



Munich Personal RePEc Archive

## **Wildlife Conservation**

Spash, Clive L. and Aldred, Jonathan

Department of Land Economy, University of Cambridge, UK

1998

Online at <https://mpra.ub.uni-muenchen.de/21132/>  
MPRA Paper No. 21132, posted 07 Mar 2010 02:56 UTC

# WILDLIFE CONSERVATION

Clive L. Spash  
and Jonathan Aldred

*Environment Series*  
Number 7



UNIVERSITY OF  
CAMBRIDGE

Department of  
Land Economy

# WILDLIFE CONSERVATION

by

Clive L. Splash and Jonathan Aldred\*

\*Cambridge Research for the Environment,  
Dept of Land Economy, University of Cambridge  
19 Silver Street, Cambridge CB3 9EP, UK.

**Series Editor: Clive L. Splash**

Environment Series 7

Dept of Land Economy  
University of Cambridge  
19 Silver Street  
Cambridge  
CB3 9EP  
Tel: 01223 337147  
Fax: 01223 337130  
E-mail: [wt10000@cam.ac.uk](mailto:wt10000@cam.ac.uk)

## **SLOUGH ESTATES**

The Department of Land Economy gratefully acknowledges the financial assistance received from Slough Estates plc in support of the work of Cambridge Research for the Environment.

The views expressed in this discussion paper are those of the authors and do not necessarily reflect those of the Department of Land Economy.

Published by the Department of Land Economy, University of Cambridge

© 1998 Clive L. Spash and Jonathan Aldred

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the copyright holder, for which application should be made in the first instance to the publishers.

A CIP Catalogue record for this book is available from the British Library.

ISBN 186190 0570

## ABSTRACT

*In this paper we consider how conservation has arisen as a key aspect of the reaction to human-initiated degradation and disappearance of ecosystems, wild lands, and wildlife. Concern over species extinction is given an historical perspective which shows the way in which pressure on wild and natural aspects of global ecology have changed in recent centuries. The role of conservation in the struggle to protect the environment is then analysed using underlying ethical arguments behind the economic, ecological and rights based justifications given for conservation. The moral considerability of species and individuals is reviewed and different positions contrasted, most importantly utilitarianism versus rights. A central argument with primary influence over economics is the utilitarian justification for action and this is explored with reflection upon the use of monetary valuation. Rights are then explored and the use of consequentialism in adjudicating different rights claims introduced. Human preferences can be seen as practically powerful in justifying conservation policy decisions, even when an animal-centred ethic has been adopted. Yet ecological and non-consequentialist expressions of concern characterise the entire problem in fundamentally different ways, e.g. biodiversity and ecosystems maintenance versus marginal species loss, designation of wilderness areas versus management of parklands. Leaving the wild in wilderness and the natural in Nature cannot then be reduced to preference utilitarianism as in the economic calculus.*

## **GLOSSARY**

- Biodiversity** The biological diversity of life described in terms of the range and type of genes, species, and ecosystems on the planet Earth.
- Conservation** The act of preserving, guarding or protecting from loss, decay, injury or violation.
- Contingent Valuation** A survey method used by economists to place a monetary value on non-market goods such as wildlife and aesthetics.
- Species** A biological grouping which shares a common pool of genes, the basic units of heredity, e.g., allowing successful interbreeding for bisexual organisms.
- Wildlife** Life found in an original undisturbed state, without domestication, cultivation or taming; commonly used with implicit reference to vertebrates.

## 1. INTRODUCTION

Wildlife conservation is a reaction to the increasing loss of species the rate of which has accelerated dramatically this century. Species loss has been highlighted by some notable cases of extinction and near extinction in recent centuries, such as the Dodo and the American Buffalo. In this century, large mammals and predatory birds have tended to be a focus for popular attention with non-governmental organisations (NGOs) trying to protect whales, lions, tigers, pandas and eagles. However, this has tended to treat wildlife conservation from a narrow vertebrate species perspective which risks neglecting the growing concern over ecosystem structure. Given the underlying concern for preserving life in a wild state, restricting attention to large readily identifiable species will clearly be inadequate, but is a result of a consequentialist tendency. That is reference to the preferences of the general public for guidance on how wildlife conservation is to proceed tends to lead to the neglect of plants, reptiles, insects and micro-organisms. The conservation of such wild, untamed life requires the recognition of the interdependence of plant and animal species mix in determining the ecological resilience of wildlife. Thus, wildlife conservation has moved from the idea that key species could be preserved in zoos to the protection of ecosystems, while NGOs involved in the area have transformed from passive clubs for the

study of natural history to active lobby groups for the environment and the maintenance of biodiversity.

Along with this dawning recognition of the breadth of trying to conserve wildlife has been a growing concern for the treatment of the wilder side of Earth by humans. As long as the losses driving the conservation movement were infrequent and localised they could be regarded as having limited and estimable consequences for humans. A general lack of concern is then a reflection of the relative weight given to species loss over other goals in human society and the low priority of the resulting loss. Today this has been refined to a high degree in the application by some economists of monetary valuation of the costs and benefits of species extinction. However, an alternative underlying motivation for wildlife conservation has been the protection of animal rights. While conservation of objects for identifiable ends is the central theme in the consequentialist approach, under a rights based system more turns upon the rights of non-human life forms to be wild and have self determination. The relative dominance of these two motivations is particularly relevant to the way in which wildlife conservation develops in the future.



