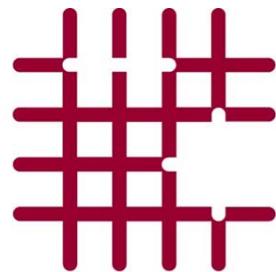


Duty of Care, Naturally

*On the welfare of
semi-captive and wild animals*

RDA_2012_02



RAAD VOOR DIERENAANGELEGENHEDEN

LETTER OF PRESENTATION

The Hague, 12 November 2012

Excellence,

In recent years there has been a clear increase in public concern about the welfare of animals that live in the wild. As amply demonstrated by the political debates regarding the management and well-being of the 'wild' animals in the Oostvaardersplassen Nature Reserve, the Amsterdam Water Supply Dunes and the Veluwe National Park, responsibility for these animals can no longer be considered the exclusive domain of biologists, ecologists and managers. Society at large demands a voice as well.

Decentralization and privatization of policies on nature and the environment requires that increased efforts be made by national and provincial government and nature conservation organizations to ensure harmonization of strategies and approaches in this area. A common foundation and shared principles will help this along. With the current Opinion, the Council on Animal Affairs (RDA) hopes to give impetus to that process – at least with respect to the animal-related component of policy on nature and the environment.

The current Opinion builds on recent RDA Opinions that address our human responsibility for animals in captivity. '*Duty of Care - Naturally*' demonstrates how principles that were presented in earlier reports can and must be translated for application to non-captive animals, so that we can consistently fulfil our moral responsibility towards *all* animals, and the duty of care that follows from it – for individual animals and for animals as a group.

The moral responsibility for animals is irrespective of context. It is therefore just as applicable to non-captive animals as to captive animals. At the same time, husbandry contexts undoubtedly play an important role in the practical fulfilment of our duty of care. This is, first, because these contexts determine in large part the environmental circumstances in which an animal finds itself. Second, it is because the practical implementation of the duty of care is the end result of an assessment of all relevant aspects, including the interests of both humans and animals and the relative importance of each.

In this Opinion, the Council will show that the fulfilment of our duty of care in a wide range of contexts can be based on a single set of basic principles. Central to this is the adaptive capacity of an animal (or group of animals) in relation to the challenges posed by its environment.

The rationale underlying this Opinion has produced an integrated framework for determining the welfare of animals and the corresponding duty of care for *all* animals. In this Opinion, we primarily discuss the application of this framework in the context of semi-captive and wild animals. In a subsequent Opinion, the Council hopes to sketch the integrated framework for animal welfare and duty of care in its full breadth for all animals, with a corresponding definition of roles and responsibilities of the different actors.

Sincerely,

Prof. Frauke Ohl,
Chairperson, Council on Animal Affairs (RDA)

CONTENTS

1.	Summary.....	4
2.	Introduction	8
2.1	Central question.....	8
2.2	Introduction	8
3.	Animal welfare revisited	10
3.1	Starting points.....	10
3.2	The concept of animal welfare.....	11
3.3.	Welfare and populations.....	12
3.4	Welfare and 'suffering'	13
3.5	Conclusions	13
4.	Moral responsibility and duty of care	14
4.1	Moral responsibility.....	14
4.2	duty of care (including 'hands off' or abstention of care)	15
4.3	Conclusions	16
5.	Shaping the duty of care	17
5.1	Duty of care and accountability	17
5.2	Suffering and duty of care	17
5.3	Ex ante evaluation.....	21
5.4	Conclusions	21
6.	Examples from practice.....	22
6.1	A mouse is a mouse is a mouse.....	22
6.2	Mice, mosquitoes and amoebas	22
6.3	Strays and feral animals.....	23
	Appendix 1: Assessment model duty of care and (un)acceptable suffering.....	24
	Appendix II: Important definitions	25
	Appendix III: Preparation of this Opinion	26

1. Summary

The central question of this Opinion of the Council on Animal Affairs (RDA) is what should society's (individual or collective) responsibility be towards the welfare (including the health) of non-captive animals; and how can, may and must this responsibility be fulfilled in practice.

The Council observes that a strict line of division is drawn in policy – both central and decentralized -- between animals that are kept by humans and animals that live in the wild. Animals living in the wild tend to be seen exclusively as part of an ecosystem, and the so-called 'hands off' policy is the dominant principle guiding human intervention. For kept animals, the focus is on the welfare of each individual animal, and the duty to provide proper care is dominant. The sharing of knowledge and alignment of goals between the two domains is very limited, because representatives of the one domain frequently perceive the assumptions and arguments of the other domain as in conflict with their own goals – and *vice versa*.

The Council further observes that this strict division between the policy domains, and the principles that underlie them, results in more and more questions in practice: For example, captive animals are being held in ever larger groups, for which care is provided mainly at the group level. Likewise, more extensive approaches to animal husbandry are gaining popularity – such as turning out cattle and horses to graze on flood plains. At the same time, human influences increasingly impact the behaviour of animals that are considered to be 'non-captive' in formal terms. Recent debates, for example, have contested the appropriateness of the 'hands off' principle as a suitable guideline for management of the large herbivores in the Oostvaardersplassen Nature Reserve and the fallow deer in the Amsterdam Water Supply Dunes.

The legally defined and, in policy terms, strictly structured division between animals held in captivity and animals living in the wild is now, in practice, a broadening transition area with multiple shades of grey. It is also becoming increasingly evident that certain moral principles adopted by society in the Netherlands do not necessarily lead to uniform management measures in all circumstances.

The fundamental acknowledgement of the intrinsic value of animals and the recognition of animals as sentient beings applies to all animals, both captive (domesticated) and non-captive (those living freely in the wild). The same is true for the moral responsibility that follows from this. Yet the way we interpret and fulfil this moral responsibility varies widely in practice. In this respect, a number of topical questions come to mind: Do we have a duty to provide supplementary food to wild animals during wintertime food shortages? When must we take in and give shelter to a wild animal, and when should we refrain from doing so?

With this Opinion, the Council aims to bridge the gap between the policy domains of captive and non-captive animals, while also providing openings for nature conservation organizations in the Netherlands to develop animal management policies based on common principles. To this end, the Council offers tools for consistent interpretation of our duties in relation to the welfare of animals, irrespective of context. The Council also demonstrates

how a single set of basic principles, when applied to a variety of different animal husbandry practices, can nonetheless lead to many different management responses.

The Council on Animal Affairs draws the following conclusions with respect to the definition of animal welfare as the underlying concept, our moral responsibility for the welfare of animals, and the human duty of care that follows from this for the welfare of animals:

Animal welfare is defined here as the outcome of a dynamic interplay between the animal and its environment. Herein, the animal's state of welfare is linked to the degree to which it can adapt to prevailing environmental challenges and to the freedom it has to display normal, species-specific behavioural patterns¹ in order to reach a state that it experiences as *positive*.²

When environmental conditions exceed the adaptive capacity of an animal, intervention measures are required. However, a momentary state of negative welfare may fall within the animal's adaptive capacity, and therefore will not necessarily imply a state of suffering that demands intervention.

The dynamic concept of animal welfare can be applied to groups and populations of animals as well as to individuals. A group of animals must be free to adapt to the prevailing environmental conditions, whereby the degree of freedom of each individual in a given group or population is considered to be a functional part of the whole. Differences between individuals can actually be crucial in ensuring the adaptive capacity and self-reliance of the group as a whole. Intervention aimed at one individual might therefore have an adverse effect on the welfare of (other) individuals (immediately or in the longer term). This is why our duty of care must also consider the group or population as an important part of the living environment of the individual.

Our **moral responsibility for the welfare of animals** is context-independent and in principle is to be separated from the way we interpret and fulfil that responsibility, with consideration of other values and practical aspects.

Duty of care is the way we can and must fulfil our moral responsibility in practice. This duty of care is, however, related to the context in which the animal finds itself. The duty of care is determined in part by the extent of human control over the animal's situation and the degree to which animals are restricted in their capacity to (successfully) adapt to their present environmental conditions.

