

Nature and Humanity

Mike Alexander May 2006

This paper is my personal view of nature conservation, so I thought that I should begin by introducing myself:

My passion for conservation began as a 13 year old boy when I was taken by a schoolteacher on a day visit to Skomer Island NNR. It proved to be a life-changing revelation. Although I had no idea what being a Warden meant, by the end of that day I had decided that I was going to be the island's Warden. With that goal in mind, I worked as Warden or Assistant Warden on various reserves in Britain and Canada, including the islands of Skokholm and the Galf of Man. Eventually, my boyhood dream was realised in 1976 when I became Warden of Skomer. The ten years that I spent on the island confirmed and consolidated everything I had ever believed about the importance of conservation.

After leaving Skomer, I joined the Nature Conservancy Council (now CCW) in 1986 as Warden of 5 National Nature Reserves, including Morfa Harlech, Morfa Dyffryn, Rhinog and Cader Idris. Faced with the challenges of using my time efficiently across such widely varying sites, that included woodland, sand dunes and mountains, I returned to the ideas that had been simmering in the back of my mind since Skomer days and began looking for a way to develop a more structured and effective management planning system. Working with a friend and colleague, James Perrins, we created a computer-based planning and recording system. This eventually became the Countryside Management System (CMS), which is now widely used throughout UK. I remain closely involved with CMS, I am the general secretary of the CMS Consortium and have recently completed my third management planning guide to accompany the computer system.

In 1991 I became Conservation Management Coordinator for CCW, with a key responsibility for the management of the National Nature Reserves in Wales.

I have worked with a number of organisations throughout the world to provide training and give advice on planning systems. I have been involved in the development of management planning for groups as diverse as the Costa Rica National Park Service, the Uganda Wildlife Authority, the Wildlife Institute of India and the Tanzanian Department of Forestry, and was responsible for developing the current management planning guidelines for Ramsar. I also run regular professional training courses, mainly at Plas Tan y Bwch in North Wales.

Most recently, I was elected Chairman of PONT, a new organization for Wales, which is a member of the Grazing Animals Project (GAP). PONT's aim is to establish grazing schemes that will benefit the wildlife, landscape and cultural heritage of Wales.

Lines Written a Few Miles Above Tintern Abbey - William Wordsworth (1770 – 1850)

And I have felt
A presence that disturbs me with the joy
Of elevated thoughts: a sense sublime
Of something far more deeply interfused,
Whose dwelling is the light of setting suns,
And the round ocean and the living air,
And the blue sky, and in the mind of man:
A motion and a spirit, that impels
All thinking things, all objects of all thought,
And rolls through all things. Therefore am I still
A lover of the meadows and the woods,
And mountains; and of all that we behold
From this green earth; of all the mighty world
Of eye and ear, both what they half create,
And what perceive; well pleased to recognise
In nature and the language of the sense,
The anchor of my purest thoughts, the nurse,
The guide, the guardian of my heart, and soul
Of all my moral being.

INTRODUCTION

Since this paper is intended to provoke discussion, much of what I say should be seen as a starting point for debate. In March 2005, I presented a paper (Are we pulling together or pulling apart?) at the Welsh Conservation Management Conference in Caernarfon. The inspiration for the paper came from two sources. The first was an after-dinner talk by Professor John Rodwell in which he asked a simple but thought provoking question: 'Where will tomorrow's plant communities come from?' The second was the theme of the conference itself, 'working in partnership'. This paper is a development of my earlier presentation, so I will summarise the key sections in that presentation before moving on to consider the implications for nature conservation and particularly for conservation management.

Change

I will begin with a brief reminder that environmental change, and particularly the unpredictable nature of change, is probably one of the greatest challenges to our ability to conserve wildlife.

Domicilium (1857)

The answer I remember. 'Fifty years
Have passed since then, my child, and change has marked
The face of all things. Yonder garden-plots
And orchards were uncultivated slopes
Oe'ergrown with bramble bushes, furze and thorn:
That road a narrow path shut in by ferns,
Which, almost trees, obscured the passer-by.
Our house stood quite alone, and those tall firs
And beeches were not planted. Snakes and efts
Swarmed in the summer days, and nightly bats
Would fly about our bedrooms. Heathcroppers
Lived on the hills, and were our only friends;
So wild it was when first we settled here.'

The first known poem of Thomas Hardy (1839 - 1928)

Thomas Hardy, in common with many others, understood and commented on the changing nature of our countryside. Brian Huntley and Judy Allen (1999), in their paper, **Ecosystem change: a paleoecological perspective**, begin their summary with '*Records of Quaternary environmental conditions complement historic records and clearly indicate that environmental change is the normal state of affairs.*' Today we have so much evidence to demonstrate that our climate is changing, and the balance of scientific opinion suggests that human influences are significant.

'there is new and stronger evidence that most of the [climatic] warming observed over the last 50 years is attributable to human activities'

UN Intergovernmental Panel on Climate Change, Synthesis report 2001

Whatever the reason, we can be certain that there will be change, though we are not sure of the direction or degree of change. There always has been, and always will be, change. However, there are few signs that mainstream conservation managers are prepared for change, and the need to question the suitability of current wildlife legislation to meet that challenge is discussed below.

