates to the effect that they have on subsequent behavioural motivation determining whether the animal approaches or avoids a stimulus or situation (Hall et al., 2018). Positive emotion is thought to be significant for survival via the acquisition of resources and the maintenance of social bonds (Boissy et al., 2007) and transfer of positive emotion via positive behaviours within groups of equids, enhances group stability.

Emotions are often inferred through the changes in behaviours associated with them. These involve motor action patterns such as those associated with flight and avoidance responses, or approach and investigative behaviour or more subtle signs such as changes in body posture and facial expression, which may be accompanied by vocalisations.

Whilst research related to positive emotion in equids is less advanced than for negative (eg. pain, fear and stress), there has been an increasing focus on the characterisation of behaviours that accompany positive emotions. Understanding equid emotions is essential for ensuring good practice in relation to their health care, management, handing and training and wellbeing.

Hence there is a need to ensure that those responsible for equids can recognise and respond appropriately to evidence based indicators of equid emotion across the four provisions and understand the significance of these for safeguarding their animal's quality of life *(see Figure 10)*.

Behavioural Indicators of a positive mental state include:

- Relaxation behaviours including resting and lying down for REM sleep,
- Comfort behaviours including rolling, mutual grooming and 'loafing'
- Pleasure activities including affiliative behaviour between conspecifics, playfulness, and seeking human interaction
- Showing interest and engagement in the environment
- Joyful behaviour including play (excluding rebound behaviour).

The significance of these behaviours for a positive emotional state are as follows:

Relaxation: Sleep and rest

Rest and sleep are important factors in maintaining equid wellbeing and animals should be provided with suitable locations and substrates to allow them to sleep lying down comfortably. This facilitates rapid eye movement (REM) sleep, which is required daily and can only be done when lying down. Animals in groups often take turns to sleep, with other group members keeping watch for danger. Having communal areas when turned out or when brought inside can facilitate this. Rest and/or sleep is required after exercise, transportation and after a stressful event.

Comfort behaviours: Mutual grooming

Comfort or being comfortable can be expressed in a variety of ways in equids and includes any form of self-enjoyment expression, from standing resting with other conspecifics in the group, to mutual or allo-grooming, rolling, scratching, yawning and stretching. Social cohesion is essential for survival and energy is expended when conditions allow for them. These behaviours have direct functions of coat or skin health, practice of behaviours such as playfighting, and ensuring access to mates. For a social species, the positive experience of mutual grooming (pleasure) will serve to positively reinforce it, not only strengthening group cohesion and pair bonding but also with long-term health benefits such as helping to keep the skin and coat clear of external parasites. Comfort behaviours are therefore essential for equid development and ensuring their physical, social and mental wellbeing.

Pleasure activities: Affiliative behaviours

In equids, social play, social grooming and social proximity have all been suggested to represent affiliative behaviours that facilitate group cohesion and bonding. Social grooming is usually expressed with preferred partners and often occurs between familiar horses and where it occurs it can be considered to be indicative of a positive experience. Voluntary social proximity has been suggested to be a better indicator of positive welfare (Zeitler-Feicht et al., 2024) since this occurs in all equids regardless of sex, breed, social situation or age group.