## 2. THE NEED FOR CONSERVATION

### 2.1 Historical Roots of Concern

#### *(i) Creation*

About two millennia ago, the Roman poet Lucretius wrote about the changing world he saw around him and in particular mentioned ideas akin to those of Charles Darwin. That is he recognised features in the species he saw which had allowed them to survive, e.g., the cunning of the fox, the prowess of the lion and the speed of the stag in flight. Some species survived under human protection because of their usefulness to humanity. Others were theorised to have perished. Today this is unremarkable.

However, in the intervening period the dominance of Christian theology meant the suppression of such ideas as extinction. In the story interpreted from biblical texts God had given all creatures to man for his stewardship at the time of the creation and they had all been aboard Noah's Ark. There was an absence of the notion that species might become, or had become, extinct. This perspective became strong in the medieval period.

Despite the Protestant movement weakening the central authority of the Pope little change in the official story occurred. In fact Martin Luther reinforced the line that

all animals and fish appeared at once upon the word of God. The date of this creation was estimated a hundred years later by Archbishop James Ussher of Armagh, Ireland, as 4004 BC. This date persisted as a defence of the theory of creation and was employed by the English naturalist Philip Gosse in his book of 1857 on the subject.

However, the repeated discovery of dinosaur bones and skeletons cast doubt on the creation theory from the 18<sup>th</sup> Century onwards. In the 19<sup>th</sup> Century the theories of evolutionists such as Darwin took hold. Thus, no longer could the mysterious skeletons be regarded as animals that missed the boat (Noah's Ark) from the antediluvian era. The importance of this change in thinking was that now causes of extinction became a topic for discussion and soon concern.

### *(ii) Extinction*

While extinction is regarded to be a normal evolutionary process the rate of extinction induced by humans is of concern. Several causes of species loss over geological time have been postulated including climate change, ice ages, inter-species competition, and catastrophic events such as the impact of a giant meteorite. Fossil records show about nine mass extinctions in the past.

About 1,500 million years ago, the trilobite was the dominant life form. This crab like creature took on a variety of forms and sizes but largely died out about 500 million years ago taking a million years to do so. Around 250 million years ago, an extinction took place in which 50 per cent of all species are estimated to have become extinct with 96 per cent marine, 75 per cent amphibian, 80 per cent reptilian life forms disappearing. The dinosaurs were dominant for around 150 million years becoming extinct 65 to 70 million years ago. Mammals have been the most recent dominant species group arising over the last 25 million years or so, with the rise of mankind slowly in the last million years.

Mankind as a hunter may have aided in the destruction of species over the last 50 thousand years or more. For example, the first human migration in to the New World (North America) is estimated to have occurred about 35 thousand years ago. Large mammal species which had disappeared elsewhere but survived here then disappeared, probably aided by a warming climate. Similar mass extinctions are found in relation to the arrival of mankind in Australia and New Guinea 50,000 years before present, and in New Zealand less than a millennia ago with the extinction of large species of bird (e.g. the giant moa), lizard, frog and fur seals.

The reason for concern over extinction today is the rapid growth in its rate. By the middle of the 20<sup>th</sup> Century two species of animal were being lost every year and plant species were disappearing at similar or higher rates. Other wild life forms such as insects and micro-organisms have been neglected in this regard so their losses are unrecorded.

## **2.2 Conservation and Causes of Species Loss**

### ***(i) Diversity and Species Interdependence***

About 1.7 million organisms have been identified and named; their distribution is 6 per cent in boreal and polar latitudes, 59 per cent in temperate zones and 35 per cent in the tropics. However, there is a great ignorance as to the global diversity of species and attempting to account for the undescribed organisms thought to exist places the tropics as holding 86 per cent of global species. Species are interdependent in such a way as to make insects and invertebrates the building blocks and glue in existing habitat structure. Wildlife conservation projects often concentrate upon large vertebrates or admired plants while neglecting these other life forms. For example, in tropical forests insects are important because they: are the primary food for most small carnivores, are predators of seeds influencing species composition, and influence the structure and functioning of the ecosystem.

## *(ii) Extinction and Extermination*

Extinction can have non-human causes such as random catastrophic events, biological interactions (e.g., competition, disease, predation), physical stress, and frequent disturbance. The process of extinction prior to the dominance of mankind was a gradual one requiring millennia. Human induced extinction is therefore in a different class as the process can be extremely rapid requiring a few decades. Thus, some distinguish this anthropocentric extinction process by terming it 'extermination'. This term applies aptly to the dodo, the North American passenger pigeon, the great auk (the penguin of the northern hemisphere), and the giant moa of New Zealand. Some of these stories of extermination are apocryphal, others so well documented the names of the hunters who killed the last live individuals of the species is known.

In general, human induced extinction was historically due to hunting beyond the natural growth rates of species. However, the rapid rate of species extinction this century has been due to the increasingly widespread impact of human activities. The introduction of foreign species has been foremost amongst causes of extermination, e.g. introducing terrestrial mammals to New Zealand. Destruction of and encroachment upon habitat are now of great concern, and form the focus of attention in tropical forest conservation.

