ETHICS OF INTERVENTIONS FOR THE WELFARE OF FREE-LIVING WILD ANIMALS

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There is growing interest in and support for the development of disease prevention measures in free-living wildlife and for the rescue, treatment and rehabilitation of wild animals that are sick and injured. In some cases these endeavours may be of importance to the conservation of populations but frequently they are undertaken for welfare rather than conservation reasons. There are circumstances in which wildlife welfare can be improved by therapeutic intervention but the difficulties, and their potentially harmful consequences, should not be underestimated. Interventions for the welfare of free-living wild animals whose fate we control or influence and which are therefore, to some extent, under our stewardship, are consistent with the tradition of humanity for and stewardship of domesticated or captive animals. However, it is suggested here that the decision to treat sick or injured free-living wild animals should not be based on welfare grounds alone.

Keywords: *animal welfare, ethics, intervention, medicine, rehabilitation, wildlife*

Introduction

It is recognized that without active conservation measures, many populations of wild animals are likely to become extinct due to effects of recent man-made changes to the environment (McNeely 1992; Magin *et al* 1994; Heywood *et al* 1994). In view of this, interventions for conservation by habitat protection and management, captive breeding, translocation, and other methods have now become widely accepted (International Union for the Conservation of Nature/United Nations Environment Programme/World Wide Fund for Nature 1991; Olney *et al* 1994).

There has also been a greatly increased interest in, and popular support for, wildlife medicine: both the treatment or control of wildlife diseases in the field and the rescue, treatment and rehabilitation of wild animal casualties. These endeavours are undertaken for one of two reasons. First, for conservation, that is to protect or help conserve a threatened population and secondly, to improve the welfare of individuals. An example of the application of wildlife medicine for conservation is the use of vaccination programmes to protect highly endangered free-living populations from infections which might cause their extinction. These include, for example, the vaccination of mountain gorillas *Gorilla gorilla beringei* against measles (Sholley 1989), the vaccination of Florida panthers *Felis concolor coryi* (Rupprecht *et al* 1990) and African wild dogs *Lycaon pictus* against rabies (Gascoyne

et al 1993). Although the rescue, treatment and rehabilitation of wildlife casualties can contribute directly to the conservation of some species, often these endeavours are of little conservation relevance and are motivated, or justified, by concern for the welfare of individual animals. It is the ethical issues in these cases that we discuss in this paper.

Aspects of the ethics of intervention for the welfare of free-living wild animals have been discussed by various authors and opinions differ about the value of such endeavours (Woodford 1973; McKeever 1979; Loftin 1985; British Wildlife Rehabilitation Council 1989; Cooper 1989; Kirkwood 1990,1992,1993). In this paper we suggest that, since the fates of many species of free-living wild animals are influenced by human activities and since this brings some responsibility for their stewardship, interventions for their welfare when they have been harmed by human activities is consistent with the current ethical stance on the welfare of farm, companion, laboratory and other animals for which we are responsible. Nevertheless, we suggest that the decision to intervene in these cases or in those in which sickness or injury is not human-induced, should not be based on welfare grounds alone.

The development of wildlife medicine

There have been great advances in the medicine of wild animals in captivity during the last 20 years, and many developments in the application of these techniques for the treatment of free-living wildlife (see for example: Haas 1993; Needham 1993; Williams 1993). It is not possible to provide a comprehensive review of this large subject here but readers may find recent compendia such as those by Fowler (1986, 1993), Frye (1994) and Ritchie *et al* (1994) provide useful introductions. Other useful sources of information include the *Journal of Zoo and Wildlife Medicine*, the *Journal of Wildlife Diseases* and the journal entitled *Wildlife Rehabilitation*.

Although the range of species encompassed is very large (there are about 20,000 species of terrestrial vertebrates), the principles of diagnosis and treatment are the same as for the domestic species. There are, however, many particular difficulties, for example those presented by the scarcity of data on husbandry, nutrition and restraint techniques, disease susceptibility, biomedical parameters (eg haematology), and on specific medical and surgical techniques (eg safe and effective drugs and drug doses). These problems are gradually being overcome in two ways. Firstly, data of relevance to management and medicine are gradually being collected and published for an increasing range of species (eg Bennett *et al* 1991) and, secondly, techniques for making predictions of, for example, normal physiological parameters or nutritional or drug dose requirements are being developed (eg Kirkwood & Bennett 1992; Kirkwood & Bennett in press). Suffice it to say here that the technology has developed to a stage at which it is possible to treat successfully many injuries or diseases of free-living wild animals.