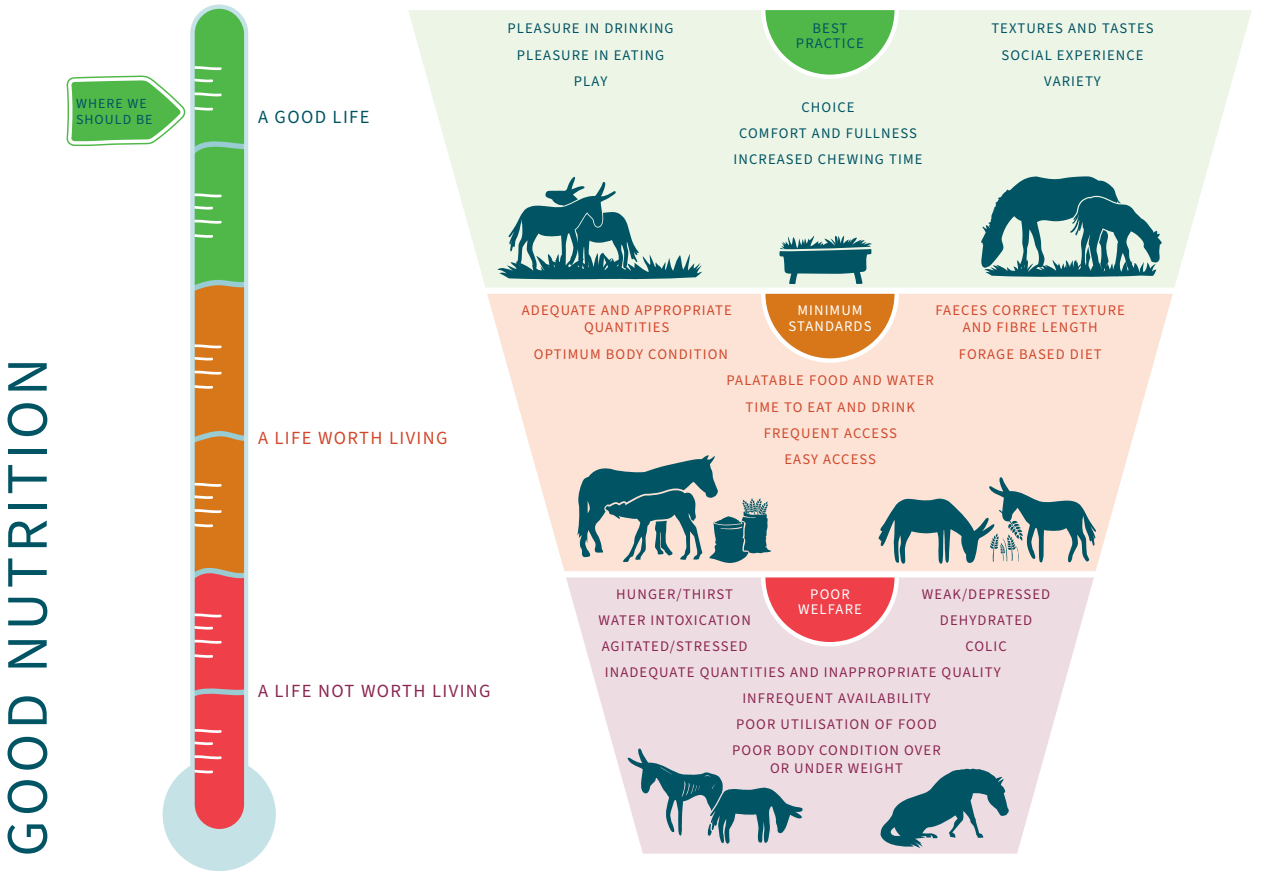
Engagement: Interest in environment

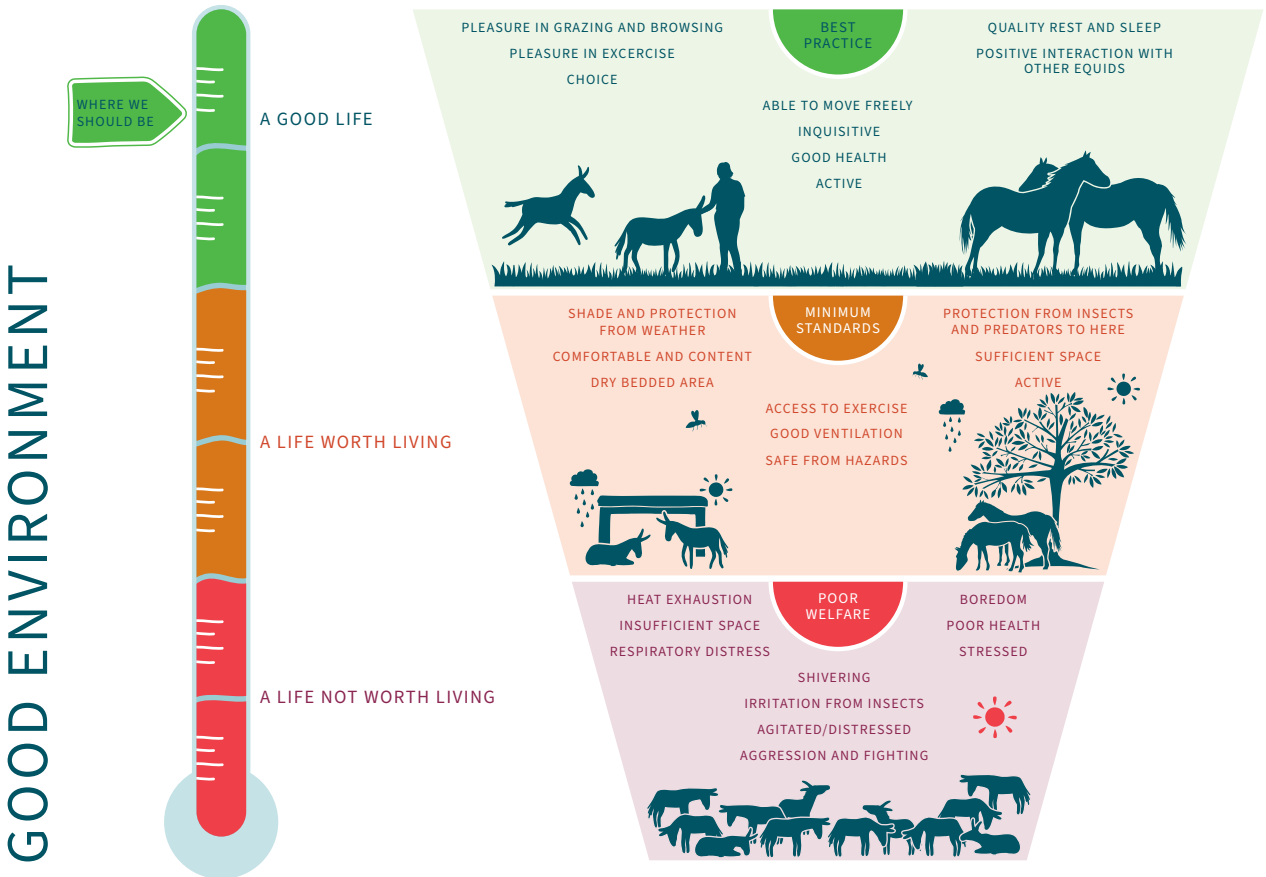
Under optimal conditions, free living equids will engage in behaviours that are rewarding such as being active and exploratory (Harvey et al., 2023). Such behaviours acquire information about the environment, ensuring group cohesion and for safety. These include; showing interest in, and active interactions with, a stimulus-rich environment, engaging in selective foraging and seeking social interactions with other equids and familiar humans. Where equids are maintained in suboptimal social and/or physical environments there will be lack of opportunity for these behaviours to be performed, and in some cases this will lead to negative emotional states such as frustration and even depression.