Chemical and organic pollutants, acidic deposition and general reductions in environmental quality all stress species if they are able to survive in the altered environment. The highlighting of this pollutant cause of extinction occurred most forcefully in the 1960s with the focus upon what was seen as the indiscriminate use of pesticides (herbicides and insecticides) by the agro-chemical industry. In particular, the scare over the use of DDT and the publication of *Silent Spring* by Rachel Carson in 1962 lead to legislation in the United States. These are persistent and widespread problems which go far beyond the agricultural sector. The build up of heavy metals, nitrates and acidic deposition has altered entire regions. Persistent pollutants have been released in to the environment so that damage to the genes of wild species has been occurring, leading to infertility, deformed and/or dead young.

### ***(iii) Concern for Conservation***

Wildlife conservation can be regarded as being based on one or more of three fundamental reasons. First, is the primarily economic argument. Humans are part of a larger environment with which they interact. This means wildlife provides a source of human welfare from food and clothing through to aesthetic and spiritual enrichment. In this way wildlife conservation is seen to preserve the potential for future human happiness via the uses which can be made of that wildlife in order to

create improvements in utility. Wildlife loss is then primarily of concern because it removes the ability of humans to benefit by exploiting biochemical, ecological and other wildlife properties. Second, is the related consequentialist but ecological concern over the role wildlife plays in ecosystem functioning, stability and resilience. The emphasis here is upon the interdependencies of species and the potential for ecosystems and their functions to be destroyed to the ultimate detriment of humanity. Because the ecological importance of any given species, in nutrient cycles, ecosystem productivity and structure, is largely unknown, precaution is suggested by this justification for wildlife conservation. Third, the concern is raised that wildlife extermination is a violation of species and other rights which humans have a duty to respect. However, before these viewpoints can be explored the issue of which life forms are to be given moral consideration must be addressed.

### **3. WHOSE LIFE IS TO BE CONSERVED AND ON WHAT GROUNDS?**

#### **3.1 Species and Individuals**

Two preliminary distinctions are required. First, between ethics which focus on conservation of a whole species and ethics which attend directly to individual members of that species. The concerns of wildlife conservationists have

increasingly centred around entire species, on the basis of the consequences of species extinction – and thus the depletion of global biodiversity – for the planet.

The question then arises of whether ‘the health of the planet’ is taken to matter in and of itself, or because this would adversely affect human quality of life.

The second, related, distinction is between the view that extinction of species (or individuals) is bad in itself, no matter what the consequences, and the view that the negativity of such an outcome derives from its consequences, which violate some other ethical principle. The possible consequences and principles will depend on the range of entities which enter into direct moral consideration.

Consider some endangered species of elephant. The extinction of each individual elephant may be held to be of moral concern, or only the extinction of the entire species, but our answer to this question tends to depend on a prior one – whether the elephants matter only insofar as their survival affects the interests of humans, or whether the interests of the elephants themselves are held to be worth considering. That is: are humans the only morally considerable creatures or are elephants also morally considerable?



### **3.2 Five Accounts of Moral Considerability**

There are at least five basic accounts of the range of moral considerability: it can be limited to humans alone, or extended to all vertebrates, to all living creatures, to non-living things, or even to whole ecosystems. The account adopted will have implications for the way in which wildlife conservation is put into effect.

#### ***(i) Only Human Interests Count***

In theory, human interests could be the sole concern in a variety of moral philosophies e.g., only human rights count. However, in wildlife conservation this ethic tends to be reflected as a variant of utilitarianism where the interest of humans alone is involved in the maximisation of happiness as the goal of society. An endangered species, such as the elephant, matters only insofar as its survival affects the sum total of happiness and unhappiness among humans in the society. Logically the next step for wildlife conservation policy is to obtain information about the effects on human happiness of the extinction of the threatened species, and this is discussed in the section on utilitarianism below.

#### ***(ii) Including All Vertebrates***

This ethic implies that all vertebrates (mammal, bird, reptile, amphibian, fish) are morally considerable, so that the direct consequences for the well-being of

the affected animals should be taken into account when formulating wildlife conservation policies. Adversely affecting the interests of vertebrates is to be taken into account, even if the demise of the individual or species is judged to be of no importance to present or future generations of humans.

Note that the centre of attention here is the individual animal rather than the species as a whole. Since vertebrates are held to enter into the moral calculus in their own right, they count as individuals for their own sake, rather than merely as a means to the end of conserving their species. Thus, perhaps contrary to expectations, this animal-centred ethic only provides indirect justification for wildlife conservation. Avoiding arbitrariness entails that equal interests are treated equally, so that, for instance, all adult elephants of a particular species will be granted equal moral considerability regardless of whether the species is threatened with extinction. In contrast, the wildlife conservation perspective makes species conservation the fundamental objective, implying that individuals in the set of elephants, which together form a viable population to maintain the species, count for more than 'marginal' elephants which may be added to this set.

Vertebrate-centred ethics may be subdivided further according to the categories of animals which are granted moral considerability. This may be limited to only

those higher mammals which have some form of self consciousness (e.g., apes, dolphins), or include all mammals, or be extended to include fish as well. Although the notion of wildlife conservation typically brings to mind images of furred creatures, most animals do not conform to this picture. In fact, in terms of numbers, the biologist Robert May has noted “as a rough approximation, every living thing on Earth is an insect”, which raises the next ethical position.