When the animals' adaptive capacity is not exceeded, the human duty of care is limited to maintaining this state. The absence of any obligation to intervene can be interpreted as the duty to maintain a 'hands off' policy (to refrain from intervening).

When the animals' adaptive capacity is exceeded, the human duty of care requires an assessment to be made of the situation and, ultimately, measures to be taken to prevent unacceptable suffering. These could be measures related to the adaptive capacity of the animal (such as vaccinations or supplementary feeding) or measures targeting the environmental conditions that form a challenge to the animal (such as improvements to the animal's habitat).

¹ Stereotypes and depression may well be reactions to cope more adequately with adverse circumstances (experienced earlier or currently prevailing), but here they are seen as symptomatic of exceeding an individual animal's capacity to adapt.

² Negative and positive well-being represent the extremes on a sliding scale, comparable to being healthy or ill.

Our **duty of care** may be **constrained** by physical and/or technical limitations, by human- or animal-oriented objectives if these outweigh the welfare compromise to the animal, and by the societal (un)acceptability of intervention measures or the resultant suffering. The question of whether intervention measures are required must be answered in a step-by-step process of analysis, in which the full analytical procedure has to be completed to reach a conclusion that is assured of broad public support:

- A) In case of compromised animal welfare, the first step is to evaluate whether intervention measures are (practically) feasible.
 - A1) If no intervention measures are possible, then the potential animal suffering will have to be accepted as unavoidable. This may be the case, for example, when non-captive animals that are beyond the reach of human control die of starvation in winter.
 - A2) If there is no practical way to effectively reduce an animal welfare compromise, but this compromise is the (direct or indirect) consequence of human action, the relevance of that human action must be weighed against the interests of the animal. This is, for example, the case when, for purposes of medical research, animals are submitted to painful experimental procedures for which no alternatives are available.
- B) If intervention measures are possible, the keeper/manager with primary responsibility may nonetheless choose not to carry these out, because other objectives (benefiting humans or animals) may be perceived to be more important, and these objectives thus form a constraint on intervention:
 - B1) If there are no human- or animal-oriented objectives that from the perspective of the keeper/manager take precedence over the intervention measures, then the intervention measures must be carried out.
 - B2) If there are human- or animal-oriented objectives that – from the perspective of the keeper/manager – take precedence over the intervention measures, then we call the resultant animal suffering (*subjective*) *necessary suffering*, and as a next step, an ethical assessment must be carried out to determine whether such necessary suffering is (or is not) societally acceptable.
- C) With the ethical assessment, determination is made of whether the (subjective) human- or animal-oriented objectives outweigh the animal welfare compromise. The assessment is done on the basis of relevant facts, intuitions, and the norms and values ascribed to by society at large.
 - C1) If the ethical assessment finds that the human- or animal-oriented objectives do not outweigh the animal welfare compromise, then the keeper or manager must either propose different intervention measures or modify the actions that primarily are responsible for the welfare loss.
 - C2) If, following the ethical assessment, the human- or animal-oriented objectives are found to outweigh the animal welfare compromise, then the conclusion must be one of (societally) *acceptable suffering*.

The human responsibility towards non-captive animals does not arise from the fact that humans keep animals. Rather, it follows from the acknowledgement that *all* animals have intrinsic value and the recognition that animals are sentient beings, as well as from the fact that human activity influences the living environment of the animal (and therefore its self-reliance).

Our (human) duty of care is thus linked to the extent to which we humans impact the self-reliance of animals – whether that be by influencing the animal itself or by influencing the animal's environment. At the same time, the Council notes the wide societal support in the Netherlands for the notion of 'stewardship'. 'Stewardship' implies the right of humans to keep, exploit and kill animals and to influence animals' natural habitat, but also the duty to take the interests of animals into consideration in human pursuits. This means that curtailing the self-reliance of animals is acceptable, in principle, when doing so serves a specific human interest. The acceptability of any compensatory intervention measures and of any animal welfare compromise that remains has to be assessed on a case-by-case basis.

Such an assessment should preferably be done in advance (*ex ante*) so as to have a preventive effect, and unacceptable suffering is avoided. Yet with a one-off assessment the task of the manager (or owner or keeper) is not complete: over the course of time, animal owners, keepers and managers must confirm that the intended welfare effects are actually realized. Moreover, changes in the norms and values ascribed to by society may lead to shifts in views on the acceptability of suffering.

2. Introduction

With respect to the way we keep animals, the Council points to its Opinion Responsible Animal Keeping (published in March 2010), about roles and responsibilities in relation to captive animals. The Council also considers the formulation of such an Opinion to be desirable on non-captive and semi-captive animals, due in part to the public and political debates about the welfare of large herbivores in nature conservation areas. In this regard, the Council is of the opinion that the Assessment Model for Policy on Animals can also be employed to reach a clear and broadly supported definition of 'captive' and 'non-captive' – and any gradations therein.'

Source: *Moral Issues and Public Policy on Animals* (2010)

2.1 Central question

The central question of this Opinion of the Council on Animal Affairs (RDA) is what should society's (individual or collective) responsibility be towards the welfare (including the health) of non-captive animals; and how can, may and must this responsibility be fulfilled in practice.

2.2 Introduction

Decentralization and privatization of policies on nature and the environment requires that increased efforts be made by national and provincial government and nature conservation organizations to ensure harmonization of strategies and approaches in this area. A common foundation and shared starting points will help this along. With the current Opinion, the Council on Animal Affairs (RDA) aims to give impetus to this process – at least with regard to the animal-related component of policy on nature and the environment.

In earlier publications³ the Council stated that the role of society in preventing welfare compromises to animals is not limited to only those animals that are kept in captivity. The Netherlands is the only country in the world that includes in its laws and statutes a fundamental duty of care for all animals (including those that live in the wild).⁴ This duty of care stipulates that humans have a legal obligation to 'provide proper care if an animal is in need of help'. What exactly the notion of *proper care* entails, and when an animal is *in need of help*, nonetheless seems to depend on the animal's status as kept in captivity or as non-captive (living in the wild).⁵

In practice, we observe that animals living in the wild (non-captive animals) and domesticated animals (captive animals) are dealt with according to radically different legal principles: the Animal Health and Welfare Act (AHDW) and its successor, the Animals Act, emphasise the duty of care for captive animals, while in the Flora and Fauna Act, a 'hands off' policy towards nature plays the dominant role. It is, however, increasingly apparent that the division between captive and non-captive animals is not black and white: there is a

³ *Responsible Animal Keeping* (2009) and *Moral Issues and Public Policy on Animals* (2010)

⁴ Art. 36 of the Animal Health and Welfare Act

⁵ See for example Swart & Keulartz on *Duty of Care* (2005 and 2010)

growing intermediate category which includes both captive animals that are highly extensively kept (such as cattle and horses turned out to graze on flood plains and free-range pigs in forest areas) as well as non-captive animals that are nonetheless substantially curtailed in their behavioural freedom (such as the large herbivores in the Oostvaardersplassen Nature Reserve and the fallow deer in the Amsterdam Water Supply Dunes). As the population of the Netherlands increases, non-captive animals will be more and more affected by human influences. Furthermore, due to increased urbanization and the growing number of extensive livestock husbandry systems in the Netherlands, the category of animals in the 'in-between zone' (neither wholly domesticated nor truly wild) is expected to expand. Finally, there is a lack of clarity about how to classify formerly domesticated animals that have 'gone wild' (either intentionally or by accident), as well as the ever larger group of 'wild animals' (foxes, herons, stone martens) that are settling in urban environments.

The current legal categorization into the 'captive' and 'non-captive' groupings contains no provision for an intermediate category. That is problematic, because as public controversies and political debates have amply demonstrated, a 'hands off' policy towards non-captive animals in a delimited living environment is no longer compatible with the norms and values held by society today. There is therefore a need to reconsider the categories in which we classify animals and to redefine our responsibilities and roles in relation to the different categories.

The Council on Animal Affairs has developed a conceptual framework that transcends the artificial categorization of our duty of care for animals based on a specific type of relationship between human and animal. This conceptual framework offers a uniform and integrated means to define our duties and responsibilities in a consistent way for any type of human-animal relationship.