ARE WE PULLING TOGETHER OR PULLING APART?

Extracts from my paper on nature conservation in Wales, Caernarfon 2005.

The main part of my paper was based on a series of recorded interviews. The interviewees were:

- Royal Society for the Protection of Birds - **Tony Prater**
- Pembrokeshire Coast National Park – **Mike Howe & Michel Regelous**
- Wildlife Trusts Wales – **Madeleine Havard**
- The National Trust – **Helen Buckingham, John Harvey & David Bullock**

Each interviewee or group were asked the same questions and their answers were recorded on tape. They were not given any prior indication of the questions since I did not want a series of prepared statements.

Is there a common vision for Wales?

I wanted to find out if the various conservation organisations in Wales shared a common vision for the future. I made it clear to the interviewees that, at this stage, I did not want them to take account of any of the constraints that might obstruct their ability to obtain their vision. The responses were not identical, but were similar enough for me to summarise their collective vision as follows:

*We must take a holistic view that recognises the relationships between wildlife, landscape, culture, and public use and enjoyment. Our vision is not an attempt to recreate the past. The Welsh countryside will have a rich, diverse, resilient and sustainable range of habitats and species, which are natural for Wales. In some areas natural processes will deliver systems that are breaking down organic matter, reducing nutrient losses into the environment, and delivering a range of outcomes, some of which may not be predictable. **Our vision is obscured by the potential for climate change.***

What does nature conservation mean?

(If we are to share a vision we need a common language. Do we share a common definition of nature conservation?)

A statement by one of the contributors captured the essence of all the responses:

'Conservation is not the maintenance of the status quo. It is managing what we have to pass on as much as we can to future generations, given that there will inevitably be changes in the condition of habitats. Taking it further, we would argue that one can make a distinction between the processes which go on in any natural and semi-natural systems - things like birth, death, evolution, extinction etc. - and the outcome of those processes, which are certain abundances of species. In my own view, it is more important to maintain those processes than to maintain a particular product at the end. One can say that the variety of outcomes of those processes will all have biodiversity/nature conservation values. They will be different values, but they could all be equally acceptable.'

Dr John Harvey 2005

A summary of the responses from all contributors:

- Nature conservation is primarily concerned with the relationship between people and nature.
- Nature conservation is not fossilisation or preservation. It is not necessarily about preventing any change to the current situation or recreating conditions that may have existed at some time in the past.
- Nature conservation is not preservation, but preservation can be a useful conservation tool. We may need to preserve, or hold reservoirs of, wildlife until such time as natural processes can be reinstated.
- Nature conservation is about the future. It is about developing, or enabling the development of, populations, habitats and ecosystems that are resilient and robust enough to survive environmental change.
- It is about preventing as much loss as we can.
- It is about enabling natural processes and accepting the outcomes of these processes even when the outcomes are unpredictable.

Note: A moral or ethical dimension was clearly implied, but there were no explicit statements to this effect. However, given the emphasis on enabling process, particularly where the outcomes are not defined, we might conclude that the interviewees were adopting a biocentric position.

Legislation

At an early stage I asked the interviewees what factors were most likely to enable or obstruct their ability to obtain their vision. All identified legislation as one of the most significant constraints. I then asked them how legislation contributed towards meeting their vision for Wales?

The overwhelming response was that current legislation is inadequate. The main issue was that legislation, or the interpretation of legislation, did not favour dynamic, changing processes. Legislation is about preservation and not conservation, and the preservation of habitats and species in their currently defined state may not be possible or desirable. It was recognised that preservation has some value in that it will provide refuges, or reservoirs, for wildlife that will contribute to nature conservation.

Two of the interviewees felt that this issue was not insurmountable as legislation, or the interpretation of legislation, will change with time.

One of the interviewees gave the following response:

'I think that the scientists among us are increasingly becoming aware of the dynamism of communities and processes, and would be supportive of these concepts. But, if you talk to policy makers and say that we want to change our language and want to push these newer ideas, they will respond by saying 'you risk throwing the baby out with the bathwater'. Imagine that you want to suggest to a politician who has publicly subscribed to the value of nature conservation in the form of a particular species composition of a community or set of communities, and who has introduced legislation to safeguard those states, that we, and he or she, have got it wrong. This is a very dangerous situation in political policy terms. Nobody in the conservation movement with sufficient clout is willing to stand up and say that the emperor has no clothes.'

Dr John Harvey 2005

NATURE CONSERVATION - FURTHER VIEWS

WHAT IS NATURE CONSERVATION?

A personal relationship, a matter of decisions about human actions in the light of their implications for non human nature. I believe that perhaps the most critical element in conservation is the form of human engagement with non-human nature. Bill Adams (1999)

Nature conservation is a highly organised system for expressing environmental preferences. Adam Cole King (2005)

Nature conservation is something that we do, a human or anthropogenic activity. We are the only species that engages in this activity. No other species presumes to make decisions about our environment or the fate of the other species that inhabit this earth.