### ***(iii) Every Living Thing has Standing***

Ethics of this form aim to represent the interests of all living things, including invertebrates, plants, single-celled organisms, perhaps even viruses. Usually such arguments reject the claim that all living things are of *equal* moral significance, even if they all possess moral considerability. Judgements of the relative goodness of protecting an endangered species of mammal, as opposed to an endangered species of tree, will finally depend on a detailed evaluation of the consequences of these two preservation options. Such evaluation takes place on a case-by-case basis; nothing in general can be said about the relative moral significance of say mammals as opposed to other living things. An exception to this is the form of life-centred ethic sometimes known as biotic egalitarianism where all living things count equally, as discussed by Arnae Naess in his book *Ecology, Community and Lifestyle: Outline of an Ecosophy*. A problem with

such an approach in the current context is that it seems highly unlikely to be able to inform wildlife conservation decision-making: biotic egalitarianism would allow only quantitative comparisons – that two living things count for more than one – and hence almost all forms of human management of the natural environment would be ruled out.

*(iv) Consider All Natural Entities*

Despite this last point, some go even further in widening the scope of moral considerability. Non-living entities such as mountains or rocks, might be granted consideration ‘for their own sake’. Such ethics have met with a considerable degree of scepticism, so it is important to emphasise that they make no attempt to discern a consciousness among rocks, or establish that a rock is striving unconsciously to achieve certain goals and therefore can be said to have interests. Rather, these ethics aim to provide support for the idea that certain activities such as mining might be wrong simply because of the damage they do to the fabric of the natural world, even though no living things might be affected.

*(v) Ecological Holism*

Ecological holism represents the culmination of the view that humans have certain duties towards the preservation of the natural world; nature itself should

be preserved as far as possible rather than any particular entities within it. Thus, ecological holism counts whole ecosystems and the wider biosphere as morally considerable. It is particularly associated with Aldo Leopold's 'Land Ethic', famously elaborated in J. Baird Callicott's *In Defense of the Land Ethic*. The distinctive feature of this position is the shift of emphasis from part to whole, from individual to community. According to this view, the extinction of some species of wildlife would not matter because it entailed the demise of individual members of the species, nor would it matter for its own sake. Instead it matters only insofar as it undermines the sustainability of the ecosystem as a whole. Thus the land ethic is concerned more with endangered species than less threatened ones, and largely indifferent to the plight of domestic animals. More starkly, the violence of the predator-prey relationship cannot be said to serve the interests of the prey and hence will be regretted by some animal-centred ethics, but it is a relationship Leopold respects and would not disturb. Clearly, an ethic of ecological holism directly supports the shift towards biodiversity maintenance rather than species conservation.

### **3.3 Implications of Moral Considerability**

#### ***(i) Contrasts between Different Approaches***

The different environmental ethics outlined briefly here have a number of implications for wildlife conservation. If only humans are morally considerable, then specific species should be preserved only to the extent that a desire for this is reflected in human preferences. As noted above, moral considerability for vertebrates gives individual animals standing, which may conflict with the aim of wildlife conservation to maximise the number of species preserved. This is particularly so when the specific form of animal ethic in question limits moral considerability to a number of key species, such as 'representative' higher mammals. A situation might arise where the dominance of such key species in their habitat threatens to lead to the extinction of another species which is ignored according to the ethic. Alternatively, the limited culling of members of a key species could be sanctioned in order to ensure the survival of the other threatened species, but this would violate the vertebrate-centred ethic.

A similar problem arises when the domain of moral considerability, according to an ethic, is wider than that implicit in traditional wildlife conservation policy. Increasingly vertebrate-centred ethics extend moral consideration beyond a limited number of higher mammals to include all those creatures which, in some

meaningful sense, have the capacity to suffer. In contrast, the traditional wildlife conservation approach seeks to preserve key species at the expense of others.

Ethics which consider all living organisms as valuable for their own sake obviously make much stronger claims on us than the wildlife conservation perspective. However the latter may sanction similar environmental policies to these broader ethics, because the objective of species preservation demands that a balanced, fully functioning habitat for the species is maintained, which in many cases will ensure the flourishing of plants and other organisms just as readily as attending to them for their own sake. On the other hand, the preservation of species in zoos and plants in seed banks is equally valid under the wildlife conservation approach, but is often not supported by broader ethics. As noted, ecological holism supports biodiversity maintenance rather than species conservation but when combined with other ethics it may yield a position much closer to the practice of wildlife conservation. For instance, ecological holism and an animal-centred ethic taken together imply policy measures should focus on the preservation of those animal species which support biodiversity and other aspects of the flourishing of the ecosystem.

## *(ii) Human-centred versus Animal-centred Ethics*

The differences between a narrow anthropocentric viewpoint and the wider views outlined above have been dominant in policy debate. In sum, a human-centred ethic depends on individual preferences for conservation while an animal-centred ethic offers at least the possibility of supporting wildlife conservation measures directly. However in practice this difference is more apparent than real because of the impossibility of directly measuring the interests of animals. Policy-makers will often rely on human value judgements to determine the extent to which a given conservation proposal serves the interests of the animals. Yet none of the five basic positions described above seem to correspond closely to the kinds of human value judgements which are made to justify wildlife conservation.