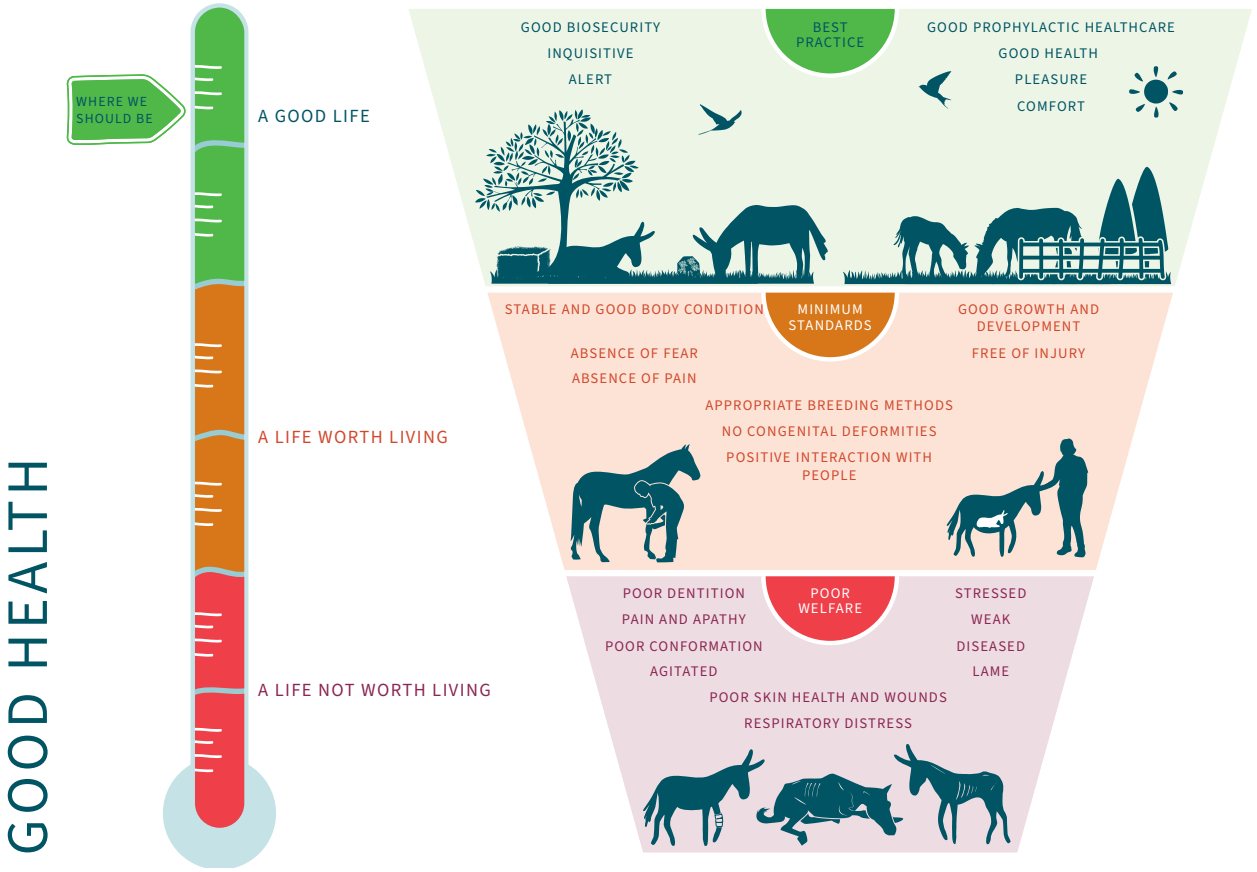
Joyful behaviour: Play

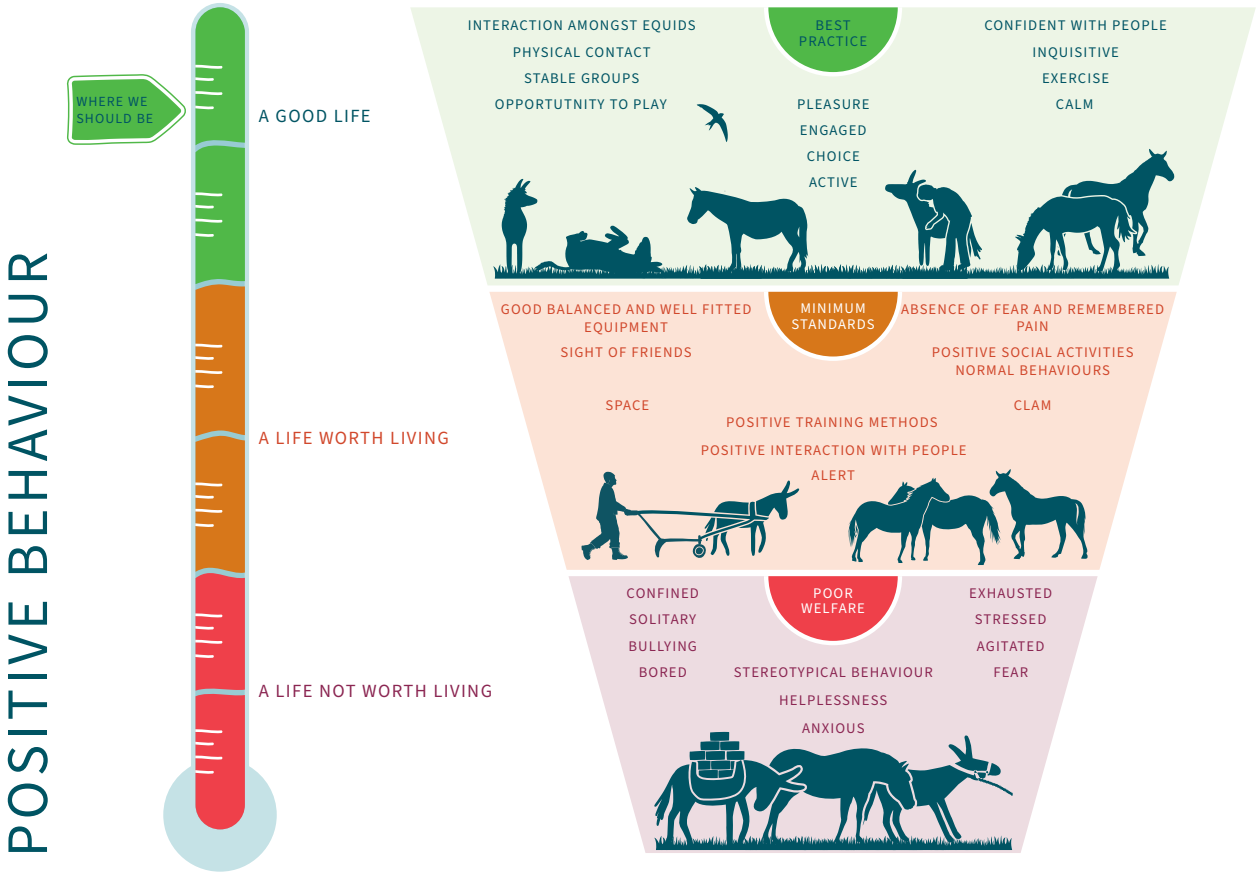
Play behaviour has been described as an activity that has no immediate specific function to the animal but one that is associated with pleasure (McFarland, 1993). It is thought that animals play predominantly when their basic needs are met. The occurrence and development value of play behaviour in young horses is well documented (Crowell-Davis, 1987). The prevalent view is that the social or solitary play of equids may reflect good welfare (Boissy et al., 2007). However, it has also been suggested that play behaviour in animals in restricted environments could be associated with chronic stress (Hausberger et al., 2012). Another explanation could be that what appears to be 'normal' equid play activities under certain circumstances may instead be 'rebound' behaviour, which occurs where behaviours whose expression has been limited (for whatever reason) occur more frequently when conditions change. This increased motor activity and raised levels of arousal observed in equids following a period of confinement (Freire et al., 2009) is evidence of restrictive management practice compromising equid behavioural needs. To determine whether observed play behaviour is a good measure of positive welfare, a holistic assessment of the housing conditions (e.g., space allowance, feeding management) is necessary.

Figure 10: Recognition of achieving a 'Good Life' for equids in relation to the 4 functional provisions






GOOD HEALTH
WHERE WE SHOULD BE
A GOOD LIFE
A LIFE WORTH LIVING
A LIFE NOT WORTH LIVING
BEST PRACTICE
GOOD BIOSECURITY
INQUISITIVE
ALERT
GOOD PROPHYLACTIC HEALTHCARE
GOOD HEALTH
PLEASURE
COMFORT
MINIMUM STANDARDS
STABLE AND GOOD BODY CONDITION
ABSENCE OF FEAR
ABSENCE OF PAIN
GOOD GROWTH AND DEVELOPMENT
FREE OF INJURY
APPROPRIATE BREEDING METHODS
NO CONGENITAL DEFORMITIES
POSITIVE INTERACTION WITH PEOPLE
POOR WELFARE
POOR DENTITION
PAIN AND APATHY
POOR CONFORMATION
AGITATED
STRESSED
WEAK
DISEASED
LAME
POOR SKIN HEALTH AND WOUNDS
RESPIRATORY DISTRESS


POSITIVE BEHAVIOUR
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SIGHT OF FRIENDS
ABSENCE OF FEAR AND REMEMBERED PAIN
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NORMAL BEHAVIOURS
SPACE
CLAM
POSITIVE TRAINING METHODS
POSITIVE INTERACTION WITH PEOPLE
ALERT
POOR WELFARE
CONFINED
SOLITARY
BULLYING
BORED
EXHAUSTED
STRESSED
AGITATED
FEAR
STEREOTYPICAL BEHAVIOUR
HELPLESSNESS
ANXIOUS

7.
Good Welfare: Specific risks and mitigations within the different sectors?

The most common of the additional issues that are unique to each of the sectors are discussed here, along with the positive actions that should be taken to aim for a 'Good Life' for all equids whatever the purpose for which they are kept. The factors included are not exhaustive but are necessarily restricted to those thought to be the most important or most common.

7.1
PRODUCTION

This includes, but is not restricted to, the commercial production of meat, milk, pharmaceuticals, skin and other products and also the 'farmed' breeding of equids for sale.

Specific risks

The most common concerns about the provision of a 'Good Life' for equids in production include lack of social stability due to regular regrouping of equids, intensive management and restrictive environments, reduced frequency of opportunities for feeding and grazing (chewing time), the challenges of preventive health care across large groups of equids, problems with identification of early signs of disease, biosecurity risks, reduced opportunity for uninhibited or free exercise and the specific health & welfare implications related to blood, serum and urine collection and the injection of antigens for the production of antibodies.

Infectious disease transmission is a high risk in farming with restocking from a variety of sources, commonly with lack of ID and traceability and a lack of knowledge of the disease status at the location of origin of the equids. Any disease is likely to be missed until it is already established and will have spread between groups.

Unstable social groupings due to constant regrouping, especially where there is no consideration of social interaction or observation for signs of aggression or agitation, will result in high levels of stress, increasing the risk of disease and reducing productivity.

Traditional feeding practices are often used where equids are farmed which may not provide for the normal feeding requirements of equids in relation to frequency, amount and fibre content. The resulting negative effect on their digestive health will also make them more vulnerable to gastro-intestinal discomfort, disease and reduce productivity.

Long distance transport of equids unfamiliar with transport will cause stress and increase the likelihood of dehydration, weight loss, injury, transport-related disease and escalation of any infectious disease or possible death.

Farming of horses for the production of pharmaceuticals does not provide for a 'Good Life' and even achieving minimum welfare standards is challenging.

Specific health risks related to collection of blood are pathological effects, such as possible anaemia or shifts in other blood parameters. Guidelines exist concerning the volume and frequency of blood collection but are seldom followed. The production of polyclonal antibodies requires multiple injections of antigens, which can lead to low-grade fevers, abscesses, and local injection site inflammation may result because of the necessary use of adjuvants, in addition to direct side effects from venom injections. In addition, the equid may experience negative emotions such as stress, fear, panic, pain and suffering caused by the methods of handling and restraint and negative interaction with people.

Mitigation

Recognition of sentience and the specific needs of the equid must be considered in any legislation for farmed animals.

Biosecurity can be improved with the use of quarantine facilities for newly introduced equids, alongside improved traceability and identification and with increased global surveillance. A biosecurity plan for the site, that all staff are aware of and follow, is best practice.

Husbandry and management practices need to limit regrouping, consider the needs of individuals, reduce competition for feed, water and space and be aware of bonds existing between individuals. Increased time and frequency for access to food, correct diet for stage of production and high percentage of fibre will maintain good gut health.

Training and familiarisation can reduce stress and fear, but this must be early in the life of the equid, gradual and appropriate (Vilanova et al., 2021).

Those equids used for the collection of blood should undergo early and appropriate habituation to people as well as training to minimise future distress during handling, moving to and from collection sites, application of apparatus, and collection procedures.

Guidelines state that a horse used for blood collection must **not be pregnant or lactating**, have a body weight greater than 400kg, be more than 3 yrs old and blood must not be taken at quantities greater than 1.5 litres for every 100 kg body weight every 30 days (Federal Office of Consumer Protection and Food Safety, n.d.).

See Appendix 3 for more information on the collection of blood and Appendix 6 for specific information on eCG/PMSG production.

7.2
WORK, INCLUDING TOURISM

This includes, but is not restricted to, equids working in; agriculture and forestry, waste management, sanitation and construction, services such as military and police, tourism, cultural and entertainment events.

Specific risks

The most common concerns about the provision of a 'Good Life' for equids used for traction or pack/carrying in agriculture, forestry, construction and other similar functions includes; long working hours with limited rest periods, over-loading, unfit harnesses, poor foot health, recurring wounds and injury.

Working equid activities are often unregulated and working equids deprived of access to healthcare for reasons of geographical availability, time away from work to seek help and lack of money to fund professional support.

Working equids often work for long periods with no shade or shelter from extreme temperatures and weather. They may be restrained during rest periods with no shelter or access to food and water and with harnessing still in place.