Given this unique and very privileged position I am reminded of my old school motto: '*Ymhob braint y mae dyletswydd*'. Loosely translated into English this means '*with every privilege there is an obligation*'. I firmly believe that we have a moral obligation to protect the natural world, that wildlife has intrinsic value regardless of its value to humanity. Others may not share this belief but will recognise that nature provides resources to satisfy both our physical and emotional needs. They may also realise that our survival on this planet is inextricably linked to the survival of nature. Thus, nature conservation is not only something that we do but something that we must do.

WHY CONSERVE NATURE?

Anthropocentric and biocentric values

In this section, I will briefly consider the anthropocentric versus biocentric debate, though I don't have the expertise to delve too deeply into this, and I dare not venture as far as the ecocentric position.

Anthropocentric (instrumental values)

The anthropocentric view could be expressed as: *wildlife has no intrinsic value independent of human interest or values*. John Benson takes this further, he provides three divisions within the green spectrum. The first is light green: *'the world of non-human beings, living and non-living, has no independent moral status, but only matters insofar as it matters to human beings (which do have independent moral status)'*.(J.Benson 2000)¹

This would appear to be the position adopted by many, if not most, professionals involved in nature conservation. At least, this is the position that they hold publicly.

For example, recently the heads of The Convention on Biological Diversity, CITIES, The Convention on Migratory Species of Wild Animals, Ramsar and The World Heritage Centre, wrote to the world leaders who were meeting to discuss progress towards achieving the Millennium Development Goals. The letter called upon the leaders to recognise that biodiversity needs to be used in a sustainable way and its benefits shared more equitably.

The letter offered the following justification for the conservation of biodiversity:

Biodiversity is the variety of life on earth: genes, species, ecosystems. The services we use from ecosystems, such as clean water, food, fuel and fibre, medicines, and climate control, cannot be provided without biodiversity.

Failure to conserve and use biological diversity in a sustainable way will perpetuate inequitable and unsustainable growth, deeper poverty, new and more rampant illnesses, continued loss of species, and a world with ever-more degraded environments which are less healthy for people.

A wide range of crop and livestock genetic diversity is essential to ensure that our agro-systems can adapt to new challenges from climate, pests and diseases.

¹ Benson provides three divisions, the first is given in the main text the remainder are:

Mid-green: non-human animals of some species have independent moral status, whether or not they matter to human beings.

Deep-green: some or all of the broad class of natural beings have independent moral status, whether or not they matter to human beings. A position that accords moral status to all living things is termed 'biocentric'; one that accords that status also to comprehensive entities that include non-living components is termed 'ecocentric'.

The biological wealth in marine environments will be needed to feed growing populations and provide livelihoods for coastal communities around the world.

Wetlands are needed as water regulators to protect us from floods and storm surges, to help in moderating climatic change with other ecosystems such as forests, and to act as living filters for pollutants and excess fertilizers.

We must not forget that biodiversity is central to many of the world's cultures, the source of legend and myth, the inspiration for art and music. It is the basis for medicinal knowledge, drawing on the property of a variety of plants and animals for healing. Provision of these services across all these ecosystems depends on maintaining biological diversity.

Biodiversity can indeed help alleviate hunger and poverty, can promote good human health, and be the basis for ensuring freedom and equity for all. All of us rely on biodiversity, directly or indirectly for our health and welfare.

Another example can be taken from a recent debate between members of The World Convention on Protected Areas (WCPA). The issue in question was the proposed de-gazetting of the Amboseli National Park in Kenya. Most participants in the debate were concerned that the proposed diminished status of the park could lead to loss of wildlife. The relevance to our debate is that, where many WCPA members felt that the protection of such an obviously important international park should take precedence over local issues, there was an opposing view. One member accused others of being 'radical, misanthropic, biocentric conservationists' he in return was labelled 'a radical, anthropocentric, biophobic developmentalist.'

I use these examples simply as evidence that such divisions do occur in the conservation profession. It is worth mentioning that the official policy of the European Union appears to favour an anthropocentric justification for maintaining biodiversity but it also mentions intrinsic value.

'Biological diversity (biodiversity) is essential to maintain life on earth and has important social, economic, scientific, educational, cultural, recreational and aesthetic values. In addition to its intrinsic value biodiversity determines our resilience to changing circumstances. Without adequate biodiversity, events such as climate change and pest infestations are more likely to have catastrophic effects. It is essential for maintaining the long term viability of agriculture and fisheries for food production. Biodiversity constitutes the basis for the development of many industrial processes and the production of new medicines. Finally, biodiversity often provides solutions to existing problems of pollution and disease'

Anthropocentric - some positive arguments:

- *'By at least trying to put money values on some aspects of environmental quality we are underlining the fact that environmental services are not free. They do have values in the same sense as marketed goods and services have values. (David Pearce 1992)*
- Anthropocentric or instrumental values may not, in themselves, be a problem. Perhaps we might begin by assuming that when people claim something has value they are not necessarily assuming that it is beneficial to humans.
- Even if we decide that 'anthropocentric' implies values that have no relevance for anything other than humanity, we might also conclude that, given our very existence is dependent on the condition of our environment, then we must value our environment for our, if not its, own sake.
- Anthropocentric values are easily understood by the wider public, other land users and politicians.
- It is relatively easy to understand the impact of our actions when the consequential environmental losses are described as our losses.