In particular, the ethics of wildlife conservation have become inextricably interlinked with contemporary debates over 'animal rights', with most ethical questions being couched in 'animal rights' language. This is partly due to the dominance of a rights-based discourse throughout the ethical debate, particularly in the United States. Such rights are seen to facilitate clear and readily understood 'rules-of-thumb' concerning which actions are sanctioned and which are prohibited, rather than requiring lengthy debate on a case-by-case basis. The



extent to which the animal rights perspective supports wildlife conservation can be examined and contrasted with a utilitarian basis for policy.

## **4. UTILITARIAN ARGUMENTS**

### **4.1 The Case for Concern**

The utilitarian argument for wildlife conservation recognises mankind as the cause of the deliberate destruction of large numbers of species. The question is whether some species are more useful than others and therefore deserve to be saved, i.e., whether scarce resources should be used to save them. This in turn implies prioritising species in order of destruction potential. Norman Myers supports this argument in his book *The Sinking Ark* where he rejects saving species “come what may”. For him and others the issue is whose needs are served by the conservation of species, and how does saving a species enhance the long-term welfare of humans.

### **4.2 Ethical Basis of Consequential Conservation**

The consequentialist rationale for wildlife conservation is forced to address ethical concerns despite the tendency of economists valuing wildlife to avoid these issues. Similarly, wildlife conservation on the grounds of the scientific value of biodiversity still ultimately rests on how much ‘better’ a future world in

which that value is preserved would be compared to alternative futures. No matter how 'better' is defined, an ethical claim is being made.

A consequentialist view of the value of animals adopts a different account of moral considerability from the rights based approach: it expressly holds that the moral significance of preserving different animals will depend on the consequences of such acts of preservation. Moreover, unlike the animal rights account which necessarily assumes an animal-centred ethic, a consequentialist view of the value of animals may be couched either in terms of the animal-centred ethic, or be limited to a human-centred ethic alone. Put another way, the consequentialist account may consider only those consequences which affect humans (including the adverse effects on human well-being which arise from the implications for animals of some action), or extend to consequences which affect the interests of animals directly, regardless of whether these consequences have any effect on human well-being.

Historically, the most influential version of consequentialism has been utilitarianism. Utilitarianism is egalitarian in the sense that it considers equally the interests of all beings affected by an action. In particular, it considers equally the abilities of all beings to suffer. As Jeremy Bentham wrote in *The Principles of Morals and Legislation*, 1789: "The day may come when the rest

of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny ... The question is not, Can they reason? nor Can they talk? but Can they suffer?" (p. 273).

In modern times, Peter Singer, *Practical Ethics*, has perhaps been the most influential of those offering a more sophisticated utilitarian defence of the value of animals. Singer's approach, as a version of consequentialism, evaluates consequences in terms of the extent to which they satisfy the preferences of the agents granted moral considerability. Following Bentham, this is defined to be all creatures with the capacity to suffer. This evaluation of preference satisfaction can become quite complicated.

Some of the ethical problems with this approach can be illustrated by the following example. Five survivors are in a lifeboat, which only has the capacity to support four. All weigh approximately the same and would take up approximately the same amount of capacity. Four of the five are normal adult human beings, while the fifth is a dog. If one must be thrown over board to prevent all five perishing, whom shall it be? For instance, throwing any one of the humans overboard will not only fail to satisfy the presumed preference of the individual for continued existence, but cause great suffering to that individual's family and friends. In addition, the argument is made that although both dogs

and humans have the capacity to suffer, the total amount of suffering experienced by a human during the course of anything other than an instantaneous death exceeds that of a dog. By contrast, all such consequential considerations are irrelevant if all individuals have the right to life: the non-consequentialist approach to the lifeboat example will be discussed below.

### **4.3 Monetary Valuation of Wildlife**

Here the influence of modern market economics is felt, with its emphasis on the sovereignty of the consumer, whose decisions about his or her purchases – or sources of happiness – are to be respected, rather than overruled by the moral philosopher. Thus, in seeking information about the consequences of some potential species extinction for human happiness, policy makers increasingly turn to environmental economists, who in turn refer to individual preference information. As with items of food, clothing, and other commodities, a market for conservation of, say, elephants is envisaged. The extent of consumer demand for elephant conservation in that market is then taken as a proxy measure of how much human happiness is affected. As no such elephant conservation market actually exists consumer preferences are measured in hypothetical markets where monetary valuations are gained on the basis of contingent factors; a process termed the contingent valuation method.

The contingent valuation method (CVM) involves the direct questioning of individuals by means of a survey, typically to obtain how much the individual would be willing to pay to ensure the protection of some endangered species of wildlife, or, far less commonly, how much they would be willing to accept in compensation if the species were exterminated. Three elements can then be identified. (i) A description of the species and habitat to be valued, which may be detailed enough to include a schedule giving the probabilities that various numbers of the species will survive if preservation is attempted. (ii) A method by which payment or compensation will be made. (iii) A method of eliciting the monetary values. In a survey of 20 U.S. studies, covering 18 rare, threatened and endangered species, per household preservation costs fell well below the benefits revealed in the hypothetical contingent market, even for the most expensive project. Annual willingness to pay ranged from a low of \$6 per household for fish such as the Striped Shiner to \$95 for the Northern Spotted Owl and its old growth habitat (see, for example, Jakobsson & Dragun 1996; Loomis & White 1996).