3. Animal welfare revisited

3.1 Starting points

'The findings of the public survey show that the field "relationship" is seen as most important. The most positive aspects of human interactions with animals are [thus] related to the human-animal relationship, though viewed from the perspective of humans. Values such as freedom, pleasure and well-being play an important role here. But in the relationship with the animal, other values are also of central importance, such as respect for the animal and care for the animal.'

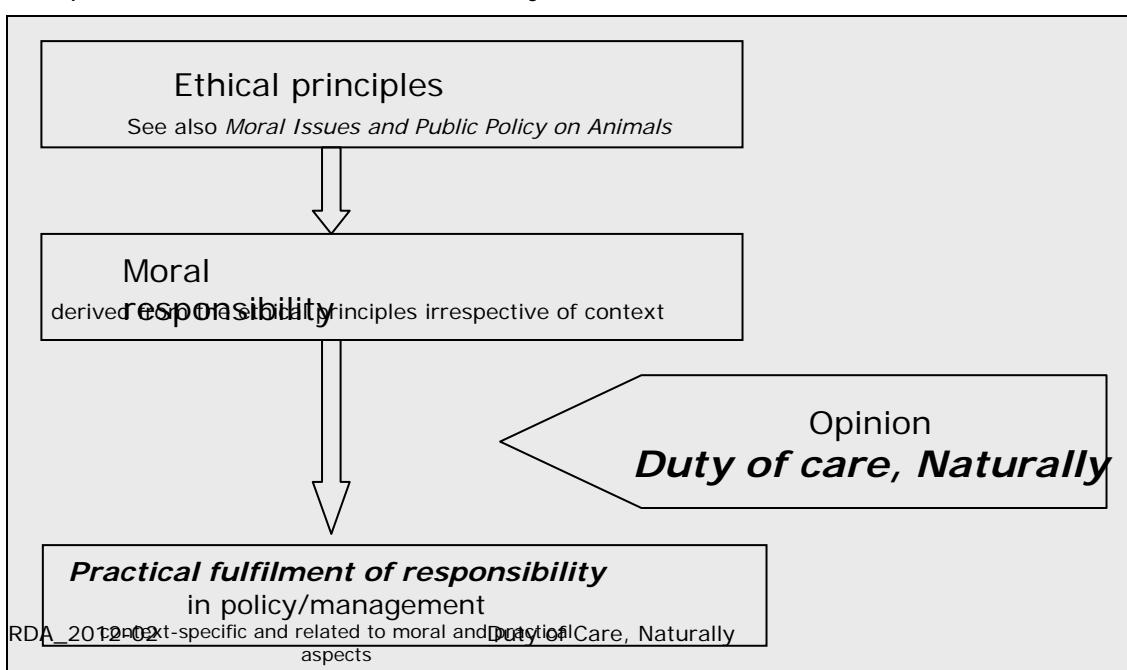
And: *'Utility for humans and the role of animals in nature are seen by many as the most valuable aspects of animals.'*

(Source: *Denken over Dieren [Thinking about Animals]*, De Cock Buning et al. 2012)

The Council's reflections in the current Opinion concern only our human responsibility for *animal welfare*. This Opinion is not intended to explore the ethical principles involved in the keeping of animals or the right of humankind to exploit animals as a source of food, to use animals for experiments, to hunt animals or to keep animals as pets.

The Council observes that today's society generally agrees that humans have a moral responsibility for the welfare of animals. At the same time – and in line with the findings of the earlier RDA Opinions *Responsible Animal Keeping* (2009) and *Moral Issues and Public Policy on Animals* (2010) – the rearing, use and killing of animals for human purposes is deemed acceptable as well, as long as it is done with respect for values broadly ascribed to by society.

From this moral responsibility follows a duty of care for animals. The Council limits itself in the current Opinion to the question of to what extent the duty of care should extend to safeguarding the welfare of animals that live in the wild or in semi-captivity. The Council will show how the moral principles that underlie this human responsibility towards animals can and must be translated into a set of practical do's and don'ts to guide the consistent interpretation and fulfilment of our duty of care.



3.2 The concept of animal welfare

In our reflections on how we should fulfil our moral responsibility for the welfare of animals, and the practical duties that follow from it, it is essential that we start with a scientifically sound and practical definition of the concept of animal welfare.

'Animal welfare' is a term that can be interpreted in various ways. One widely used conceptual approach to animal welfare is that of the 'five freedoms'. This guideline is based on findings presented by the Brambell Committee in 1965. The UK Farm Animal Welfare Council refined and published these in 1993 as the so-called *Five Freedoms*.

The Five Freedoms, however, offer little guidance for assessing the welfare of animals at the group level, nor do they enable us to determine the welfare of animals that live free under conditions outside the reach of human control. This is because they were drawn up as a tool to assess welfare of *individual* animals that are kept *under controlled conditions* and because they are based on the assumption that to safeguard the welfare of an animal the absence of any 'negative' state primarily is required.

Many scientifically accepted concepts approach animal welfare as a continuum from 'good' to 'bad'. They also assume that temporary negative states can in fact be compensated. In addition, the absence of a negative state is not necessarily considered to mean that there is a positive state. This is of the utmost relevance, since society in the Netherlands increasingly insists that situations be sought in which animals experience their state as positive – also referred to as 'positive animal welfare'.

As written previously by the Council, more recent – scientifically based – concepts consider animal welfare to be an internal state that the animal itself experiences as positive: 'An animal can be said to be in a good state of welfare if it is capable of adapting to prevailing environmental conditions and in so doing to achieve a state that it experiences as positive.'⁶

Existing knowledge about the importance of the natural capacity to adapt for the welfare of animals can be translated into a biology-based concept of animal welfare. This concept is linked to the Five Freedoms, but it has been further developed into a more dynamic approach to animal welfare: it offers guidance for linking the welfare of individual animals and groups of animals to the animal's interaction with its environment, irrespective of the specific context. It is thus applicable to both captive animals and to those that live in semi-captivity and in the wild.

An animal is in a positive state of welfare if it has the freedom adequately to react to hunger, thirst and inappropriate feed; thermal and physical discomfort; injury and disease; and anxiety and chronic stress. In addition, it must have the freedom to display normal species-specific behaviour, which enables the animal successfully to adapt to prevailing environmental challenges, so that the animal reaches a state that it experiences as positive.

⁶ *Responsible Animal Keeping*, RDA (2009)

Adaptive Capacity = Predisposition + Experience + Environmental Conditions

An individual's adaptive capacity is determined by the interplay of its genetic background, acquired characteristics and environmental factors. This interplay is dynamic in nature, because the individual itself goes through changes (for example, by aging and previous experiences), and because environmental factors may undergo profound changes as well. Assuming the existence of (genetically determined) innate capabilities, the adaptive capacity of the animal will be put under increasing pressure as the constraints imposed by environmental factors increases. This results in a greater risk of compromised welfare to the animal due to its ability to adapt being exceeded.

3.3. Welfare and populations

The Council recognizes the central role of the adaptive capacity of animals in the concept of animal welfare. If environmental conditions place high or prolonged challenges on the animal's adaptive capacity, then there is an increasing risk of the animal reaching a state that it experiences as negative, which may be characterized by physical problems, a lack of normal species-specific behaviour and an excess of abnormal behaviour. In its assessments of the quality of animal welfare, the Council therefore takes as its starting point the adaptive capacity of the animal in relation to its living conditions. This also provides the basis for the practical interpretation and fulfilment of our duty of care in relation to the animal.

Especially in wild animals the needs of individual animals appear to conflict with the needs of the population as a whole when measures that are considered necessary from an ecological perspective to protect a given population may have an adverse impact on the welfare of some individuals within that same population.

Yet in the Council's view, any apparent contradiction between the welfare of individual animals and the interests of animal populations and the ecology disappears when the dynamic concept of welfare is applied to animal populations. A group of animals has to be free to adapt to the prevailing environmental conditions, in which the degree of freedom of each individual in a given group or population is considered to be a functional part of the whole. This presents an opportunity for government policy to bring the welfare interests of individual animals in line with the need to preserve animal species (or the intrinsic value of the species).