The release of wild animals after treatment in captivity may often be the bottleneck in the success of the process. The fitness of the animal and the timing, location and other circumstances of the release must be carefully considered (Ludwig 1982). Arranging a release can be a very lengthy and labour-intensive procedure which may involve assessment of available habitat, pre-release training, post-release monitoring and supplementary feeding.

There have been few detailed studies of the survival and subsequent performance of rehabilitated wild animals (but see Morris & Warwick 1994; Robertson & Harris 1995a, b;

Sainsbury *et al* 1996). This is largely because of the difficulties and expense of carrying out this work. A number of papers have been published recently on release techniques. For example, for some British mammals: bats (Walsh & Stebbings 1989); red squirrels (Bertram & Moltu 1986); seals (Mayer & Hutchison 1990); foxes (Harris & MacDonald 1987); badgers (Harris *et al* 1988); otters (Jefferies *et al* 1986); and deer (Allen 1989). Information is also available for birds: for example, birds of prey (Llewellyn 1990), and other species (Coles 1985).

The current scale of wildlife treatment and rehabilitation

In some countries, the scale of these endeavours is becoming considerable. In Britain alone, there are several hundred individuals and organizations involved in treatment and rehabilitation of wildlife casualties (British Wildlife Rehabilitation Council 1991), and a recent survey suggested that at least 16,000 wildlife casualties were taken into captivity for treatment annually in Britain (Best 1993). This figure is probably a considerable underestimate. Peeters (1991) estimated that wildlife hospitals in the Netherlands handle over 30,000 birds per annum and that a high proportion of these were released. A significant proportion of the individuals in populations of some species are treated in wildlife hospitals at some stage of their lives. For example, it has been estimated that, even before the 1988 phocine morbillivirus epidemic, 20 per cent of the common seals *Phoca vitulina* in the Wadden Sea had been released from Dutch rescue centres over the previous 15 years (Harwood & Reijnders 1988).

Under what circumstances can interventions benefit the welfare of free-living animals?

There is, in Britain, a considerable body of legislation which exists to protect the welfare of wild animals by preventing disturbance and harm, by regulating methods of pest control, and by regulating research procedures (Cooper 1987). Similar legislation exists in many other countries. Furthermore, it is generally accepted that in human endeavours care should be taken to prevent the risk of compromising wild animal welfare unnecessarily, although the rigour with which this principle is applied when human and wild animal interests are in conflict, varies. Legislation plays an important role in safeguarding wildlife welfare and there may be a case for providing greater protection for many species (see Sainsbury *et al* 1995). Is there a need to go beyond this and to undertake active measures to improve the welfare of sick or injured wild animals? First let us consider under what circumstances interventions could benefit the welfare of such animals.

Faced with a sick or injured wild animal there are three possible courses of action: no intervention, treatment, or euthanasia. From a *purely welfare* perspective (other considerations are discussed below), there are circumstances under which each of these is justifiable.

(a) **No intervention**: If the animal is likely to recover without treatment, and if treatment would be an unjustifiable added stress, then there is no case for intervention.

(b) **Euthanasia**: If the animal is unlikely to recover, is judged to be in pain or distress and cannot be treated, then euthanasia is justifiable on welfare grounds.

(c) **Treatment**: There are two situations where treatment is justifiable on welfare grounds. The first is if an animal is likely to recover without treatment but its welfare is better served by treating than by not treating (eg by reducing the time to recovery). The second is if the animal is unlikely to recover without treatment and treatment (and subsequent management and release) can be accomplished with relatively little stress.