Non-economists are often surprised by the apparent crudeness of contingent valuation, but the US District Court of Appeals has upheld the values obtained, a 'blue-riband' panel assembled by the US National Oceanic and Atmospheric

Administration (including three Nobel Laureate economists) has endorsed the method, and test-retest reliability studies confirm internal validity. The result of refinement has been to achieve statutory requirement in the US whenever compensation following industrial accidents is to be determined. More importantly for wildlife conservation, the US Congress, in re-authorising the Endangered Species Act, may determine that a cost-benefit analysis, and by implication contingent valuation, is required to support a listing decision.

There are many economic criticisms and corresponding refinements in the literature on contingent valuation, and more generally cost-benefit analysis (see Hanley and Spash 1993). Ethical criticisms have been much more fundamental, including claims that: (i) the procedure treats species preservation as a good which is 'consumed' merely for the uses and facilities it provides; (ii) environmental species cannot be itemised as commodities of monetary value; (iii) respondents are neither willing nor able to make trade-offs between species preservation and monetary alternatives. Environmental economists have largely ignored objections (ii) and (iii). Their response to (i) has been to try to capture 'existence value' in their surveys, meaning the value to an individual of some species quite apart from that associated with any actual or potential use of it by that individual. This derives from the satisfaction of knowing that a particular

species simply continues to *exist*, that is, with a sustainable population in its native habitat.

Existence value appears to admit the possibility of an animal-centred ethic, albeit one where, by default, the judgements of individuals are relied upon to determine the interests of the animals. Certainly the many definitions of existence value in the literature reflect an attempt to capture a value which goes beyond the direct interests of humans in species preservation. Humans may recognise values which are unrelated to either human interests or those of an extended moral community including animals. Examples involve the language of awe, reverence and respect rather than benefit and cost. They include our wonder at the marvel of a setting sun, or the sense of raw nature in a wilderness area. The danger here is that CVM, in focusing on the narrow consequences for humans of a wildlife conservation proposal, will overlook altogether the broader ways in which we value nature. Bernard Williams concludes: “the human concern for other, non-human and non-animal, effects is misrepresented if one tries to reduce it simply to a kind of human self-concern” (Williams 1995, p. 235).

## 5. RIGHTS AND WILD THINGS

### 5.1 The Animal Rights Case

Attributing rights to animals is a particular form of animal-centred ethic rather than upholding a more general view that animals deserve moral consideration. Rights-based approaches to ethics are non-consequentialist and thus often associated with Kant, although a position which treats rights rather than obligations as fundamental can only be loosely described as Kantian. Kant in *Lectures on Ethics* (1930, p. 239) nevertheless showed concern for animals: "The more we come in contact with animals the more we love them, for we see how great is their concern for their young. It is then difficult for us to be cruel in thought even to a wolf." A classic modern defence of animal rights is Tom Regan's *The Case for Animal Rights*. Regan essentially holds that only beings with inherent value have rights. Inherent value is the value that the being possesses independently of its value to others. For the purposes of the discussion here, this may be understood as equivalent to a creature being morally considerable. Only self-conscious beings, deliberate actors capable of having beliefs, desires and goals for the future, can have inherent value. Regan holds that all mammals over a year of age, if not mentally defective, can have inherent value on this definition, and thus possess rights. Animal rights are universal



moral rights, rather than legal rights, so they remain the same as we move from one human society to another. What then is the difference between the animal rights ethic and the argument, discussed above, that 'all animals' are morally considerable?

## **5.2 Rights and Moral Considerability**

Crucially, on most rights-based approaches, all beings with inherent value have it equally; thus rights are not possessed to differing degrees by rights-bearers. Although this position has the virtue of being egalitarian, it faces difficulties when there are conflicts between rights. In contrast, the notion of moral considerability makes no claim about the relative moral significance of different creatures, and allows for variations in the degree of consideration attributed to different agents. Thus, the animal rights approach represents a particular account of moral considerability.

We can return to the lifeboat example to analyse the conflicts between rights in that situation. Regan argues that the dog must be sacrificed, because the harm done to the dog, if thrown overboard, is less than that done to a human, in throwing one of them overboard. Indeed, Regan goes further by maintaining that, in general, sacrificing any number of dogs would be better than the death of

four humans. Animal rights activists might reject this approach because of the downgrading of the animals' relative position and the weighing up of consequences. In this case, making a choice between conflicting rights results in an appeal to welfare consequences. Human capacity for suffering is then judged greater than that of dogs therefore humans are to be preserved in preference to dogs. For wildlife conservation policy, this account leaves open the possibility that, for instance, some species of elephant should be exterminated if it threatens the survival of some species of higher primate.