Equids used for entertainment and cultural events may experience frequent and long journeys, the changing styles and techniques of unknown riders, exposure to noise, frightening (light) effects and crowds of people, with no choice regarding interaction with those people. Accommodation on site is mostly improvised, stable tents with small boxes, hardly any opportunity for free movement, lack of retreat options.

Working equids used by the military or police are unlikely to have the same concerns and it is likely that there will be guidelines for good welfare for these equids. However, the main concern for these animals is the restrictions on behaviour related to human interaction as well as the nature of the work required of them which will expose them to potentially frightening and stressful situations such as is the case with crowd control, military parades, conflict and public demonstrations.

Mitigation

Recognition of the value of working and service equids to people, communities and countries is paramount to improving their welfare and ultimately their Quality of Life. Working life should not commence until 3 years of age, and never earlier than 2 years of age (World Organisation for Animal Health., 2024).

Providing for their social, physical and behavioural needs and the provision of good husbandry practices requires programmes of education and training for those responsible for their care.

Access to affordable quality healthcare is necessary to ensure animals are fit for the work required of them and so that they experience the benefits of an effective programme of routine care.

Rest periods must be provided and at intervals that are appropriate to the workload, climate and health of each animal.

Equids should work a maximum of 6 hours per day and should be given at least 1 full day's rest in a 7 day period. Best practice is for a minimum of 2 days' rest per week, but this is also dependent upon workload and the individual's health, age, size and training. Breaks should be given every 2 hours during the working day and shade/shelter and water provided in relation to weather conditions and individual requirements(World Organisation for Animal Health., 2024).

Dry and comfortable ground should be available to enable animals to lie down for rest/sleep, and harnessing should be removed if it is restrictive to the ability to rest or thermoregulate.

Exposure of equids to stressful and frightening situations, such as those experienced by equids used by the military or police, or those participating in traditional festivals and parades, can be managed by training and desensitisation but will never be completely acceptable to the equid. Justification for exposing equids to fear and risk of injury needs to be assessed, including their use in ceremonies.

7.3
SPORTS AND RACING

This includes, but is not restricted to, athletic and performance purposes such as racing (over jumps or on the flat), dressage, eventing, showjumping, showing, polo, carriage racing, endurance, and vaulting.

Specific risks

The most common welfare issues for equids kept for equestrian sports and racing are related to the intensive management and training approaches, the knowledge and skill of the rider and trainer, the level of performance and workload and impact on the equid, the number and duration of journeys necessitated by attendance at sporting events, and the restricted social and physical environment.

Health issues are a risk where periods of rest and recovery are not adequate for the strenuous athletic demand required of the equid during events.

There is a high risk of gastro-intestinal disease, particularly gastric ulceration, causing pain and discomfort as a result of high levels of stress and/or inappropriate management and nutrition.

Confinement with little or no opportunity for social interaction with other equids and to move freely can cause stress and frustration and may result in the equid displaying stereotypic behaviours or a rebound effect or experiencing musculoskeletal problems.

Incorrect training methods, inhumane equipment and the demands of performance at too high a level may cause injury or poor development and must be appropriate for age, stage of life and physical ability.

Highly invasive medical procedures may be performed to enhance or enable performance or as a preventative measure and welfare-compromising drugs may be administered to prolong performance or working life.

Mitigation

There is a strong belief across the sporting sector that many equids enjoy the experience of being involved in sport but there is limited evidence to support this.

Sports regulators from across the board have developed, or are developing, evidence-based guidelines that prioritise and safeguard the welfare of the equids involved. Development of these guidelines is both caused by, and is the cause of, greater prioritisation of welfare for equids involved in sport. However, it is important to remember that many of these requirements only protect equids during competition and training and that all guidance requires regular updating to ensure that it always encompasses the latest knowledge and science.

Although these standards are not in place for every sport, it is important that where they do exist, they are recognised and implemented.

Welfare considerations that prioritise the welfare of equids involved in sport are becoming more visible, but it is important to emphasise that many of these requirements only protect equids during competition and training.

Appropriate rest periods between a journey and any athletic demand must be in place, as well as adequate periods following intense exercise before further travel.

Guidelines for the provision of food and water immediately before or after performance must follow the latest scientific evidence in order to reduce gastrointestinal problems.

Consideration of social licence will encourage better welfare, provision of social interaction with other equids and free movement, and the consideration of climate change and the carbon footprint associated with large sporting events may lead to a reduction in the number of journeys and miles travelled.

7.4
LEISURE

This includes, but is not restricted to, recreational activities for people: equid-assisted activities, riding, trekking, as companions (for humans or other equids) and for use in local competitions, races, religious festivals and events. Also, those equids kept as non-ridden companions on private land and those kept for recreational purposes on public land.

Specific risks

The most common risks to the equid's welfare in this sector are caused by a lack of owner knowledge of husbandry and health requirements as well as a limited understanding of equid behavioural needs, or indeed, how to interpret that behaviour. Cost of treatment, medication and routine health care will also have an impact with some equids suffering pain longer than necessary because of owner reluctance to contact healthcare professionals at an early stage. This may also lead to the use of improper farriery and hoof care, irregular dental care and improper tack fitting, causing health issues for the equid.

Welfare can also be compromised through lack of understanding of a horse's ethological needs for social interaction, forage-based diet and ability to move/free exercise via turnout/living out, with many livery yards and private yards comprising individual stabling with a lack of social interaction, restricted movement and the lack of provision of a suitable amount of forage.

Constantly changing riders, using different styles or techniques will cause stress and confusion, particularly when the rider is inexperienced, nervous or forceful.

There is little or no opportunity for choice, especially with regard to interaction with people.

Accommodation at local shows and events is mostly improvised, stable tents with small boxes, hardly any opportunity for free movement and a lack of retreat options.

Many leisure horses may also suffer from compromised welfare due to poor end-of-life decisions and delayed euthanasia.

Mitigation

Where possible, all horses whether companions, ridden leisure horses or sport horses should have robust routine health care plans based on the 'whole horse approach' supported by a range of qualified allied professionals.

Professional healthcare providers need to support owners in end-of-life decisions and there is a need for consistency across the professions in communicating requirements for good welfare.

Robust education programmes must be built within countries and made accessible and affordable to all owners and keepers of equids. We would aspire, in the longer term to implementing a compulsory programme for all owners of equids. Training should include, but not be restricted to: equid behaviour and their social, physical and nutritional needs, as well as an understanding of appropriate handling and training techniques.

7.5
RESCUE AND RETIRED EQUIDS

This sector deserves specific mention as the requirements for good welfare for these equids will have some differences from others in; nutrition, behaviour, handling, husbandry and health.

Equids in this sector need extensive behavioural and clinical intervention, they may have been abandoned or experienced poor welfare leaving them experiencing pain and fear.

An end-of-life decision tree should be used. There is value in regulating centres that rescue or keep retired equids, either by licensing or by regular inspection to ensure that these differences are catered for.

8.
Our call for action

The current EU legal framework fails to provide minimum requirements for the care and welfare of Equids. Directive 98/58/EC lays down standards for farm animals, but explicitly excludes animals intended for use in competitions, shows, cultural or sporting events or activities. There are an estimated 7 million equids in Europe (European Horse Network, n.d.) and they play significant roles across a variety of sectors from leisure, sport and entertainment to production, service and as working animals.

They are sentient beings with an intrinsic value, and although they are not equal in their economic value to people, the same welfare framework should be applied to all, to provide them with a good quality of life. This includes the ability to enjoy physical, mental and emotional well-being according to their species-specific needs and within practical parameters, whilst aspiring to achieve best practice guidelines so that all equids across Europe live a 'Good Life'.

Specifically, we propose there should be:

1.

Revised European animal welfare legislation to address key concerns with regards to the keeping and care of equids, regardless of their monetary value, that takes into account their species-specific needs and, therefore, has equid species-specific provisions.

2.

Recognition of the important role that all equids play across Europe, and;

- That all equids are equally significant, having an intrinsic value, whatever is the purpose for which they are bred or kept at that time.
- That all equids irrespective of their original purpose are susceptible to be traded/placed on the Union market.
- There should therefore be an equal approach to ensure good welfare and aspiration to provide a 'Good Life' for all equids across Europe.

3.

An agreed single, specific definition of "Equidae" stated within core EU legislation related to animal welfare and related policies.

4.

A focus on positive welfare with requirements for equid sectors to demonstrate minimum welfare standards as outlined in this paper, and support where required to attain best practice standards of welfare, to enable equids to live a 'Good Life'.