Biocentric

Deep Ecology is sometimes referred to as the 'biocentric' ethical position.

The Deep Ecology platform

1. All life has value in itself, independent of its usefulness to humans.
2. Richness and diversity contribute to life's well-being and have value in themselves.
3. Humans have no right to reduce this richness and diversity except to satisfy vital needs in a responsible way.
4. The impact of humans in the world is excessive and rapidly getting worse.
5. Human lifestyles and population are key elements of this impact.
6. The diversity of life, including cultures, can flourish only with reduced human impact.
7. Basic ideological, political, economic and technological structures must therefore change.

8. Those who accept the foregoing points have an obligation to participate in implementing the necessary changes and to do so peacefully and democratically.

At the mention of Deep Ecology a common response from many conservation professionals is suspicion and prejudice. There is often a misconception that the Deep Ecology movement is about marginal, extreme, misanthropic zealots. Deep Ecology is contentious, but it is gaining in credibility, popularity and application.

One of the most significant early examples of formal recognition of this concept was in the World Charter for Nature adopted by the General Assembly of the United Nations in 1988. The definition used was: *'All life warrants respect regardless of its usefulness to man.'* This is a slightly weaker version as 'respect' is used in place of 'intrinsic value', and there is no definition of 'respect'.

More recently, the Welsh Assembly Government document, Draft Environment Strategy for Wales (2005) contains the following statements:

- *We recognise that our environment has an intrinsic value.*
- *We seek to value and improve the biodiversity and quality of our environment not only for its own sake, but also as an essential part of delivering a sustainable future for local economies and communities*

Why should nature conservationists adopt a biocentric ethic? This question is easier to deal with by considering some of the problems associated with relying on anthropocentric arguments.

- *'Conservation is getting nowhere because it is incompatible with our Abrahamic² concept of land. We abuse land because we regard it as a commodity belonging to us. When we see land as a commodity to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanised man, nor for us to reap from it the aesthetic harvest it is capable, under science, of contributing to culture. That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics. That land yields a cultural harvest is a fact long known, but latterly often forgotten'.*

'To sum up: a system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore and thus eventually to eliminate, many elements in the land community that lack commercial value, but that are (as far as we know) essential to its healthy

² Abrahamic covenant – The promise of land (Genesis 12:1) God called Abrahamto a land that He would give him.

functioning. It assumes falsely, I think, that the economic parts of the biotic clock will function without the uneconomic parts.'
(Aldo Leopold 1948)

- *'If a price can be put on something, that something can be devalued, sold, and discarded. It is also possible that for some to dream that people will go on living comfortably in a biologically impoverished world. They suppose that a prosthetic environment is within the power of technology, that human life can still flourish in a completely humanised world . . .'* (Edward O Wilson 1994)

If we do not recognise the value of something then we could conclude that it has no value, and that we can disregard or destroy it without any concern or conscience. Values will change with time: something that has no recognisable value today may be extremely important tomorrow.

There are examples where an anthropocentric approach has led to local interests taking precedence over wildlife interests, even when the protected area has international status.

Clearly, both the biocentric and anthropocentric ethical positions represent different, but legitimate, views of the values that should be given to wildlife. Without doubt the most serious problems arise when humans fail to recognise any value in wildlife or their environment. I will not, at this point, attempt to champion either position. However, it is important that professional conservationists are aware of the debate, and recognise that there are implications for nature conservation.

- For the way in which we understand nature conservation and consequently how we define our obligations (objectives) and manage our sites (outcome or process).
- For the ways in which we communicate.

Ideally, all nature conservation professionals would develop personal philosophies of nature conservation. We all need to recognise and be aware of our motivation and inspirations. We need to understand why we are personally committed to conserving nature. We need the confidence and conviction to ensure that our beliefs govern our decisions and actions. We should also be able to share our beliefs and feelings with colleagues and others, since this sort of discussion will help to develop or reaffirm group, organisational and corporate ethics. It is only through understanding why we conserve nature that we will recognise what we are trying to achieve and what we need to do.

WHAT ARE WE TRYING TO ACHIEVE?

Taking a global perspective it seems reasonable to begin with the Rio convention on biological diversity.

The convention has three main goals:

- The preservation of biological diversity
- The sustainable use of resources
- The equitable distribution of the benefits arising from the use of genetic resources.

The first goal is the most relevant to this discussion and so it would be timely to remind ourselves how the convention defines biological diversity.

'Biodiversity is the term given to the variety of life on Earth and the natural patterns it forms. The biodiversity we see today is the fruit of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.'

This diversity is often understood in terms of the wide variety of plants, animals and micro-organisms. Biodiversity also includes genetic differences within each species. Yet another aspect of biodiversity is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes. In each ecosystem, living creatures, including humans, form a community, interacting with one another and with the air, water, and soil around them.'

We might also reflect on the fact that the convention was signed by 150 government leaders, including Britain, at the 1992 Rio Earth Summit. The scale of the international commitment is such that we have been provided with a tangible global purpose. Unfortunately, the intention of the convention and the definition of biodiversity is not always understood and is sometimes misrepresented. One of the more common misconceptions is that there is an obligation, in all circumstances, to maximise diversity (everything everywhere, with no room for anything).