### **5.3 Animal Rights versus Consequentialism**

#### ***(i) Similarities***

The preference utilitarian may reach the same conclusions in the lifeboat example as Regan does with his rights-based account. This is surprising given the traditional antagonism between consequentialist and non-consequentialist right-based ethics. Certainly in principle the positions of Regan and Singer are capable of reaching very different conclusions. However in practice – and this includes issues of wildlife conservation – the two theoretical approaches in their more plausible formulations will often lead to convergent policy recommendations. Consider a species of elephant which is threatened with

extinction by a development proposal which would destroy its habitat. Singer's interpretation of preference utilitarianism would almost certainly rule out this proposal because of the adverse consequences of the species' extinction for: (a) the elephants themselves, (b) animals in their ecological community dependent on the elephants' continued existence, and (c) human welfare. These considerations might weigh so heavily in the utilitarian scales that it would be almost impossible to outweigh them. This problem is easy to resolve in terms of Regan's position: saving the elephants does not, it is assumed, involve the sacrifice of any other species, so the utmost must be done to save them.

### *(ii) Problems and Differences*

The language of rights may be an unpromising expression of our concern for animals, because that language is designed with 'normal' adult humans in mind.

For example, rights of ownership can only have meaning in a community of agents who recognise that they owe to each other, and are owed by each other, certain forms of behaviour. How animals are to become full members of such a moral community is unresolved because they lack certain capacities of the archetypal rights-bearer, such as the ability to negotiate conflicts of interest, to plan, choose and accept responsibility for actions. However, this criticism of animal rights is easily extended to rule out rights for young children and

mentally defective adult humans. This leaves the critique valid, but requires an explanation of the wider implications, and, for example, how a line can be drawn between animals and humans lacking some key capacities of a rights-bearer.

Perhaps more worrying for Regan's animal rights account is its apparent tendency to contradict itself. The rights-based account grants by definition equal moral significance to those creatures treated as morally considerable, yet, in adjudicating between competing rights claims in the lifeboat example, some animals are to be regarded as more equal than others. Moreover, in deciding that the dog should be thrown overboard, Regan appears to justify this decision on consequentialist grounds – in terms of relative harms. These difficulties will be side-stepped by a rights-based account which denies the eventual trade-offs in terms of relative harms which Regan admits when determining which creatures should be sacrificed. But such an approach still needs to determine how a decision is to be made when there are conflicting rights. Regan's account will be equally powerless when neither of the conflicting rights are rights to life. In the earlier example, the proposed development might significantly increase the nutritional intake of numbers of humans living at subsistence level, but erode the habitat of the elephant, perhaps leading to greater competition for food amongst

elephants. The rights-based account appears unable to resolve this dilemma without some appeal to consequences.

If the rights-based justification for wildlife conservation must in practice perform some, albeit constrained, evaluation of consequences, then the evaluation procedure will be crucial. Granting that all animals are morally considerable is inadequate. One debate here revolves around the efficacy of using scientific experts to determine animal interests. If, as with humans, these interests lack a specific, 'correct', form and sympathy with the animals' way of life is mainly required, then the judgement of experts would be unnecessarily privileged over that of lay people. Despite adopting an animal-centred ethic, the justification for wildlife conservation may still come to turn on human preferences. The danger here is that this preference information may be too impoverished, or too unreliable, to capture certain aspects of our concern for wildlife. Thus, for wildlife conservation policy in practice, the relevance of preference information, and the means by which consequences are measured more generally, may matter more than whether the underlying conservation ethic is rights-based or consequentialist.

## 6. CONCLUSIONS

Wildlife has formed a focus for environmental concern with considerable emphasis placed upon protecting specific species of vertebrates, e.g. the lions of 'Born Free'. The arguments for this conservation can be viewed as partially related to the expression of individual human preferences which have seen the rise of conservation organisations such as the World Wildlife Fund (WWF). Economists were quick to recognise the role of these human preferences as an indicator which might be useful for policy purposes. This led to the development of conservation arguments based upon consequentialist reasoning. The most refined example is the use of the contingent valuation method to estimate the value of endangered species and suggest the extent to which resources should be used to prevent their extinction or reduce their rate of decline, e.g. elephants, whales, the corn crake and other birds. These studies are important in the debate over wildlife conservation because of the way in which they characterise the expression of concern. This consequentialist motive differs from ecological and non-consequentialist ethical motives.

In the latter regard, this economic viewpoint contrasts with an alternative expression of the need to conserve wildlife as found in animal rights. Animal rights also imply a position which falls far less comfortably under the title of

conservation. Conservation and consequentialism in essence allow for trade-offs in terms of species' freedoms and allow for individual animals to be treated as expendable. Even when the consequences for all species are to be taken into account a hierarchy of importance is normally imposed so that human welfare comes out on top. The expression of moral considerability under an animal rights perspective tends to deny what is regarded as an inequitable treatment of different species. However, when rights conflict a consequentialist approach may be invoked. Thus, the current concern for the rate of human induced species extinction centres the ethical debate on the conflict between human welfare and other species' needs.