Theoretically there are thus circumstances under which appropriate interventions could improve the welfare of sick or injured wild animals. However, interventions may adversely affect welfare in several ways. Firstly, the stresses of capture from the wild, hospitalization, treatment and subsequent release are hard to assess but may be substantial. For example, Rebar *et al* (1995) considered that confinement and handling may have contributed to deaths due to shock in oiled sea otters at rehabilitation centres (see also Lewis & Stocker 1993). Secondly, measures aimed at preserving life may, in fact, result in prolonging pain and stress. Thirdly, the process may also result in an adverse impact on the welfare of other animals. This could occur if, for example, released animals displace others from feeding or breeding territories to the detriment of these animals. It could also occur through accidental introduction of infectious disease carried by the released animal into resident populations of the same or other species. The latter is a potentially serious hazard. This point is illustrated by myxomatosis which was, it is believed, accidentally introduced into wild rabbits in Britain in 1952 and which very severely harms the welfare of huge numbers of these animals (Sainsbury *et al* 1995). Contact between animals that are normally geographically or ecologically isolated from one another can provide opportunities for infectious agents to cross from their usual host species (in which they may cause little or no disease), to new species in which their effects may be unpredictable, hard to control and more serious (some examples are provided by Kirkwood 1996). There is a danger of such cross infections at wildlife hospitals.

Thus it is possible to envisage several ways in which direct interventions for wildlife welfare may result in a negative rather than a positive effect both on the individual for whom the intervention is made, and also to others in the population to which it is returned. The balance may be difficult to assess. However, some treatments present relatively minor stresses and the stresses of more intensive therapeutic measures may be minimized by good husbandry and, if appropriate, analgesic and tranquillizing drugs. Furthermore, it may be possible to minimize the dangers of accidental disease introduction by strict isolation of cases and by releasing animals back into the population from which they came.

From a purely welfare perspective, there are some cases when it appears that intervention is justifiable; that is when, in welfare terms, the benefits of the intervention outweigh its costs. Does it follow that it is always right to intervene in such cases? We consider some other ethical issues concerning intervention in the following section.

Some arguments against veterinary interventions for the welfare of free-living wild animals

In many cases interventions have been and still are undertaken to rescue animals compromised by purely natural occurrences. For example in southern France in 1985, 1000 Greater flamingoes *Phoenicopterus ruber*, weakened by severe cold weather, were captured and taken into captivity for protection until the weather improved (Johnson & Green 1990).

The welfare of free-living wild animals is frequently compromised by starvation, disease or injury as a result of natural processes. The majority of free-living animals die well before they have reached the maximum lifespan for individuals of their species, and it is probably a fortunate few that avoid episodes of pain and distress during their lives and associated with their deaths. Nevertheless, it is felt by some that naturally occurring diseases or injuries in free-living wild animals are 'wrongs' that should, when possible, be put right. This view is entirely subjective and peculiar to our species. Sentient creatures have suffered episodes of severe pain and distress from disease and injury for well over a hundred million years before humans evolved to a stage at which they could contemplate this or consider doing anything about it.

The more traditional position is that we are responsible for the welfare of animals under our care but not of those, in the wild, that are not. There are obvious practical and economic reasons why the line was drawn at the farm boundary but a sound philosophical one too. Wild animals have always fought their own battles with competitors, parasites, infections, and with the rigours of the environment and are as they are – anatomically, physiologically, behaviourally and immunologically – entirely because of this. The treatment of compromised individuals and thus giving the evolutionarily 'less fit' (which, by definition is what wild animals that are sick or injured through natural causes are) a second chance, is no less an interference with natural selection than shooting the fit.

Furthermore, to intervene to prevent or treat an infectious disease in a wild animal, is to arbitrarily take sides in what is likely to have been a host/parasite relationship that has evolved over a profoundly long time.

There are therefore many reasons why careful reflection is necessary before undertaking any veterinary interventions for the welfare of free-living wild animals. Loftin (1985) considered that, regarding wildlife, '. . . the doctoring of sick animals is of extremely limited value and for the most part based on biological illiteracy. It wastes scarce resources and diverts attention from more worthwhile goals.' These points are probably true in many cases but we will now consider under what circumstances veterinary interventions for the welfare of free-living wild animals might be appropriate or justifiable.

Factors influencing attitudes to interventions for the welfare of free-living wild animals

Several factors influence attitudes to intervention for wildlife welfare. These include the following:

(a) The extent to which man is responsible for the harm (eg oil spills versus stress due to cold weather).