As a matter of fact, intervention aimed at an individual can have a negative impact on the welfare of (other) individuals. It is, for example, a biological fact that within (social) groups of animals not all individual animals can experience a maximum state of welfare at all times. Yet these differences between individuals can actually be crucial in ensuring the adaptive capacity and self-reliance of the group in its entirety. This is why our duty of care must also consider the group or population as an important part of the living environment of the individual.

3.4 Welfare and ‘suffering’

Current laws and regulations are primarily oriented at preventing *unnecessary suffering* of animals. While this rationale seems logical, the question of what *unnecessary suffering* actually involves is not easy to answer. In the controversy surrounding the question of whether starvation in winter among the large herbivores in the Oostvaarderplassen Nature Reserve constitutes unnecessary suffering, the Council notes that a range of definitions are used for the concept of unnecessary *suffering*. It therefore seems wise to start with a more precise definition of the term. Further details follow in section 5.2.

Another question concerns how the concepts of animal *welfare* and *suffering* are related to one another. If we understand welfare to be a continuum extending from negative to positive welfare, at what point on this continuum does suffering begin? Furthermore, if our aim must be to achieve a positive state of welfare for animals, as we stated in the 2009 Opinion *Responsible Animal Keeping*, under what conditions could animal suffering then still be acceptable, if at all?

If we assume that the welfare status of an animal is determined by the extent to which it can adapt to the challenges in its environment,^{7,8} then one can certainly speak of *suffering* when the adaptive capacity of the animal is exceeded. A momentary state of suffering, however, might fall within the adaptive capacity of the animal, and would then not necessarily mean that human intervention is called for.

3.5 Conclusions

- In its assessments of the quality of animal welfare, the Council takes as its starting point the adaptive capacity of the animal in relation to its living environment. This also provides the basis for the practical interpretation and fulfilment of our duty of care in relation to the animal.
- When the adaptive capacity of the animal is exceeded, human intervention is required. A momentary state of suffering, however, might fall within the adaptive capacity of the animal, and would therefore not necessarily mean that human intervention is called for.
- The dynamic concept of animal welfare can also be applied to non-captive animals and to a group or population of animals.
- Any apparent contradiction between ‘welfare’ and ‘ecology’ can be resolved by applying the dynamic concept of welfare.

⁷ Stereotypes and depression may well be reactions to cope more adequately with adverse circumstances (experienced earlier or currently prevailing), but here they are seen as symptomatic of exceeding an individual animal’s capacity to adapt.

⁸ Negative and positive well-being represent the extremes on a sliding scale, comparable to being healthy or ill.

4. Moral responsibility and duty of care

4.1 Moral responsibility

Animals are *sentient beings*: that is, they are creatures with feeling, capable of experiencing pain and suffering. This was officially set out in the 1997 Treaty of Amsterdam and reiterated in the Treaty of Lisbon of 2009. The acknowledgement that animals are sentient beings is irrespective of context: both captive animals and non-captive animals have sentience.

In addition to acknowledging the sentience of animals, we also recognize that each (individual) animal has intrinsic value. This acknowledgement was first formally established in the Netherlands in 1981, as one of the fundamental principles for dealings with animals in the Governmental Memorandum on Animal Welfare. Since then, it has become a cornerstone of the new Animals Act of the Netherlands (art 1.3). The intrinsic value of an animal refers to the value of the qualities of an individual as well as to the species itself, irrespective of any value that the individual or species might have for humankind.

The acknowledgement of animals as sentient beings and recognition of the intrinsic value of animals implies that in all actions and dealings, humans have a **responsibility, in moral terms**, to consider the welfare of all animals, regardless of species or context. It is this moral responsibility that is explicitly established in the Treaty of Lisbon.

For animals in captivity, the entire living environment is determined by humans, and to some extent even species-specific characteristics. In such circumstances, the human moral responsibility for the welfare of animals seems self-evident. However, it could be argued that where human activity is (or will be) of no influence whatsoever on how animals live, humans cannot be held responsible for the animals in question. If we define 'nature' in its strictest sense, as everything in the world that is neither caused or controlled by human beings, including all animals and plants and natural phenomena,⁹ humans would not seem to bear responsibility for the welfare of animals that live free in nature. Here, it is worth pointing out that there is no 'pristine nature' in the Netherlands, and truly wild areas are hardly to be found in the rest of Europe as well. Virtually everywhere, human land use and land management influence the living environment and patterns of movement of all animals in their natural surroundings, and many animal populations are directly managed by humans. The Council is of the opinion that the degree of naturalness, or 'how wild the wilderness is', in itself does not change the **moral** responsibility borne by humans, because this moral responsibility is derived from acknowledgement of the intrinsic value of the animal and from the recognition of animals as sentient beings. This moral responsibility, furthermore, relates only to human actions and dealings, and does not pertain to interactions among animals themselves.

The Council is aware of the wide range of views on the human-animal relationship and the relationship between humans and nature. Among these are movements that believe humankind to have no authority over nature and no responsibilities toward nature; while others maintain that humankind need not justify the way it deals with animals and nature. In the present Opinion, the Council bases itself on a view that is widely ascribed to by society that humans are a participant in and/or custodian of nature and of animals, and that people therefore bear a fundamental moral responsibility and are accountable for their actions and behaviour.

⁹ Collins Cobuild dictionary.

4.2 duty of care (including 'hands off' or abstention of care)

duty of care refers to the set of practices by which we interpret and fulfil our moral responsibility for the welfare of animals. The duty of care may in certain situations entail a duty NOT to intervene. This often is referred to as a 'hands off' policy or duty to abstain from care. This report makes no distinction between these two notions. Duty of care, as it is used in this Opinion, encompasses all gradations of care, including the duty not to intervene.

Unlike the **moral** responsibility, which is absolute and without gradations, there is a range of levels and degrees to which the duty of care can, must and may be **practically** implemented. That is because practical and technical possibilities will vary from species to species and from situation to situation, and because animals (both captive and non-captive) and their living environment may be variously influenced, purposely or otherwise, by human activities.

As early as 2005 and, more recently, in 2010, Swart and Keulartz argued the merits of a sliding scale from specific care (at the level of the individual animal) to a-specific care (at the level of the living environment of an animal population). They proposed that the required degree of specificity of care depends on how much influence humans exert on the animal's environment: with greater human impact, more specific care would be needed for the welfare of the animal.

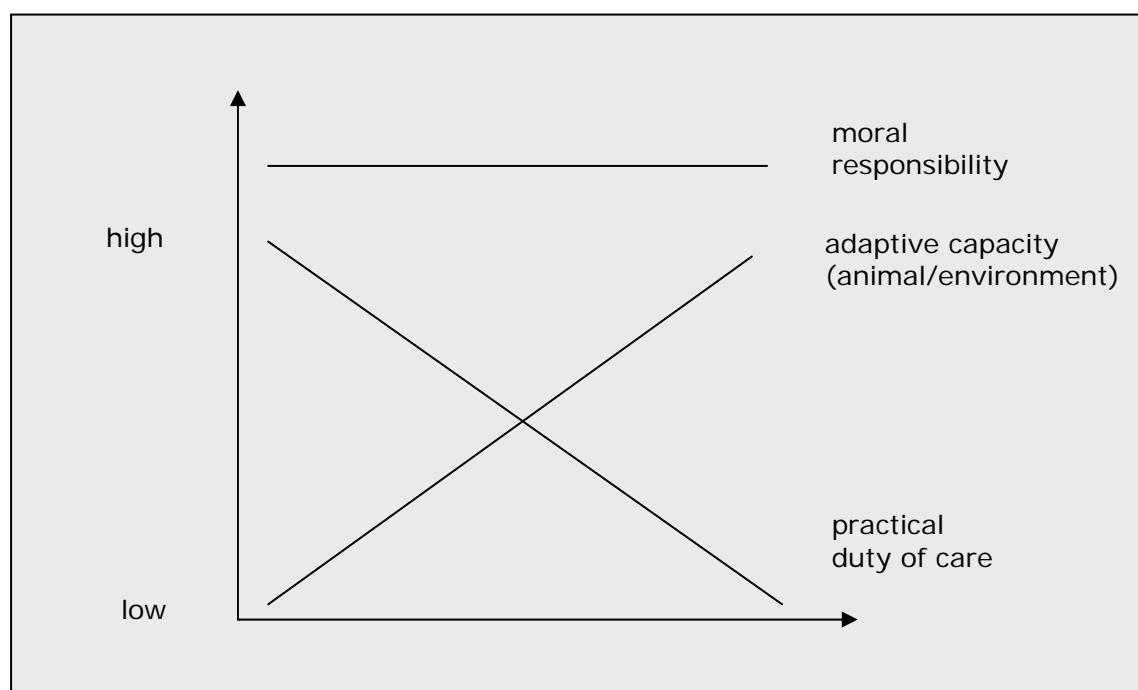


Figure 2:

Practical implementation of the duty of care is linked to the degree to which the animal's adaptive capacity is constrained (whether due to limitations of its own adaptability or due to changes in environmental conditions).

Human moral responsibility is the basis of the practical duty of care, and it applicable in equal measure to all sentient beings.

We saw earlier that the adaptive capacity of the animal is central in determining the quality of the animal's state of welfare (see section 3.2). It follows that our duty of care comes into play only in those situations where an animal lacks or will lack the necessary capability to adapt sufficiently well (by changing its behaviour in such a way as to enable it to adapt to its environment and in so doing, in time, reach a state of positive welfare). In this regard, the Council accepts the biological fact that periods of sub-optimal and even negative welfare may be part of this adaptation process and of the natural existence (such as exposure to bad weather conditions and periods of food shortage).

The duty of care is, furthermore, limited by practical aspects of intervention and the availability of realistic measures to achieve improved well-being. A lack of any practical options, by definition, will prohibit fulfilment of the duty to intervene. However, if the loss of welfare is a direct or indirect consequence of human actions and dealings, the justifiability of those human pursuits does become a matter of discussion.

Finally, the duty to provide for positive welfare of animals may also be limited if we conclude, based on an ethical assessment, that certain human- or animal-oriented objectives have precedence over the impairment of welfare of the animal. For example, today's society accepts that a compromised animal welfare could potentially result from the use of animals for scientific and food-production purposes, as well as when we cull animals, for instance, for road safety or advancement of biodiversity. Animal-oriented objectives are actions that can be seen as protective or beneficial to animal welfare, in the longer term, as well as the decision to refrain from intervention measures if actions to protect one individual would lead to unacceptable welfare compromise to other animals.

Careful assessment is needed to determine the degree to which a human- or animal-oriented objective does outweigh a particular harm done to animal welfare, and whether a human activity that leads to a non-compensable compromise of animal welfare is in fact societally acceptable. The Council therefore recommends the use of the *Assessment Model for Policy on Animals* that it presented in its 2010 Opinion *Moral Issues and Public Policy on Animals*. Annex 1 contains a version of the Assessment Model adapted for the purposes of the current subject matter.

4.3 Conclusions

Humans bear a moral responsibility for the welfare of animals because animals are sentient creatures and because humans exert, directly and indirectly, an influence on the capacities of individual animals and animal populations to adapt to the prevailing conditions.

We refer to the practical fulfilment of this moral responsibility as our duty of care. Fulfilment of this duty of care may be constrained by the practical impossibility of safeguarding the welfare of an animal or population of animals. It may also be constrained by human- and animal-oriented objectives that are deemed to be more important than the impairment of animal welfare that is involved. An ethical assessment must always be carried out to determine whether the anticipated compromise of animal welfare is acceptable.

5. Shaping the duty of care

5.1 Duty of care and accountability

In *Responsible Animal Keeping* (2009), the Council established that in any human-animal relationship, the animal is the weaker party, and therefore humans that keep animals must be willing to account for and justify the manner in which they keep animals. The same applies *mutatis mutandis* to animals that live in semi-captivity or free in nature. A logical question in these latter cases is who is responsible and who is required to demonstrate accountability.

Taking responsibility

Article 2 of the Dutch Flora and Fauna Act provides a useful reference in this regard. It states that any persons who, through their actions and dealings, are liable to cause animals to suffer adverse impacts are obliged to undertake any and all measures that can reasonably be expected to prevent, minimize or undo the consequences to the greatest extent possible. This means that the duty of care falls to whosoever curtails, or risks curtailing, the self-reliance of an animal to such an extent as to exceed the animal's adaptive capacity.

Demonstrating accountability

The Council is of the opinion that this duty of care encompasses not only the obligation to refrain from harmful acts or to perform helpful ones. The duty to conduct transparent and societally responsible assessments on which to base such acts is also an essential component of our duty of care. Those who bear responsibilities must be prepared to demonstrate accountability and provide justification for their actions. In the Council's view, this should certainly also apply to those animals that we have given the legal status of '*res nullius*', as this reflects the current public view that these animals belong to no one in particular and - therefore - belong to us all.

5.2 Suffering and duty of care

Current laws and regulations in the Netherlands (such as the Flora and Fauna Act, the Animal Health and Welfare Act and the Animals Act) stipulate that unnecessary suffering must be prevented. However, the term *unnecessary suffering* is not further defined, and in practice, it is interpreted in a range of very different ways. This has produced a lack of uniformity in the way we interpret and shape our duties towards animals.

Suffering is a subjective emotional state, and the degree of suffering can be assessed only by the suffering individual. When we define suffering as 'a negative state that is undesirable and which, if possible, must be prevented or ended', then it is important to realize that experiencing negative emotions does not always mean suffering. Fear, for example, is an emotion that is important to prevent harm; the same goes for pain. Negative emotions are thus of value for the individual, because they enable the individual to adapt to the circumstances. Only when an individual lacks the ability to react adequately to a negative emotion – for example, by taking flight to escape a frightening situation – will a challenge be created that may exceed the adaptive capacity of that individual.

Furthermore, we must realize that identical conditions will not necessarily have identical consequences for different animal species: some species, for example, are well adapted to survive periods of food shortage, as they have ample fat reserves to rely on. For them,

exposure to a lack of food may not mean starvation. Obviously, any adaptive capacity has limitations: an animal that in the end starves to death because a food shortage exceeded its capacity to adapt will probably have experienced a state of suffering.

When, then, does suffering reach such magnitude that human intervention is required? To determine this, we look at an animal's adaptive capacity: as long as its adaptive capacity is not exceeded – though we may speak of a momentary negative (emotional) state – intervention may nonetheless not be required. Our duty of care in such a case, entails first and foremost the obligation to refrain from doing anything that might contribute to overburdening the animal's adaptive capacity. This can be understood as a 'hands-off' duty.¹⁰

If the animal cannot (or can no longer) adapt to meet the environmental challenges that it faces, then intervention is required. However, situations may arise in which the animal's adaptability is exceeded, while intervention measures are technically impossible or practically unfeasible. In such cases, we speak of *unavoidable suffering*. If unavoidable suffering is the (direct or indirect) result of human influences (for example, because the presence of humans has influenced animals' living environment or because humans have brought animals into a particular living environment), our duty of care would then require an assessment be made of the (societal) acceptability of that human influence and of the animal suffering following from it.

If intervention measures are possible, we must determine whether there are any (subjective) human- or animal-oriented objectives that could limit application of possible intervention measures. If that is not the case, the duty of care consists of implementing the intervention measures. If we fail to implement the intervention, the situation would then be one of *unnecessary suffering*.

As an example, the natural deaths as a result of starvation among the large herbivores in the Oostvaardersplassen Natural Reserve were judged to be a case of needless suffering by the Second International Commission on Management of the Oostvaardersplassen (ICMO2), because nature reserve managers had a practical means of intervening to prevent suffering (by culling weak animals). With this conclusion, the Commission deemed the strictly non-interference management strategy ('maintaining natural processes with as little human intervention as possible') as insufficiently important to justify the suffering of the animals. The decision not to take action when the animals had reached such a poor state that death was sure to follow was thus considered morally unacceptable.