The complexity of determining consequences, and an appeal to public preferences for guidance, has tended to lead wildlife conservation into focusing on key species to the neglect of wider concerns. Thus, the framing of the issue of wildlife conservation as species preservation can be contrasted both with the wider concern for biodiversity maintenance and with more narrow individual moral considerability. Concentration on biodiversity maintenance emphasises both genetic and ecosystem diversity but neglects the individual. This can be seen as consistent with the underlying driving force behind the emphasis of 1950s conservationists on specific species more as a means of avoiding reductions in

ecosystem diversity. Extinction of the wild lion and tiger is then only a symptom of the loss of entire ecosystems and a tool for their preservation.

The modern environmental concern is more directly focused upon the less tangible aspects of wildlife conservation and less so on key species. In addition, ecological conservation is dynamic because it requires room for ecosystems and their components to change and adapt. In this way the ability of reflection upon supposedly static individual human preferences to inform public policy appears limited; a point some economists have been reluctant to admit. Wildlife conservation viewed as economically rational behaviour is far removed from modern wild land preservation with its emphasis on ecosystems functions and resilience where species come and go. Wildlife conservation as traditionally understood is then only a small part of that modern movement for environmental preservation and this can help explain why, for example, WWF now stands for World Wide Fund for Nature.

The traditional wildlife conservation perspective may also conflict with some of the most deep-rooted concerns for the environment. For many the genesis of nature conservation lies in a desire to preserve a nature which is neither controlled nor fashioned by humans but is simply *natural*. But wildlife conservation as species preservation already implies an intervention in nature



which degrades this ideal. Preserving a 'wilderness' means preserving a definite, delimited wilderness. Most starkly, the disappearance of a species can be a natural process of ecological evolution, and human attempts to counter that process seem to imply unnatural intervention. Rights for ecosystems to evolve and individual species to compete successfully may express the ecological perspective. This returns us to Leopold's land ethic, which seeks to preserve the diversity, integrity, beauty and authenticity of the natural environment, rather than having some form of humanitarian concern with individual animals. Reconciling wildlife conservation in terms of species preservation with this genuinely ecological approach to nature may be impossible. Of course the immediate and pressing concern is over the rate of species extermination and its moral implications, but the wider meaning of conserving life which is wild also confronts conservationists on a daily basis.

## ACKNOWLEDGEMENTS

A related version of this discussion paper appears in *Encyclopedia of Applied Ethics, Volume 4*, Academic Press, 1998.

## REFERENCES

- Bentham, J (1789) [1996] *The Principles of Morals and Legislation*. Oxford: Clarendon.
- Callicott, J B (1989) *In Defense of the Land Ethic: Essays in Environmental Philosophy*. Albany, New York: State University of New York Press.
- Carson, R (1962) [1987] *Silent Spring*. Boston: Houghton Mifflin.
- Hanley, N and C L Spash (1993) *Cost-benefit Analysis and the Environment*. Cheltenham: Edward Elgar.
- Jakobsson, K M and A K Dragun (1996) *Contingent Valuation and Endangered Species: Methodological Issues and Applications*. Cheltenham: Edward Elgar.
- Kant, I (1930) *Lectures on Ethics*. London: Methuen.
- Loomis, J and D White (1996) "Economic benefits of rare and endangered species." *Ecological Economics* 18: 197-206.
- Myers, N (1979) *The Sinking Ark: A New Look at the Problem of Disappearing Species*. Oxford: Pergamon Press.
- Naess, A (1989) *Ecology, Community and Lifestyle: Outline of an Ecosophy*. Cambridge: Cambridge University Press.
- Regan, T (1983) *The Case for Animal Rights*. London: Routledge & Kegan Paul.

Singer, P (1993) *Practical Ethics*. Second edition. Cambridge: Cambridge University Press.

Williams, B (1995) *Making Sense of Humanity*. Cambridge: Cambridge University Press.

**Department of Land Economy**  
**Environment Series Papers**  
**Series Editor: Clive L. Spash**

- |   |                                             |      |                                                                                                |
|---|---------------------------------------------|------|------------------------------------------------------------------------------------------------|
| 1 | Falconer, Katherine                         | 1996 | Investigation of Arable Production and Pesticide Usage Using Factor Analysis                   |
| 2 | Spash, Clive L.                             | 1996 | Environmental Management without Environmental Valuation?                                      |
| 3 | Vadnjal, Dan                                | 1996 | Willingness to Pay or Willingness to Accept in Contingent Valuation?                           |
| 4 | Hodge, Ian                                  | 1997 | Farm Structure, the Environment and Policies to Reduce Nitrogen Leaching                       |
| 5 | Hatfield Dodds, Steve                       | 1998 | The Idea and Implications of Sustainable Development: A map for policy analysts                |
| 6 | Hatfield Dodds, Steve                       | 1998 | Beyond Consumerism: Ideas of progress and well-being in the search for sustainable development |
| 7 | Spash, Clive L. and Jonathan Aldred         | 1998 | Wildlife Conservation                                                                          |
| 8 | Villena, Marcelo J. and Mauricio G. Villena | 1998 | Analysing Economic Strategies for Air Pollution Control in Santiago, Chile: An empirical study |

Available from:

Publications Secretary  
Department of Land Economy  
University of Cambridge  
19 Silver Street  
UK - Cambridge CB3 9EP

Tel. ++44 (0)1223 337147  
Fax. ++44 (0)1223 337130  
E-mail: wt10000@cam.ac.uk

Papers are £5.00 including p&p; cheques payable to University of Cambridge