An alternative view might be that nature conservation is about keeping options open for the future. **Our responsibility is to provide optimal conditions for wildlife, wherever and whenever we can (we don't want everything everywhere but there should be somewhere for everything).**

It is important to recognise that in Britain our ecosystems, habitats and populations are at best semi-natural. The Nature Conservancy Council (1989) defined a semi-natural habitat as: *'modified by human activity from its original state but with a vegetation composed of native species, similar in structure to natural types, and with native animal species.'* The Rio convention unequivocally recognises that biodiversity can be the product of

both natural processes and the combination of natural and human influences, and so implies that semi-natural is important.

Taking a European perspective, Natura 2000 does not differentiate between natural and semi-natural habitats or communities. They have equal value. Therefore, there is currently a legal obligation to safeguard many of these places. In addition, semi-natural communities represent some of the most highly valued components of our cultural landscape. In most minds there can be no doubt that we must continue to safeguard these areas, though we will certainly have to accept some compromises as a consequence of environmental change.

Some authors suggest that the 'pre-industrial agricultural landscape' represents an ideal state, or view of nature, in many people's minds. Some go further and suggest that this idyll, so lavishly portrayed by the romantic British painters, has provided a distorted vision of nature: a vision that has driven us to put far too great an emphasis on the maintenance, or restoration, of something that is a poor substitute for wild nature.

Returning to the views of the interviewees in my original paper. These reflect the widespread view in UK conservation that there is a need to move away from an approach to nature conservation that is almost entirely based on achieving defined outcomes (the semi natural state). This should be replaced, at least in part, by an approach that enables natural processes and accepts the resultant outcomes, even when they are unpredictable. The implications are that this will deliver a 'more natural' countryside.

Before progressing any further, I think that there is a need to discuss what 'natural' might mean. If we turn to a dictionary a typical definition is: *existing in or produced by nature; not artificial or imitation.*

Thus, popular definitions could imply that 'natural' is simply the absence of anthropogenic factors, past, present and future. In his book, *The Diversity of Life*, Edward O Wilson makes the essential connection between humanity and nature: *'We did not arrive on this planet as aliens. Humanity is part of nature, a species that evolved among other species.'* (E.O. Wilson, 1994), If we are part of nature how can any human influence be considered unnatural? Aldo Leopold differentiates between mechanised and non-mechanised man. He suggests that the actions of non-mechanised man can harmonise with, and even complement, nature: *'There were once men capable of inhabiting a river without disrupting the harmony of its life.'* (A. Leopold 1948). When did we drift apart, when did we become mechanised man, and when did our actions become something unnatural? This is part of a long-running debate that can never be fully resolved. I don't want to set aside the idea that humanity is part of nature since that is central to my personal beliefs, but for the purpose of this paper I will turn to George Peterken's concept of 'natural'. (Peterken 1993)

George Peterken identifies 3 varieties of naturalness:

Original naturalness: The state that existed before man became a significant ecological factor (not a single state but a succession).

Present naturalness: The state that would prevail now if man had not become a significant ecological factor.

Future naturalness: The state which would develop if man's influence were completely and permanently removed.

He also identifies a fourth variety, **potential naturalness**, which he describes as 'the state that would develop if human influence were completely removed and the resultant succession was completed in a single instant'. However, given that, according to George Peterken, this variety cannot actually exist, it is probably not relevant to this debate.

Original naturalness

'Gone are the days when ecologists (and conservationists) could conceive of "nature" in equilibrium, and hence portray human-induced changes in those ecosystems as somehow "unnatural".' (Adams 2003)

Is 'original naturalness' something that we should attempt to recreate? There are many people who appear to hold this view.

- Some of the most often used words in the nature conservation vocabulary are: reintroduce, restore, recreate and (more recently) re-wild.
- There is currently a North American plan, 'Pleistocene re-wilding', developed by Cornell University. Their intention is to re-establish megafauna, lion, cheetah, elephant and camel populations, in North America. These animals would 'stand in' for the original North American Pleistocene animals. They claim that, 'this would help maintain ecosystems and boost biodiversity'.
- Peter Taylor in his book *Beyond Conservation* presents a case for the restoration of the natural processes of wild nature in parts of Britain. Wilding in his context requires the introduction, or reintroduction, of herbivores, including large ungulates, and carnivores such as lynx and wolves.

'However, in large area initiatives, an important element of wilding is to leave the herds subject to natural selection, including the periodic scarcity of feed, winter temperatures, disease and wounding.'

'British wild-land proponents must begin to consider the re-introduction of lynx, wolf, and possibly bear and hence the reinstatement of predator-prey dynamics.' Peter Taylor (2005)

Can we assume that the North American approach represents an attempt to recreate George Peterken's original naturalness? I am not so sure about Peter Taylor's version but he does talk about 'bringing back the carnivores'. Is the intention to recreate something that happened at sometime (although when is not defined)? This 'something' was inhabited by many species now long since extinct. The presence of a very important predator, pre-historic humans, and particularly their role as a natural component of the past wilderness, seems to be discounted in future models.