If intervention measures are possible, but human- or animal-oriented objectives (such as the interests of a population) dictate that they be restricted, then we speak of *necessary suffering* (i.e., suffering that is needed to accomplish certain objectives). In cases of necessary suffering, an ethical assessment must be carried out to determine whether the objectives do (or do not) have the broad support of society and that suffering as a result of not intervening is *acceptable*. If the outcome of this assessment indicates that the suffering is acceptable, then the duty of care is limited to carrying out the assessment procedure in a careful and transparent manner. If the suffering turns out to be unacceptable, then the duty of care then also encompasses implementation of intervention measures.

¹⁰ This animal welfare-related 'hands off' duty is situation-specific. A decision to utilize an animal for purposes of human benefit changes the given situation, requiring that a new assessment be made of the animal's state of well-being. Preferably, such an assessment should be carried out prior to taking the decision to utilize the animal.

When, for example, non-captive animals pose a danger to road or air traffic, the animal populations in question could be managed (e.g., by limiting their access to roads and air space, reducing the population, etc.) to reduce the risk of harm to humans. That management may affect animals and animal populations in such a way as cause suffering by exceeding their capacity to adapt. That suffering is *avoidable* (because we could choose not to manage the animal population), but it is also *necessary* (because it is required to ensure human safety), and it is *acceptable* if the outcome of an ethical assessment indicates that in this case the objective of human safety takes precedence over the suffering caused to the animals and/or animal population.

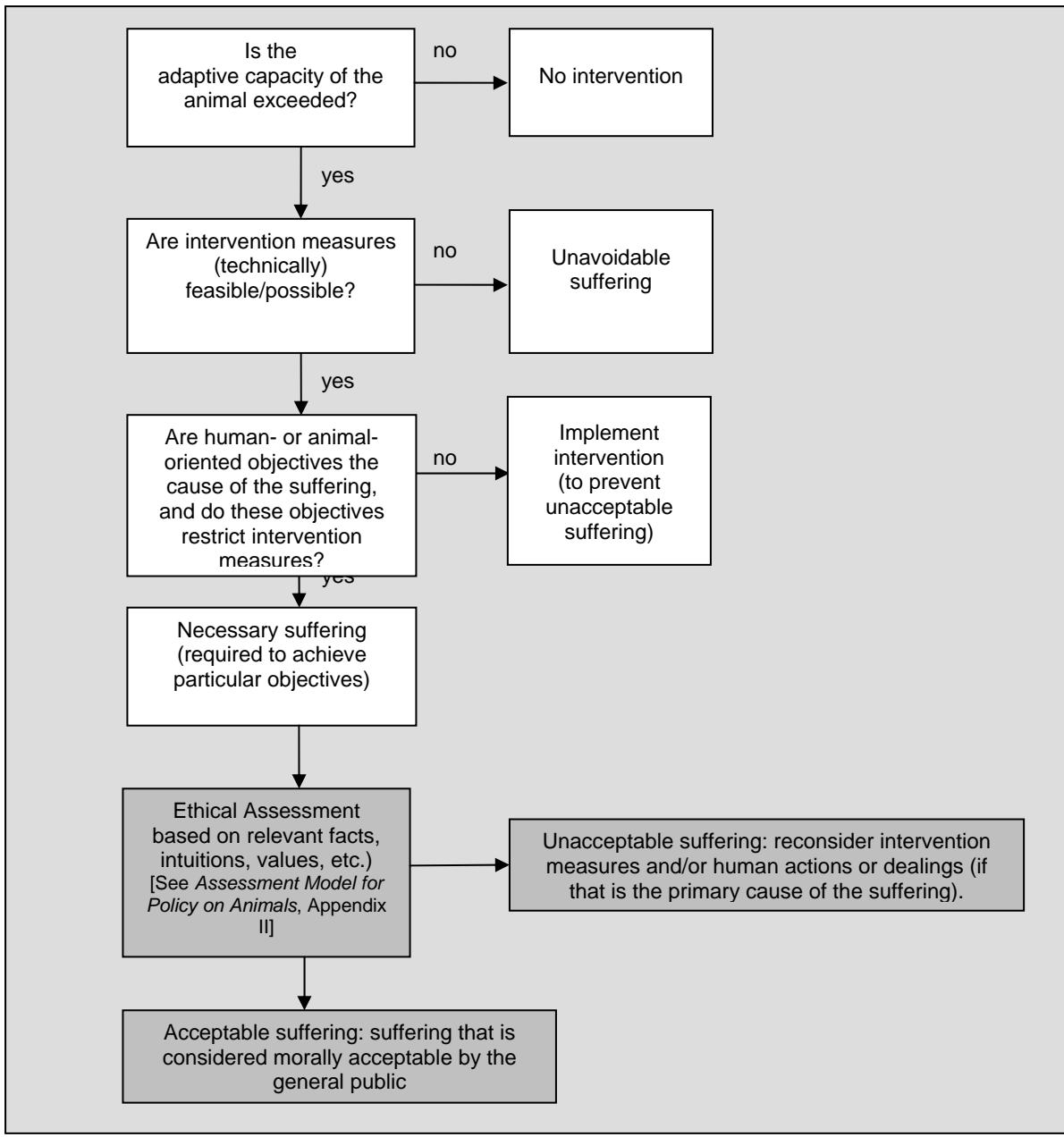
The question of whether intervention measures are required must be answered in a step-by-step process of analysis, in which the full analytical procedure has to be completed to reach a conclusion that is assured of broad public support. The figure below presents the questions that have to be answered to arrive at a consistent and transparent interpretation of our duty of care for the welfare of animals.

The process of analysis always begins with the question of whether the adaptive capacity of an individual animal or group of animals is exceeded; in other words, is there animal suffering? If the answer to this question is 'yes', the next step is to analyse whether the suffering is *unavoidable* and/or *necessary*. These, however, are just intermediate steps. The full process of analysis has to be completed to determine whether the potential suffering of an animal or animals is societally *acceptable*.

If a particular practice and/or intervention measure causes unacceptable suffering, the practice and/or intervention measure must be reconsidered. Termination of any human act that is a cause of animal suffering is explicitly a part of those reconsiderations.

The entire assessment is preferably carried out in advance (*ex ante*), so that its effect is preventive and unacceptable suffering is avoided. Yet with a one-off assessment the task of the manager (or owner or keeper) is not complete: over time and in the course of practice, animal owners, keepers and managers must ensure that the intended welfare effects are actually realized. Moreover, changes in generally held norms and values may lead to shifts in public views on the acceptability of suffering, and thus, on the acceptability of human practices.

Note: in line with the principles formulated in section 3.1, the figure and the assessment method recommended in this Opinion pertain only to the *acceptability of potential compromises of animal welfare* as a result of a particular human practice; they do not concern the *acceptability in principle* of those practices. The Council also recognizes that society generally accepts a degree of impairment of animal welfare as part of many of today's animal husbandry systems.



The assessments are carried out successively at the technical level, at the management level and at the societal level. It goes without saying that these assessments should take place in the public eye, and preferably *ex ante*.

5.3 Ex ante evaluation

In its Opinion *Profitable Welfare* (2012), the Council on Animal Affairs advocates a broadening of the current environmental impacts reports to transform them into societal impacts reports. That recommendation is reiterated here, whereby the Council recommends that the assessment as described in the previous section (5.2) should form an integral part of the environmental impacts report.

In practical terms, this means that any person or persons wishing to implement plans that can be reasonably expected to affect the welfare of animals or animal populations (i.e., their self-reliance) should be required to submit an *ex ante* evaluation report to provide justification and accountability. That report should describe the extent of any potential impairment of animal welfare; the technically feasible and societally acceptable intervention measures that will be taken; and the societally acceptable compromise of animal welfare that is anticipated as a final result.