5.

A call for improved data through the development, dissemination and analysis of a survey of all equid-related sectors across European countries to improve understanding of the size and nature of the European equid population, and in different industry sectors, with results publicly communicated.

6.

Implementation and enforcement of EU legislation to address equid welfare needs, including welfare assessments undertaken by competent authorities, and requirements for the provision of services to accommodate welfare needs.

7.

A consistent robust, practical and enforceable approach to Identification and Traceability for all equids across Europe and the shift to a single fully digitalised identification and registration system for equids in the EU that allows full traceability of individual equids throughout their lifetime and ongoing surveillance of the European equid population

8.

Investment in more research to address identified gaps in knowledge in collaboration with academic institutions and industry, particularly the assessment of positive emotions in equids.

9.

Development of a uniform educational framework for the promotion of good equid welfare and best practice to industry, regulators and equid keepers in Europe.

10.

Prohibition on the production, use and importation into Europe of eCG/PMSG derived from equids.

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Appendix 1:
Resource based requirements for Good Nutrition

Maintenance requirements for food

(National Research Council (U.S.). Committee on Nutrient Requirements of Horses., 2007)

These must be adjusted for the growth, pregnancy, lactation, high and low temperatures and workload of the equid.

REQUIREMENTS	**HORSES** (Coenen & Vervuert, 2019; National Research Council (U.S.). Committee on Nutrient Requirements of Horses., 2007)	**DONKEYS** (The Donkey Sanctuary, n.d.-b)
Daily requirement for digestible energy (MJ per 100kg body weight (BW) per day)	13.89 MJ	8 - 9.5 MJ
Daily dry matter intake (kg per 100kg body weight per day)	2 kg – daily provision of long stem forage to include straw and to satisfy the need to chew	1.3 - 1.7 kg – preferably a low energy forage less than 7 MJ/kg
Daily requirement for Crude Protein (g/100 kg BW)	126 g	40g – provided by most fodders without the need to supplement
Frequency	Allow access to forage for 16 – 20 hrs/day. *No longer than 4 hour period without access to food (Baumgartner et al., 2020).*	Allow access to forage for 14 – 18 hrs/day *Opportunity to browse*
Special considerations for Growth	Provide Calcium and phosphorus at a ratio of 2:1 in the growing equid.	Provide Calcium and phosphorus at a ratio of 2:1 in the growing equid. *Male Mules may continue growing until 7-8 years of age*

Fibre length in the faeces is indicative of dental disease and reduced chewing.
The average faecal fibre length in a donkey is under 2mm with lengths greater than 3.6 mm indicating dental dysfunction.

Minimum requirements for water

These must be increased according to hot temperatures, high productivity (including pregnancy and lactation), stage of life and diet (water intake is related to the type and amount of forage which is offered)

REQUIREMENTS	**HORSES** (Coenen & Vervuert, 2019; National Research Council (U.S.). Committee on Nutrient Requirements of Horses., 2007)	**DONKEYS** (Martin-Rosset, 2018b)
Minimum daily water consumption (Litres/100kg BW)	5 up to 9 in hot conditions	5 up to 9 in hot conditions
Frequency	Offered at least 3 times a day until saturation is reached (McDonnell et al., 1999). *Able to rehydrate quickly.*	Several times per day *Drought resistant and can rehydrate quickly and drink large volumes (20 – 30 litres) in a short period of time*

NOTE: Ponies will have similar requirements to a horse for their diet and water. There is little data for Mules, but their requirements should be considered as similar to the Donkey.

Appendix 2:
Resource based requirements for a Good Physical Environment

Minimum requirements for the environment provided for the equid

These will need to be increased according to size of the equid, time spent in the shelter, number of equids in the shelter and stage of life

REQUIREMENTS	HORSES (Baumgartner et al., 2015; British Horse Society, n.d.; Hartmann et al., 2015)	DONKEYS (The Donkey Sanctuary, n.d.-b)	ANIMAL-BASED INDICATORS
Bedded space for lying down and resting	**Large horses** (17 hh+): 3.65 x 4.25 m **Horses:** 3.65 x 3.65 m **Large ponies** (13.2 hh+): 3.05 x 3.65 m **Ponies:** 3.05 x 3.05 m **Foaling box** (horse): 4.25 x 4.25 m	Minimum of 4.7 m^2 of bedded space per donkey. (Minimum of 9.4 m^2 for a mule)	There should be a dry and clean bedded area of a size that allows equids to perform rolling behaviour without risk of injury or becoming cast. It must be sufficient to allow all equids in the group to lie down at the same time.
Height	The clear space above normal head position of a horse should exceed 1 metre. *Miniature ponies need a stall partition and door height that will allow them to look over the top.*	Minimum of 2 m and allowing the donkey to rear without hitting their head. Donkeys need the height of stall partitions and doorways to below enough to allow them to look over the top.	There should be a clear space above the head to allow for rearing and for good ventilation.
Doorways	A minimum of 1.25 m wide.	Minimum of 1.2 m width.	Wide enough for the equid and handler to move through easily. It may be appropriate for more than one doorway.
Passages	Alleyways in stables and barns should be wide enough to allow equids to be turned around in comfort.		
Feeders	Provide a distance of approx. 4 x Wh between two feed racks (Baumgartner et al., 2022). For hay racks with feed-through grids, the space-to-animal ratio should be 3:1.	Provide a minimum width of 0.75 m (2'5") per donkey in the group for feeding from a trough. *Hardstanding in front of feeders will promote good foot health.*	Preferably feed at floor level but height of the edge must not obstruct the windpipe as they eat. Feed racks and hay nets on the wall are not suitable.
Water troughs	In group housing: · 1 automatic water basin per 15 horses · 1 trough drinker per 20 (Coenen & Vervuert, 2019) horses · Troughs with a capacity of less than 5 litres need a water flow rate that is at least 8 litres per minute. (Nyman & Dahlborn, 2001)	An approximate height of 50 - 60 cm from the floor to top edge.	
Fencing and containment	1.25 m high	*Mules will need higher fencing than donkeys.*	Strong enough and of sufficient height to prevent equids from escaping.

Appendix 3:
Resource based requirements for Good Health

REQUIREMENTS	HORSES (Coenen & Vervuert, 2019)	DONKEYS (The Donkey Sanctuary, n.d.-b)
Foot health care plan frequency and procedures	Routine foot care should be every 4 – 8 weeks.	
Oral examination	Routine dental care should be every 9 – 12 months unless appropriate to be more frequent.	
Clinical parameters	**Temperature:** 37.5 - 38.5 C **Pulse:** 36 – 42 beats per minute **Respiration:** 8 – 16 breaths per minute	**Temperature:** 36.5 – 37.8 C **Pulse:** 36 – 52 beats/minute **Respiration:** 12 – 28 breaths/ /min – usually 20 breaths/min
Minimum age for 1st breeding	Horses reach reproductive maturity around 12 months of age but it is generally advised not to breed before 3 years of age to allow the mare to reach full physical development.	
End of Life	It is generally thought that a horse that loses a close companion ideally should be given an opportunity to explore, sniff and spend a period of time with the body.	Donkeys require time with a bonded companion that has died or been euthanized and must be observed for signs of grieving, inappetence and resultant hyperlipaemia.
Collection of blood for pharmaceuticals (Federal Office of Consumer Protection and Food Safety, n.d.)	· No more than **15 ml per kg of body weight** (1.5 l/100 kg) blood to be collected with **30 days** between collections and horse **must not be pregnant or lactating**. · The donor animal must be at least 3 years old. · The body weight of the donor animal should be over 400 kg. · The donor animal must be clinically healthy. · The donor animal must be properly vaccinated (tetanus, influenza, equine herpes virus, rabies).	

NOTE: In the course of producing polyclonal antibodies, horses receive multiple injections of antigen(s), for example, 50–200 uL/site over multiple sites, and low-grade fevers, abscesses, and local injection site inflammation may result because of the necessary use of adjuvants, in addition to direct side effects from venom injections (Vilanova et al., 2021). More refined adjuvants might reduce these side effects, but because these are low volume industries there is no current incentive to implement refinements.

Appendix 4:
Resource based requirements for Behavioural interactions

Minimum requirements for the workload and training of the equid

These will need to be considered according to the equid's age, amount of time carrying the load, intensity of effort, ground conditions, any slopes and weather conditions. The size, body condition and fitness of the equid must be taken into account and the riding ability of any rider.