There is a considerable volume of literature concerned with the large scale and widespread extinction of animals in the Holocene. Some suggest that man was the most significant agent.

'On present evidence, this dreadful synchopation -- humans arrive, animals disappear -- seems to have occurred to a greater or lesser degree on every land mass except the continents of earliest human evolution, Africa and Eurasia.' (MacPhee 1998)

Ross MacPhee goes on to suggest that the main reason for these extinctions may have been a consequence of diseases introduced by man. He asks, why in Asia and Africa during the relevant time period there were so few extinctions? One hypothesis proposes that the Afro-Asian megafauna developed behavioral mechanisms to deal with the evolving human predator.

Peter Taylor suggests that vegetation changed as a consequence of the combination of natural climate change and human factors. He also suggests that the extinction of the larger grazing animals was the consequence of human intervention, with the implication that this was not an act of nature. (If it was a 'natural extinction' then the argument for the reintroduction of large grazing animals and predators might be diminished).

John G. Evans, in *The Environment of Early Man in the British Isles*, 1975, takes a different view: *'Where man was involved, he acted simply to increase the rate of change of processes already in operation.'* Another author, A.J. Stuart, makes a similar point: *'Extinctions follow from human predation, but only at times of fundamental changes in the environment.'* Can we, or should we, even attempt to differentiate between natural and anthropogenic factors? It is safe to assume that most people will, at least grudgingly, accept that, at some time or in some state, people can be regarded as a natural component of a wilderness. If this is the case, should the concept 'original naturalness' exclude people?

A key question could be: when was yesterday, or which yesterday do we want for tomorrow? George Peterken's concept 'original naturalness' recognises 'not a single state but a succession'. Peter Taylor also clearly recognises the variety of original naturalness. So should tomorrow be all our yesterdays?

Present naturalness

We also need to take the discussion further and move to ‘present naturalness’ (the state that would prevail today if man had not been a significant ecological factor). The value of our reference point, some time, or times, in the ‘natural’ past, can be questioned. Present natural is an extremely important concept as it reminds us that, even if anthropogenic influences were completely absent, ecosystems would have changed with time. A false concept of natural can lead to inappropriate conservation objectives and management. For example, until recently, beech, *Fagus sylvatica*, was not considered to be a native species in north-western Britain. As a consequence, it was regarded as an alien invasive species and attempts were made to eradicate it.³ There is evidence to suggest that it did not occur naturally beyond a line drawn roughly from the Wash to the Severn Estuary. However, we know that beech can survive in northern Britain and that, had man not destroyed the wildwood thus preventing colonisation by beech, we may now have to regard beech as a natural component of northern woods.

Future natural

Should nature conservation be rather more concerned with what we require of the future, and less about recreating the past or fossilising some intermediate state? Perhaps we should complement sites managed to preserve wildlife by creating some large areas of Peterken’s future natural. These would be areas where man’s influence is completely and permanently removed. There is considerable and growing support for the creation of large wilderness areas (W.M. Adams 2003, P. Taylor 2005). However, I am not entirely sure that they actually mean ‘future natural’ as defined by Peterken. The key issue is that it may not be possible to exclude man’s influence, particularly the impact of past intervention. For example, we will not be able to eliminate the impact of atmospheric pollution or invasive alien species. Thus, human influence in some form is likely to prevail.

Another, slightly obscure, argument might be that any version of future natural will be the product of human intervention in that we will have to make a number of decisions and take many actions to facilitate the process. These interventions could include the introduction of large herbivores and carnivores (P. Taylor 2005). Once we embark on an interventionist course, however minimal that may be, we end up with relative degrees of naturalness.

We might consider modifying Peterken’s definition. Will it ever be possible to exclude human influence entirely, and if we could, should we remove human influence completely and permanently? Should we regard ourselves as part of the natural world? How can we be anything else?

³ We continue to control beech in some sites, not because it is regarded as an alien invasive but because it does not provide for the variety of species that we would expect to find in an oak wood.

Can we create at least some sustainable places where, as far as possible, we rely on, or enable, natural processes, where opportunities for wildlife are optimal, where human interaction is not exploitation, and where our mutual dependence is recognised. In other words, these could be tomorrow's wild places.

WHAT MUST WE DO?

No single management solution can suit all circumstances since the condition of natural and semi-natural nature varies from almost pristine to completely derelict. Populations of species can range from being robust and viable to fragile and close to extinction. Where the starting point for nature conservation management varies so will the outcomes. If we recognise that nature conservation is a human activity, something that we choose to do, then we can choose a variety of outcomes. The choice will be constrained by legislation and should be influenced by personal or corporate ethics. We need to employ a wide variety of different approaches to conservation management.

In the main, the conservation management of near natural areas is about trying to prevent people from doing things, or attempting to undo (or at least minimise) the impact of things that they have done, are doing or will do. In semi-natural habitats we attempt to maintain features that were largely the incidental by-product of human endeavours to provide a living, food and shelter. We persuade or encourage (sometimes with payments) people to continue doing something that they may no longer wish to do. Or, in their absence, we do whatever they once did.