Oftentimes, such *ex ante* evaluations are already being carried out in some way or other, for example, in the form of environmental impacts reports and wildlife management plans. But in the Council's view, such assessments and conclusions that relate to our duty of care for animals must be made more explicit. In the case of the Oostvaardersplassen Nature Reserve, this evaluation was progressively done by the ICMO2 Commission. In the case of the fallow deer in the Amsterdam Water Supply Dunes, there is no time like the present to launch such an *ex ante* assessment – before releasing animals into newly created conservation areas (so-called *re-wilding*) and before reducing their current habitat, for example, with implementation of new infrastructure projects. The ongoing controversy about whether to take in and care for ailing seals (or to take in other animals from the wild for that matter) would similarly benefit from an *ex ante* evaluation of the duty of care, the societal acceptability of planned intervention measures, and the societal acceptability of suffering.

5.4 Conclusions

- The duty of care is borne by the person or persons whose (planned) actions and dealings could limit the capacity of an animal or group of animals to adapt. That person or persons must, prior to the action in question, make known in what way he/she intends to fulfil his/her duty of care. This assessment in itself is an integral part of the duty of care.
- The term 'unnecessary suffering' can be further refined by distinguishing '(un)avoidable suffering' and '(un)acceptable suffering'. This refinement is done successively at the scientific (biological) level, at the practical level, at the level of the animal keeper or manager, and finally at the socio-ethical level.
- The duty of care for animals and groups of animals is linked to the extent to which the suffering can or cannot be avoided as well as to the acceptability or unacceptability of the suffering.
- The broadening of the environmental impacts reports to transform them into societal impacts reports, alongside adoption of the RDA assessment framework, will provide useful guidance for making transparent assessments regarding animal welfare and the duty of care for semi-captive and non-captive animals.

6. Examples from practice

6.1 *A mouse is a mouse is a mouse*

If we agree that we have a duty of care for *all* species of animals (in other words, for living creatures with sentience and with intrinsic value), then our moral duty of care applies to a mouse regardless of whether it be an 'animal in the wild', an 'animal pest', a 'pet', or a 'laboratory animal'. However, compared to an animal in the wild, a mouse kept as a pet or as a laboratory animal is exposed to living conditions in which its freedom to adapt to its environment is substantially curtailed. That mouse, for example, is given food and water because it is not free to go foraging for food. Our practical duty of care for a mouse that is kept as a pet or as a laboratory animal, therefore, would seem to be substantially greater than our responsibility towards a mouse in the wild. In contrast, if the 'wild mouse' is considered a pest and a potential threat to public health, that initial duty of care for the mouse is overruled by the human interest (which is to say, protecting public health comes first). This justifies resorting to any means necessary to combat a mouse infestation, even if in so doing individual animals are caused to suffer. Nevertheless, it is still our responsibility to choose means that consider insofar as possible the intrinsic value of the animal (by opting for preventive pest control methods, for instance) in order to prevent unacceptable suffering of the animal.

6.2 *Mice, mosquitoes and amoebas*

A similar line of reasoning underlies differences in our human responsibility for the welfare of mice, mosquitoes and amoebas. Yet, while we can conclude without a doubt that mice are sentient beings and have consciousness (at least to the extent that they are capable of suffering and are somewhat aware of their internal state), this may not be true for less complex organisms. If welfare is determined exclusively in relation to the animal's perception of its own state, then it could be argued that any possible human responsibility for protecting/facilitating the welfare of an animal is limited to sentient creatures.

However, it is not entirely clear which animal species have sentience, and we must conclude that any assessment of a 'consciousness' is first and foremost a subjective human judgment based on our own limited knowledge. While, legislation pertaining to laboratory animals has for decades been restricted to vertebrates, recent amendments have also included cephalopods (squids, cuttlefishes, etc.), because current views hold that their cognitive capacities are equivalent to those of the lower vertebrates. Thus, while we accept that our human responsibility for animal welfare is restricted to only those animals that can suffer or experience a state of positive welfare, our classification of animals as creatures capable or incapable of sentience is conditional on our own understanding. Since our knowledge is limited, the Council is not in favour of restricting our human responsibility to only those animals that *a priori* have been defined as sentient beings. As shown by the previous example, any duty to intervene or to take action can be practically constrained by other considerations (such as the difficulty of changing the way a mosquito or amoeba interacts with its environment).

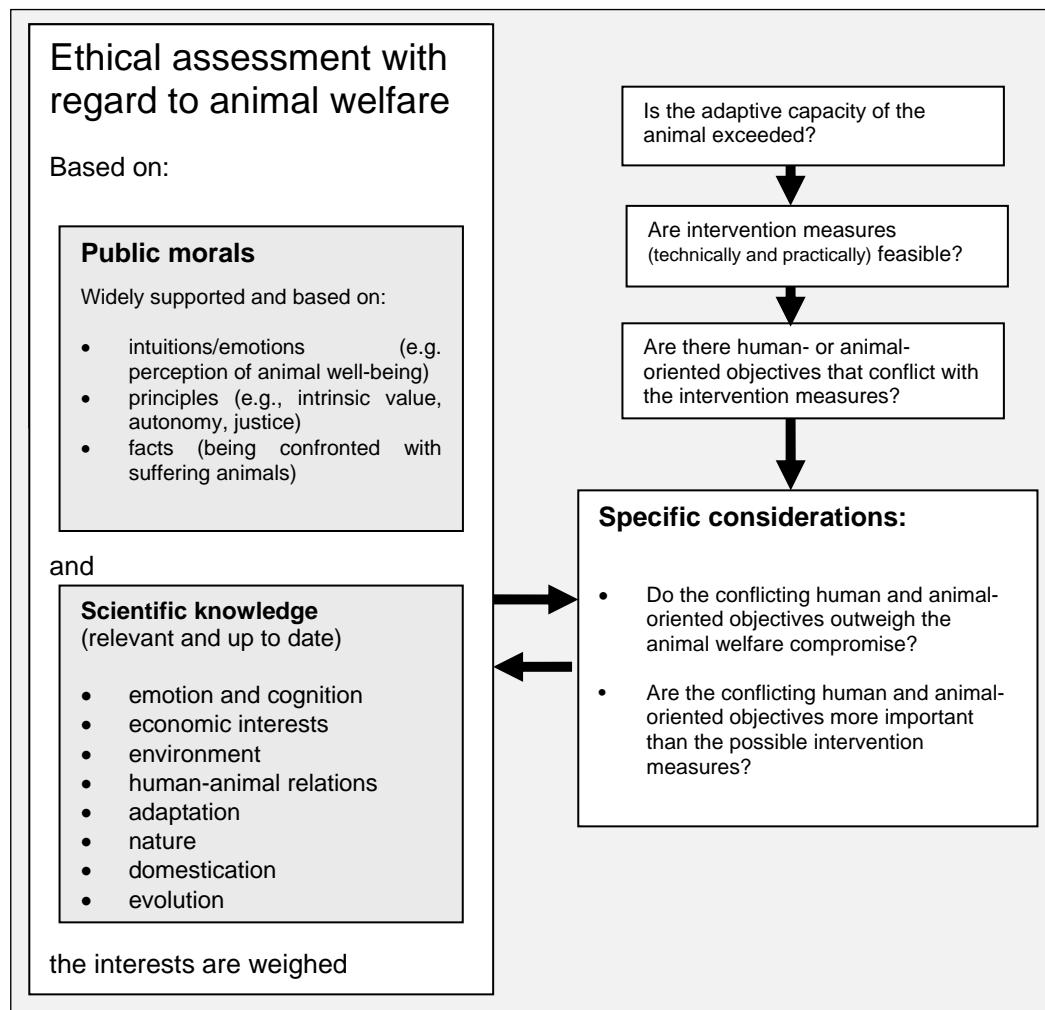
6.3 Strays and feral animals

The natural behaviour of wild animals is the result of an evolutionary selection process. The behaviour of wild animals is therefore adapted to the possibilities and limitations of their natural living environment. For domesticated animal species (and animal breeds), however, it may be difficult to define the 'natural' living environment, because their corresponding wild equivalents may not necessarily provide a proper reference. Nonetheless, studies have shown that for many domesticated animal species, the complete behavioural repertoire of the wild predecessors is still present in a latent state, and it quickly resurfaces when the animal is put in a semi-natural environment.