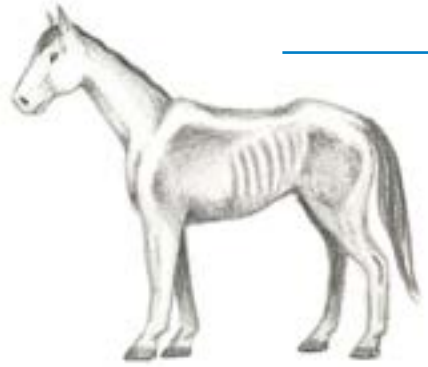
REQUIREMENTS	HORSES	DONKEYS
Working times	A maximum of 6 hrs per day, with at least one full day's rest per week, preferably two.	
Rest periods	Every two hours.	
Weight carrying	No more than 20% of body weight (Benton et al., 2007; Dyson et al., 2020; Halliday & Randle, 2013; Stefánsdóttir et al., 2017). *No more than 15% of the horse's body weight where the horse is old, young, untrained horses or has health problems.*	No more than 33% of their body weight. *A rider on a fit, larger than average donkey should be a maximum of 50 kg and must be able to stay balanced and react to the movements of the donkey.*
Weight pulling	Weight for carriage pulling: (Association of Leisure Riders and Riders in Germany e.V., 2019) · For up to 3 hours on level ground = a carriage up to 3 times the weight of a team of horses · For up to I hour on mountainous terrain (permanent 4% to occasional 15% gradient) or on very (poor) natural paths = a carriage up to the weight of the team of horses. · For up to 1 hour on flat terrain with poor roads, or mountainous terrain with good rads and an occasional maximum gradient of 15% = a carriage up to twice the weight of a team of horses	
Training - age	Dependant on the breed, physical and mental development of the horse and the intended training and not earlier than 30 months of age. Targeted training such as free jumping is not developmentally appropriate for foals and yearlings.	A minimum of 3 years.

Appendix 5:
Body condition scoring tools

Systems for body condition scoring may use a range of 1 – 9 (such as the Henneke system), 0 – 5 (such as that described by Carroll & Huntingdon) or 1-5 (such as the one produced by The Donkey Sanctuary below).

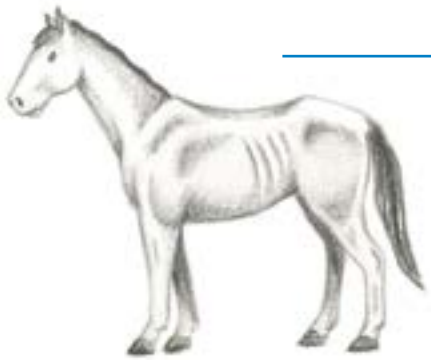
1 POOR

Horse extremely emaciated. Spinous processes, ribs, tailhead, tuber coxae and ischii projecting prominently. Bone structure of withers, shoulders and neck easily noticeable. No fatty tissue can be felt.



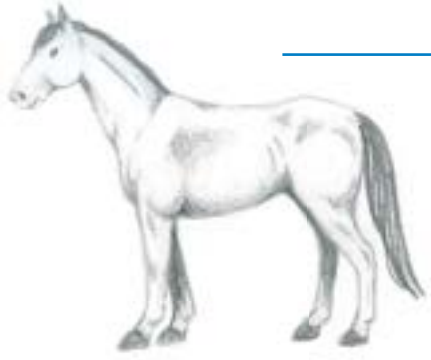
2 VERY THIN

Horse emaciated. Slight fat covering over base of spinous processes, transverse processes of lumbar vertebrae feel rounded. Spinous processes, ribs, tailhead, tuber coxae and ischii prominent. Withers, shoulders, and neck structures faintly discernible.



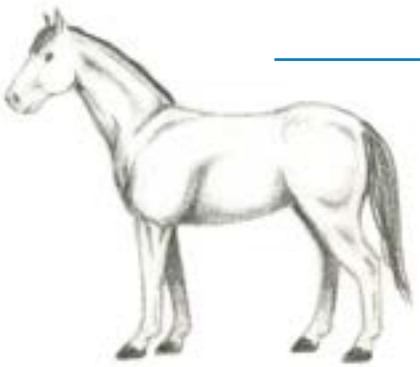
3 THIN

Fat build up about halfway on spinous processes, transverse processes cannot be felt. Slight fat cover over ribs. Spinous processes and ribs easily discernable. Tailhead prominent, but individual vertebrae cannot be visually identified. Tuber coxae appear rounded, but easily discernible. Tuber ischia not distinguishable. Withers, shoulders and neck accentuated.



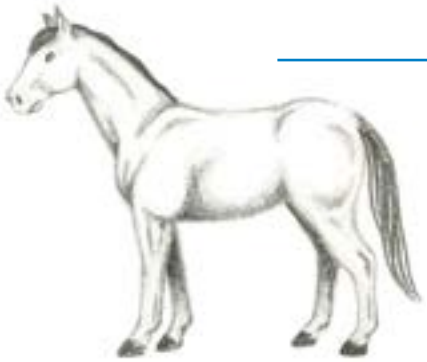
4 MODERATELY THIN

Negative crease along back. Faint outline of ribs discernible. Tailhead prominence depends on conformation, fat can be felt around it. Tuber coxae not discernible. Withers, shoulders and neck not obviously thin.



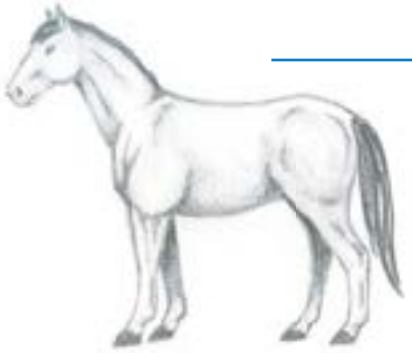
5 MODERATE

Back level. Ribs cannot be visually distinguished but can be easily felt. Fat around tailhead beginning to feel spongy. Withers appear rounded over spinous processes. Shoulders and neck blend smoothly into body.



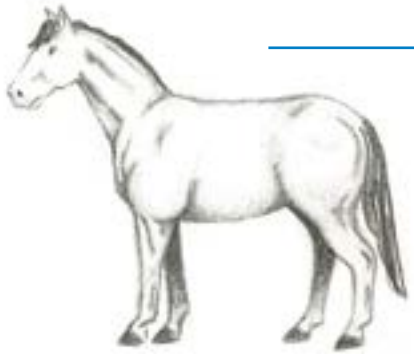
6 MODERATELY FLESHY

May have slight crease down back. Fat over ribs feels spongy. Fat around tailhead feels soft. Fat beginning to be deposited along the side of the withers, behind the shoulders and along the sides of the neck.



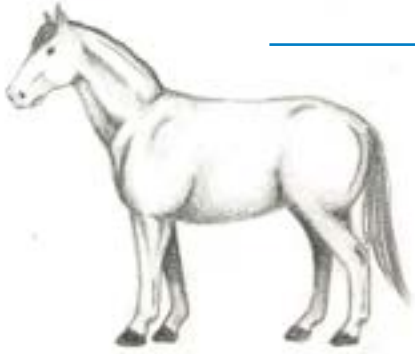
7 FLESHY

May have crease down back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Fat deposited along withers, behind shoulders and along neck.



8 FAT

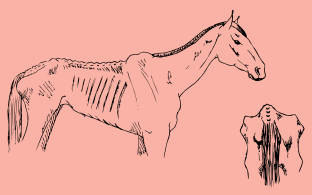
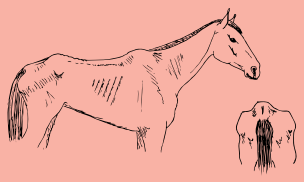
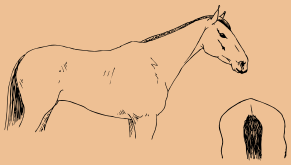
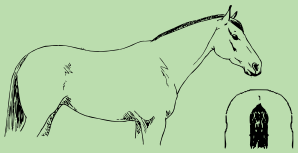
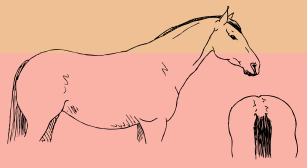
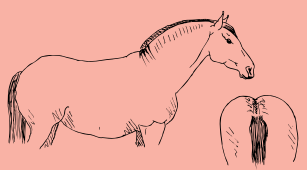
Crease down back. Difficult to feel ribs. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulder filled with fat. Noticeable thickening of neck. Fat deposited along inner thigh.