Whatever we do, we need to start doing it on a much larger scale. The need for a landscape scale approach or an entire ecosystem approach has become widely recognised and supported. As with all new ideas, this concept is supported by a cohort of enthusiasts, and a few seem to take the view that we should abandon other approaches, i.e. the traditional small nature reserve or protected area. Conservation management, and indeed nature conservation, will benefit from a pluralistic approach. We should recognise that there are a variety of equally valid, but sometimes contradictory, theories, approaches and actions.

There are many very good reasons for maintaining smaller sites, certainly until we have sufficient large sites (if that is ever achievable). Small sites can grow and provide the foundations for large sites. We will also need to retain some smaller secluded sites because of their importance for the preservation of the local genetic variation found in naturally isolated populations.

In addition to establishing landscape scale sites, we must also improve connectivity (the creation of corridors or connections between sites). This must be recognised as one of the most essential challenges for the future.

'An ecosystem is a tapestry of species and relationships. Chop away a section, isolate that section, and there arises the problem of unravelling.'
(David Quammen, 1996)

'Climate change is now commonly recognised as a major challenge for the protection of biodiversity. In Europe species are slowly dispersing northwards due to the impact of climate change on species and habitats. The rehabilitation of connectivity can be one of nature manager's answers to climate change, since this will enable species to migrate to more suitable habitats.' (Natuurmonumenten Apeldoorn The Netherlands, 2005)

Approaches to conservation management

While the current outcome-driven approach to conservation should not be dismissed, we must also recognise that different approaches are required. In this section, I will discuss various approaches to management that might be employed to provide a future for wildlife.

In broad terms, nature conservation management can be divided into three, possibly four, main approaches:

1. Management by prescription
2. Management by defining outcomes
3. Management by enabling process
4. Experimental management (this does not strictly stand alone, but represents a scientific investigation of any of the above)

1. Management by prescription.

This is an approach often encountered in earlier management plans, where the objectives were concerned with doing something and not with expressing a desired condition. Objectives would be, for example, 'to complete a full inventory of the site' or 'to ensure that there is sufficient grazing to prevent invasion by scrub'. This approach, though rarely favoured by conservation professionals, is often used when organisations are obliged to adopt a bureaucratic approach to nature conservation. There are, however, some advantages in that it is easy to cost and relatively easy to monitor compliance. The best, or worst, examples can be found in some agri-environment schemes. For this approach to be successful, i.e. to deliver significant nature conservation benefits, there must be certainty that the prescription will deliver a required outcome. There are many examples of features that are in serious decline on sites that are subject to these agreements or schemes.

The prescriptive led approach is reappearing. The recent introduction of 'evidence-based' conservation management, (Pullin 2003) has its roots in the evidence-based framework developed to support decision making in medicine. Interestingly, many medical practitioners set aside the evidence-based approach, claiming that intuition, experience and feelings are more important. Clearly, the collation and dissemination of good examples of conservation management will provide obvious, and very significant, benefits to conservation managers. However, there may be problems, particularly if

the evidence-based approach becomes the foundation for management planning, in other words, if we define what we want to achieve by what we do. These problems may not arise if the evidence is used intelligently and in a way that builds on other tried and successful approaches.

Conservation management is a crude, sometimes clumsy, activity: we add or subtract animals, we burn and we use chainsaws. Often, we are trying to maintain or obtain an approximation to a condition that was a by-product of other land use. The local distinctiveness and variety of these conditions contribute to cultural diversity and biodiversity. Is precision appropriate? Even if it were possible for specific management actions to deliver specific outcomes, do we want to follow that route?

2. Management by defining outcomes

This has become the favoured approach for the planning and management on most statutory conservation sites in UK and Europe. The approach was developed in recognition of the legal requirement to conserve defined features on statutory sites. In short, this approach requires that the favourable condition, or better the status (Favourable Conservation Status), of a feature is defined.

GENERIC DEFINITION OF FAVOURABLE CONSERVATION STATUS

Habitat features

For a habitat feature to be considered to be at FCS, **all** the following must be true:

- The area of the habitat must be stable in the long term, or increasing,
- It's quality (including in terms of ecological structure and function) must be maintained,
- any typical species must also be at FCS, as defined below,
- the factors that affect the habitat, including its typical species, must be under control.