(b) The extent to which harmed animals are under our stewardship (eg those on managed nature reserves versus those living entirely uninfluenced by man).

(c) The severity of the welfare problem (the number of animals affected and the degree of perceived suffering – see Kirkwood *et al* 1994).

(d) Cultural and economic factors. Economic, religious and other cultural factors, including the conservation status of the animal (endangered versus common) and its popularity (eg seal versus rat), influence interest in and resources for treatment of wildlife casualties.

Of these, popularity is an entirely illogical but manifestly powerful influence on public attitude. The conservation status is an important factor to consider but intervention on conservation grounds is well established and needs no further consideration here. The other points are the important ones in the context of this paper and we will discuss these before proceeding.

Because of human industrial and other activities and the extensive environmental changes that humans have brought about, we wittingly or unwittingly influence the fate of many wild populations and individuals (Kirkwood 1992; Sainsbury *et al* 1995). It can be argued that we have therefore some responsibility for the stewardship of these wild animals and for their welfare. Furthermore, human activities and environmental changes are often the direct cause of diseases and injuries in free-living wild animals (Kirkwood *et al* 1994; Sainsbury *et al* 1995). Those involved in wildlife rehabilitation argue that there is a moral obligation to give casualties caused by man a 'second chance' if possible (eg McKeever 1979).

Attitudes are also influenced by the perceived severity of the problem. The 1988 phocine distemper outbreak among common seals *Phoca vitulina* in the North Sea (Kennedy 1990) led to great public concern in several European countries. The disease caused severe distress in affected animals and there were calls for intervention even though there was no evidence that the epidemic was an unnatural (ie human-induced) event. Among the options debated at the time were euthanasia of affected animals to limit their suffering, treatment, and vaccination (Hall & Harwood 1990) of animals at risk of exposure to the disease. The epidemic led to the establishment of treatment and rehabilitation centres in Norfolk (UK) and elsewhere, which were funded by various animal welfare and protection charities.

Cultural and economic factors also have a great influence on attitudes to intervening for wildlife welfare. Providing high standards of husbandry and treatment for wild animals is expensive and funding for these endeavours is, with few exceptions, not easy to obtain. In view of this organizations tend to focus their resources on species that they consider important. Sometimes these are species that are relatively rare but many wildlife hospitals deal with common species. It has been suggested that techniques developed through treating common species may have important application in the future with endangered species (eg Coles 1985; Cooper 1989).

These points are pertinent to the consideration of whether or not it is ethical or right to intervene, taking into account other calls on resources, but they do not provide clear rules to assist with the decision. It appears that most people feel that there is a point at which it becomes ethically correct or, at least acceptable, to intervene, but opinions differ widely as to where this point lies and as to what forms of intervention are appropriate (eg euthanasia or treatment).

Whilst there may be some consensus that factors, such as the degree to which humans are responsible for causing the harm in a given incident and the degree to which the animals are under human stewardship, are relevant to whether or not intervention is ethical, neither are easy to assess objectively. It is almost always possible, when the real causes are not fully known, to attribute some or all of the blame for incidents compromising the welfare of wild animals (eg disease outbreaks) to human factors, and the desire to intervene is often justified in this way. Likewise the extent to which the fate of free-living animals is dependent on humans and thus the extent to which we have a responsibility for their welfare is also, at least partly, a matter of opinion.

Animal welfare implications

Wildlife medicine has developed such that techniques are now available for the successful treatment of many diseases and injuries of free-living wildlife. Active interventions which may involve these techniques are increasingly being undertaken not only for the conservation of populations of free-living wildlife but also for the welfare of individuals. Although such interventions can benefit welfare, there are several ways in which attempts to rehabilitate casualties may be counter-productive both for the animal itself and also for the populations into which it is released.

There are sound arguments for not intervening for the welfare of free-living wild animals that are sick or injured as a result of natural (as opposed to human-induced) processes, except perhaps to euthanase individuals that may be suffering from severe pain or distress. However, where the harm has been caused directly or indirectly by man and/or where the harmed animals are to some degree under human stewardship, treatment and rehabilitation is a course of action consistent with current ethical approaches to the welfare of farm, companion, laboratory and zoo animals.

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