9 EXTREMELY FAT

Obvious crease down back. Patchy fat appearing over ribs. Bulging fat around tailhead, along withers, behind shoulders and along neck. Fat along inner thighs may rub together. Flank filled with fat.

BODY CONDITION SCORING CHART (Carroll & Huntingdon)

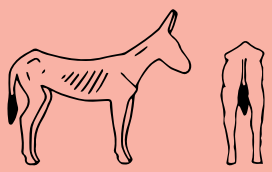
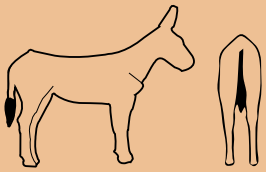
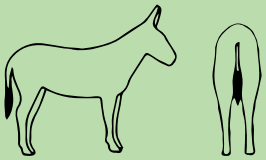
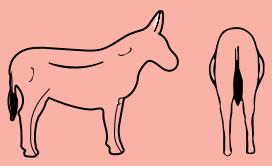
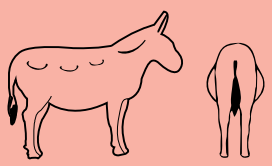
0. Emaciated 	• Marked 'ewe' neck, narrow and slack at base. • Skin tight over the ribs, which are clearly visible. • Spinous processes sharp and easily seen. • Angular pelvis, skin tight, very sunken rump. • Deep cavity under tail and either side of croup.
1. Poor 	• 'Ewe' neck, narrow and slack at base. • Ribs clearly visible. • Skin clearly shrunken either side of spine – spinous processes well defined. • Rump sunken but skin supple, pelvis and croup well defined, cavity under tail.
2. Moderate 	**Normally ideal for a fit racehorse or eventer.** • Neck narrow but firm, shoulder blade clearly defined. • Ribs just visible. • Spine well covered – spinous processes felt but not seen. • Rump flat either side of spine, croup well defined, some fat, slight cavity under tail.
3. Good 	**Normally ideal for most show and leisure horses** • Firm neck, no crest (except stallions), shoulder blades defined. • Ribs just covered, easily felt. • No gutter along back – spinous processes covered but can be felt. • Pelvis covered by fat and rounded, no gutter, pelvis easily felt.
4. Fat 	• Slight crest on neck, wide and firm. • Ribs well covered. • Gutter along spine to root of tail. Fat stored either side of the spine to form slight 'apple bottom', with a gutter down the middle. • Pelvis covered, felt only with firm pressure.
5. Obese 	• Marked crest, very wide and firm, creases of fat. Shoulder blade buried and difficult to feel. • Ribs buried, cannot be felt. • Deep gutter along spine, back broad and flat. Deep gutter to root of tail, producing marked apple bottom, skin distended. • Pelvis buried, cannot be felt.

The Horse and Pony (Henneke system)

Donkey

Donkeys must be scored for body condition using a specific tool, use of the Horse BCS is not appropriate.

BODY CONDITION SCORING CHART (The Donkey Sancturary)

Condition score	Neck and shoulders	Withers	Ribs and belly	Back and loins	Hindquarters
1. Poor (very thin) 	Neck thin, all bones easily felt. Neck meets shoulder abruptly, shoulder bones felt easily, angular.	Dorsal spine and withers prominent and easily felt.	Ribs can be seen from a distance and felt with ease. Belly tucked up.	Backbone prominent, can feel dorsal and transverse processes easily.	Hip bones visible and felt easily (dock and pin bones). Little muscle cover. May be cavity under tail.
2. Moderate (underweight) 	Some muscle development overlying bones. Slight step where neck meets shoulders.	Some cover over dorsal withers, spinous processes felt but not prominent.	Ribs not visible but can be felt with ease.	Dorsal and transverse processes felt with light pressure. Poor muscle development either side of midline.	Poor muscle cover on hindquarters, hip bones felt with ease.
3. Ideal 	Good muscle development, bones felt under light cover of muscle/fat. Neck flows smoothly into shoulder, which is rounded.	Good cover of muscle/fat over dorsal spinous processes, withers flow smoothly into back.	Ribs just covered by light layer of fat/ muscle, ribs can be felt with light pressure. Belly firm with good muscle tone and flattish outline.	Can feel individual spinous or transverse processes with pressure. Muscle development either side of midline is good.	Good muscle cover over hindquarters, hip bones rounded in appearance, can be felt with light pressure.
4. Overweight (fat) 	Neck thick, crest hard, shoulder covered in even fat layer.	Withers broad, bones felt with pressure.	Ribs dorsally only felt with firm pressure, ventral ribs may be felt more easily. Belly over developed.	Can only feel dorsal and transverse processes with firm pressure. May have slight crease along midline.	Hindquarters rounded, bones felt only with pressure. Fat deposits evenly placed.
5. Obese (very fat) 	Neck thick, crest bulging with fat and may fall to one side. Shoulder rounded and bulging with fat.	Withers broad, bones felt with firm pressure.	Large, often uneven fat deposits covering dorsal and possibly ventral aspect of ribs. Ribs not palpable dorsally. Belly pendulous in depth and width.	Back broad, difficult to feel individual spinous or transverse processes. More prominent crease along mid line fat pads on either side. Crease along midline bulging fat either side.	Cannot feel hip bones, fat may overhang either side of tail head, fat often uneven and bulging.

Appendix 6:
The collection of blood from pregnant mares

Equine chorionic gonadotropin (eCG), also known as pregnant mare serum gonadotropin (PMSG), is a hormone that is synthesised in the placenta of pregnant mares between the 40th and 130th day of gestation and is used as an active component of veterinary drugs to control reproduction, mainly in sows but also in other farmed animals.

Blood from pregnant mares is used to produce veterinary medicinal products containing PMSG/eCG. For this purpose, 5 to 10 litres of blood are repeatedly taken from the jugular vein. The PMSG currently available on the European market comes from Iceland, Argentina and Uruguay.

Due to investigations by animal welfare organisations (AWF & TSB), the circumstances of PMSG production, which are contrary to animal welfare, have come under public attention and criticism. However, not only NGOs, but also veterinary institutions have positioned themselves against the use of PMSG/eCG. In Germany for example, the Federal Veterinary Chamber (BTK) is calling on veterinarians to voluntarily renounce using PMSG/eCG. In Switzerland, the livestock industry voluntarily prohibited the use of PMSG/eCG for all animal species in 2022. The European Parliament has been calling on the Commission and Member States to stop the import and domestic production of PMSG/eCG since 2021.

A study carried out on behalf of the German Federal Ministry of Food and Agriculture from 2019 - 2021 showed that piglets can be produced on commercial farms without the use of PMSG/eCG. Various zoo- and/or biotechnical methods are available with which a synchronisation of production cycles can be achieved without the use of PMSG/eCG.

Particularly important is the justification for producing a product with questionable need for the pig industry when the practice of blood collection and breeding of the mare involves such poor welfare that it is more accurately classed as 'animal cruelty'. The psychological stress of the mares must not be disregarded at any time, which adds to the overall stress of the procedure. The animals are repeatedly driven into a state of learned helplessness, in some cases with considerable use of force, which would never be permitted in animal experiments.

The European Commission has stated in its Treaty on the Functioning of the Member States that "in formulating and implementing (...) policies, the Union and the Member States shall, since animals are sentient beings, pay full regard to the welfare requirements of animals". This Treaty corresponds to European primary law and is binding on all Member States. It is time for those responsible for implementing the law to do so with the necessary responsibility and not submit to the lobbying of an industry that is addicted to profit.