For that reason, the duty of care for strays and feral animals can also be linked to their ability to adapt to a non-captive living environment. However, strays and feral animals also influence the environment of 'genuinely wild' animals. Our duty of care for strays and feral animals should therefore be determined based not only on the possible suffering of the animal concerned, but also considering any potential impairment of the welfare of other animals that may be caused by a stray or feral animal (introduced by humans in the natural environment).

Appendix 1: Assessment model duty of care and (un)acceptable suffering

There is an essential difference between *necessary suffering* and *acceptable suffering*. Necessary suffering is suffering that is required to achieve certain – subjective – management objectives. The need thus arises from the perspective of the person or persons who are in a position to take certain intervention measures, but choose not to do so because other human- or animal-oriented objectives prevail. Nowadays, however, the choice is clearly no longer exclusively the animal keeper or manager's to make. Society demands a voice in such decisions as well. Indeed, today's prevailing public morals – based on up-to-date and relevant scientific knowledge – form part of the determination of whether human- or animal-oriented objectives have precedence over the suffering of animals or animal populations. If that is the case, then the situation is one of acceptable suffering.



If the self-reliance of an animal is curtailed by human actions and dealings in such a way that suffering results for which no practical means of intervention is possible, the resulting impairment of animal welfare must be ethically assessed – possibly followed by a reconsideration of the human action.

Appendix II: Important definitions

Adaptive capacity

The adaptive capacity describes the set of innate (physical and mental) abilities with which an animal species is naturally endowed and which an individual develops in the course of its own existence. The species-specific abilities form a basis, which is refined and developed in each individual. The adaptive capacity of an individual is not static; it is dependent on the individual's internal state as well as on its changing environmental conditions.

A group or population has a (collective) adaptive capacity as well, because the capacity of a group to adapt to changing environmental conditions is linked to the interplay of all of the individuals in the group.

'Hands off' duty

The 'hands-off' duty is the fulfilment of our duty of care in situations where human intervention is either unnecessary or undesirable; that is, humans fulfil their duty to care by abstaining from any action. The 'hands off' duty is thus a form of the duty of care (and not the absence of it).

Suffering

Suffering is a subjective emotional state. Short-termed, negative emotions such as hunger and fear serve as triggers for the animal to adapt its behaviour. They therefore serve a function. A brief state of suffering may fall within an animal's adaptive capacity, and would not necessarily require intervention. If an individual lacks the ability or the opportunity appropriately to react to suffering (for example, by escaping from a frightening situation), a challenge is created that may exceed the adaptive capacity of the individual. In such a case, the situation is one of suffering for which intervention is required.

Moral responsibility

Our moral responsibility for the welfare of animals is based on our acknowledgement of the intrinsic value of animals. We therefore bear this responsibility irrespective of the species of animal or the context in which we encounter the animal.

Welfare

Welfare describes an internal state of an individual, as experienced by that individual. This state of welfare is the result of the individual's own characteristics, as well as the environmental conditions to which the individual is exposed. Human determination of an animal's state of welfare is only as good as the observer's perception of the signals that the animal emits. A negative state of welfare is perceptible via reactions that are aimed at changing the existing situation. A positive state of welfare is perceptible via reactions aimed at keeping the existing situation as it is.

Duty of care

Duty of care refers to the set of practices with which we fulfil our *moral responsibility* for the *welfare* of animals. This duty of care has practical aspects, such as the technical feasibility of intervention measures, and ethical aspects, the most essential being the weighing of the importance of our actions and dealings alongside their consequences for animals. The duty of care lies with the person or persons within whose responsibility the animal or group of animals falls.

Appendix III: Preparation of this Opinion

The present Opinion was prepared in a somewhat different way than is usual for the Council on Animal Affairs. The normal approach is to ask a number of Council members to draft a preliminary note on the issue to be addressed and then to bring in the expertise of all Council members by means of a horizontal assessment of the draft text. The subject matter of the current Opinion, however, was new to the RDA to such an extent that in addition to the expertise of the Council members, considerable knowledge from outside the Council was also needed. For this reason, the RDA support desk drafted a preliminary discussion paper following a brainstorming session with a group of external experts. That preliminary paper was then submitted to the Council for review. The next step was presentation of the paper to various external organizations associated with policy formulation and implementation on nature and the environment. These organizations were invited to contribute their expertise to this Opinion by reviewing the preliminary paper and answering a number of related questions. The paper and the external inputs were then compiled by the RDA desk to formulate an initial version of this Opinion, which was then submitted to the Council members in two rounds of horizontal assessment.

In preparation of this Opinion, the following organizations were consulted, among others:

- Dierenbescherming (Dutch Society for the Protection of Animals)
- Faunabescherming (Dutch Society for the Protection of Wildlife)
- Faunafonds (a fund to compensate damage caused by protected species)
- Interprovinciaal Overleg (the Inter-Provincial Consultative Council)
- Koninklijke Nederlandse Jagersvereniging (Royal Netherlands Shooting Association)
- 12 Landschappen (a union of provincial nature and landscape conservation organizations)
- Raad voor de Leefomgeving en Infrastructuur (Council for the Environment and Infrastructure)
- Staatsbosbeheer (conservation organization for Dutch conservation areas)
- Vereniging Natuurmonumenten (society for nature conservation in the Netherlands)
- Vereniging Vond

The Council on Animal Affairs gratefully acknowledges these organizations' contributions. As the Council discovered, viewpoints on this subject matter range widely among the consulted organizations, and at times may be radically different from the conclusions drawn by the Council itself. Inclusion in this list of consulted organizations therefore in no way constitutes endorsement of this Opinion by the organizations concerned. The Council on Animal Affairs *itself* bears the *full and sole* responsibility for the content of this Opinion.

About the RDA

The Council on Animal Affairs (RDA) is a council of experts that advises the minister and state secretaries of Economic Affairs, Agriculture and Innovation in response to specific questions and at its own initiative on issues related to animal welfare, animal health and animal ethics. The Council bases its views on the latest developments in science, society and ethics. The RDA is made up of scientific and practical experts who serve on the Council in their personal capacity, without obligation or compulsion.

The preliminary work for this Opinion of the Council was carried out by the RDA support desk. In these preparations, grateful use was made of the expertise of Rory Putman, Andreas Dijkhuis, Ludo Hellebrekers, Frauke Ohl and the organizations listed in Appendix III. The draft Opinion was put before all Council members twice. Finally, the RDA chairperson finalized the Opinion taking into consideration the responses from this horizontal assessment. With this, this Opinion is expressly a product of the entire Council.

The Council on Animal Affairs is made up of the following experts:

J.A.M. van Arendonk	J. Kaandorp
H.M.G. van Beers-Schreurs	F. van Knapen
F.W.A. Brom	P.A. Koolmees
W.H.B.J. van Eijk	J. Lokhorst
A.A. Freriks	F. Ohl, <i>chairperson</i>
L.J. Hellebrekers	P.I. Polman, MPH
W.H. Hendriks	P. Poortinga
S.A. Hertzberger	F.C. van der Schans
J.E. Hesterman	M.M. Sloet van Oldruitenborgh-Oosterbaan
A.J.M. van Hoof	J.A. Stegeman
H. Hopster	M.H.A. Steverink, MFM
R.B.M. Huirne	H.W.A. Swinkels
M.J.B. Jansen	H.M. van Veen
M.C.M. de Jong	P.J. Vingerling
M. de Jong-Timmerman	W. Zwanenburg
J.Th. de Jongh	

More information about the Council on Animal Affairs can be found on our website: www.RDA.nl

All of our previously published advisory reports can also be downloaded there, and a link is available to subscribe to our newsletter.

Council on Animal Affairs
P.O. Box 20401
2500 EK The Hague
T: 070-3785266
www.RDA.nl