CONSIDERATIONS	ISSUES/REQUIREMENTS	COMMENTS
Condition of the mare (Federal Office of Consumer Protection and Food Safety, n.d.)	· Mares must not be pregnant or in lactation. · The body weight of the donor animal should be over 400 kg. · The donor animal must be clinically healthy.	The mares used for PMSG/eCG production in Iceland are both pregnant and feeding their foal from the previous year. The mares used in Argentina and Uruguay usually do not have foals, since they are systematically aborted. Icelandic mares often have a body weight of less than 400 kg. Blood mares in South America are often emaciated and also under this minimum weight.
Volume and frequency of collection of blood (Federal Office of Consumer Protection and Food Safety, n.d.; NC3Rs, 2021; Scherer et al., 2017)	A maximum of 15 ml/kg body weight every 30 days Example: An Icelandic mare with a body weight of approx. 300 kg has approx. 24 litres of blood. Collection volumes of 15 ml/kg should not be exceeded, so that a maximum of 4.5 litres should be collected once a month. However, 5 litres are extracted once a week in Iceland, in South America even up to 10 litres. Other guidelines state: · A maximum of 10 % of a horse's total blood volume every 3 to 4 weeks · A maximum of 10 % of the total blood volume for a single blood collection and a recovery period of 2-3 weeks between collections *All guidelines apply to non-pregnant and non-lactating horses.*	Equine chorionic gonadotropin (eCG) is produced from around day 38–40 of gestation, with peak production between day 55 to 70 of gestation. Production of equine chorionic gonadotropin continues until about day 110 (range 100 to 140 days) of gestation. Blood is taken from the mares for 8 weeks (Iceland) up to 11 weeks (South America). The volumes and frequency (5-10 litres per week) exceed all existing guidelines. Because of the limited time period in which PMSG/eCG can be obtained, as much blood as possible is extracted.
Risks to the mare from the collection of blood	· Hypovolemic shock – more of a risk where 15 % or more of the mares blood volume is collected · Vein injuries, vein infection/inflammation, venous thrombosis, hematoma formation · Anaemia · Weakened immune system · Spontaneous abortions or miscarriages	Despite the many years of use of PMSG/eCG and the associated repeated blood collection, there are no reliable scientific findings to date that have investigated the effects of the blood collection on mares or their foals. This omission can only be explained by the fact that the individual animal is of no economic significance. Replacements for mares lost as a result of blood collection and poor health will come from the female foals bred as part of the production process.
Welfare considerations	· Induced abortion of foal foetuses on farms · Foals as by-product (Iceland) · Methods of restraint · Methods of collection · Stress, fear, mistreatment	Abortion of the foetuses is carried out systematically in Argentina and Uruguay, between day 100 and 130 of pregnancy. Induced abortion allows a further pregnancy in the same year and therefore increased production. It is accomplished by injection of abortifacients, such as prostaglandins, or by manually forcing open the cervix and rupturing the foetal membranes. According to veterinary experts, both methods are painful and hold a high risk of complications at this stage of pregnancy. In Iceland, the foals are born but there is no demand for thousands of foals every year, neither for riding nor for meat production. They are a by-product of PMSG production and many are slaughtered for pet food. The restraint boxes and methods of restraint with ropes, belts and metal bars pose numerous risks of injuries, especially to the mares' legs, heads and necks. The introduction of a 0.5 cm cannula is painful, even with prior local anaesthesia (Iceland). In South America, the cannula is inserted by workers who do not have the necessary skills and often have difficulties finding the jugular vein. The thousands of mares used for PMSG/eCG production in South America, and most of the blood mares in Iceland, are semi-wild and not used to human handling. It is not possible to repeatedly take blood from semi-wild horses without causing stress and fear or without using force. The mares are systematically mistreated and repeatedly traumatised.

Appendix 7:
The use of equids in conservation projects

As our ecosystems become more and more challenged with a loss of biodiversity and degradation of soil and vegetation, it is becoming more common for populations of equids to be introduced to areas across Europe in order to improve and maintain the species diversity in grasslands and rural biotopes.

Management of these equids and protection of their welfare requires specific conditions and guidelines. The following lists some of the most important conditions, but is not exclusive: (Lower Saxony Ministry of Food, 1999; Tierärztliche Vereinigung für Tierschutz e.V & Naturstiftung David, 2023)

Conditions for good welfare

Projects need an experienced and expert lead of project with overall responsibility and decision making.

The following must be organised and monitored:

Management of the herd;

- Using appropriate breeds
- Ensuring the presence of experienced and older animals to lead and teach younger members of the group.
- Ensuring space is available to enable young stallions to form bachelor groups if necessary, with their own territories, or
- Organising the relocation of young stallions to new areas.
- Ensuring frequent inspections, with easy access. These will normally be daily, increasing as appropriate such as the period leading to foaling.
- An appropriate stocking density for the conditions

Management of the environment:

- A safe and accessible source of water
- Appropriate proportion of toxic plants to availability of palatable and safe forage
- Effective and usable weather protection at all times that is natural or artificial
- Fences that are animal welfare compliant and escape-proof. Barbed wire is not appropriate, unless contact with the equids is not possible
- Supplementary food available and accessible when necessary.

Programme of healthcare

- Preventive programmes for vaccinations and foot health in place where appropriate
- Good biosecurity in place
- Anti parasite control programme in place with a focus on protection of the environment where anti-parasitic medicines or chemicals are used

Appropriate contingency plans for rescue in emergency such as flooding, extreme weather conditions.

Issues which need to be addressed with effective mitigation (Lower Saxony Ministry of Food, 1999; Tierärztliche Vereinigung für Tierschutz e.V & Naturstiftung David, 2023):

- The breeds used in the projects are not wild animals and must be protected by legislation.
- The animals used are not immigrants, but are introduced into the area.
- The areas are fenced, i.e. their usable area is limited.
- The movement of the animals is restricted to a habitat selected by the project organiser.
- The herds are assembled, not 'naturally grown'.
- The animals may come from completely differently structured holdings and areas.
- The animals have not yet gained any experience in these new areas that they can pass on to the next generations (collective memory)

Appendix 8:
Glossary of terminology used in Welfare

Animal Welfare: 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) they are healthy, well nourished, safe, able to express innate behaviour, and if they are not suffering from unpleasant states such as pain, fear, and distress (World Organisation for Animal Health, n.d.).

Animal sentience: the ability of animals to feel and experience emotions such as joy, pleasure, pain and fear.

Affective state (or affect): Affective states are longer lasting mood states (such as anxiety or depression) which are not caused by a single stimulus but are the results of an accumulation of experiences. Affect is often simply described as the subjective experience of emotion.

Affect: In the context of animal welfare, is often used to describe animal feelings or emotions, inferred from the associated behavioural expression.

One Health: One Health is an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent.

One Welfare: The link between animal welfare, human wellbeing and their physical and social environment.

Quality of Life: is defined as the welfare state of the animal over time. It can be visualised as the trend that results from graphing welfare state at various points of an animal's lifetime.

A Life worth living: The balance of salient positive and negative experiences is favourable, but less so. Achieved by full compliance with the minimum requirements of welfare that include elements which promote some positive experiences.

A Life not worth living: The balance of salient positive and negative experiences is strongly negative and cannot be remedied rapidly through veterinary intervention or change in husbandry practices. Euthanasia may be the only humane alternative.

A Good Life: The balance of salient positive and negative experiences is strongly positive. Achieved by full compliance with best practice advice well above the minimum requirements of welfare.

Allogrooming: social grooming, typically though not exclusively, seen between members of the same species.

Apathy: sign that either the suppression of natural behaviours or the presence of pain is chronic. Typically the last stage after conflict, ill health, overwork, inhumane handling and stereotypic pain is observed6.

Arousal: A state of physiological alertness and readiness for action.

Behavioural markers of the horse: tail movements, grinding and clapping/ snapping of the teeth, full body, facial and leg muscle movements/ tensing, movements of the head, ears, eyes and neck.

Conspecific: a member of the same species.

Frustration: indicated by repeated yawning, repeated pawing of the ground, shaking/nodding head, etc.

Learned helplessness: becoming behaviourally unresponsive after repeated exposure to an aversive stimulus which cannot be escaped.

Rebound behaviour: Prolonged confinement (current understanding: over 11 hours in a single box) leads to more fearful and reactive horses which are more likely to cause injuries to riders (especially in a riding school environment) (Lesimple, C. 2020). This can also be seen after social deprivation. Compensatory eating is arguably also a rebound behaviour.

Stereotypies: Repetitive, invariant behaviours performed with no obvious goal or function, though are believed to be a means to alleviate the influence of negative stimuli on an animal's wellbeing (Li, C., & Gu, X. 2024). Stereotypic behaviours should be considered indicative of chronic stress due to past or present unfulfilled important behavioural needs and highly compromised psychological welfare in sub-optimal environments.

Common examples seen in equid animals include:

- Weaving: moving the head and neck from side to side whilst standing.
- Wind sucking: Inhaling air through the open mouth.
- Crib biting: Placing the upper teeth on a solid surface and inhaling air through the open mouth simultaneously.
- Box walking: Continuously walking around in circles inside the stable.

Valence (or valenced): Valence refers to the pleasantness or unpleasantness of an emotional stimulus.

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