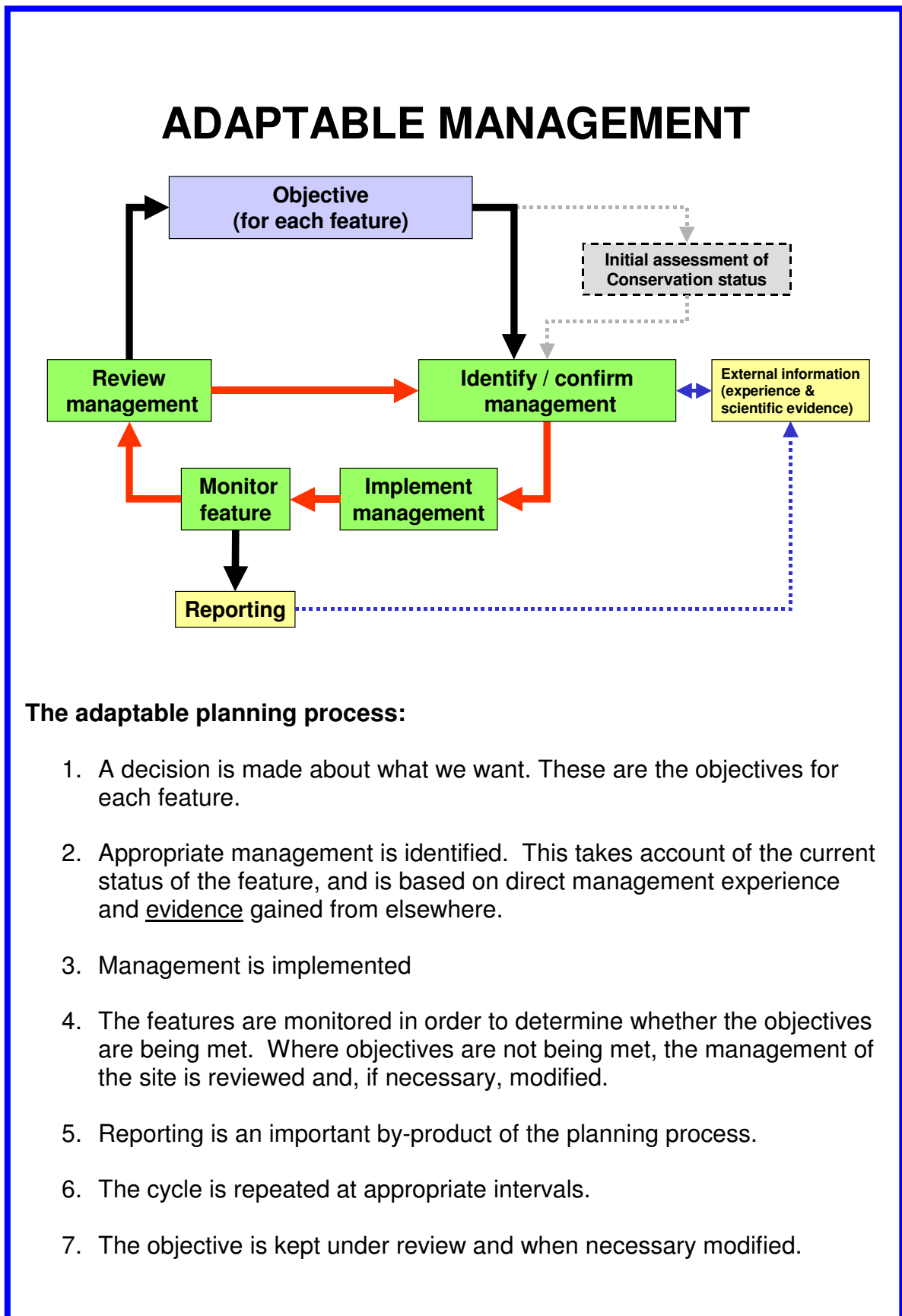
Species features

For a species feature to be considered to be at FCS, **all** the following must be true:

- The size of the population must be being maintained or increased,
- the population must be sustainable in the long term,
- the range of the population must not be contracting,
- sufficient habitat must exist to support the population in the long term,
- the factors which affect the species or its habitat must be under control.

The definition of FCS for habitats given above is based on and is entirely consistent with the statutory definition of FCS for habitats and species given in Article 1 of the Habitats Directive (Council Directive 92/43/EEC of the 21st May 1992 on the conservation of natural habitats and of wild fauna and flora [*Official Journal of the European Communities* OJ no. L206, 22.7.92, p.7.

An adaptable (Alexander 2004) system can then be employed. This has been referred to as 'learning to manage by managing to learn.'



The adaptable planning process:

1. A decision is made about what we want. These are the objectives for each feature.
2. Appropriate management is identified. This takes account of the current status of the feature, and is based on direct management experience and evidence gained from elsewhere.
3. Management is implemented
4. The features are monitored in order to determine whether the objectives are being met. Where objectives are not being met, the management of the site is reviewed and, if necessary, modified.
5. Reporting is an important by-product of the planning process.
6. The cycle is repeated at appropriate intervals.
7. The objective is kept under review and when necessary modified.

When dealing with statutory sites we may have to live with the outcome-driven approach, but we must be aware that there are shortcomings. Most of what we manage in our cultural landscape is, to quote John Rodwell, 'the accidental by-product of past land management', i.e. management intended to provide a living, food and shelter. Today, legislation provides for the fossilisation of these remains, to preserve them as in aspic.

The preservation approach to managing sites is complicated in Britain by the JNCC protocols (UK common standards). Common standards monitoring is an attempt to ensure uniform recording and reporting of the condition of features on sites throughout Britain. Unfortunately, the common standard for monitoring has implied a common standard for management objectives. The consequence is that there is a danger that objectives will only include those elements or attributes of a feature that can be quantified and monitored. In short, if it can't be counted it doesn't count. There is also potential that uniform objectives could threaten local distinctiveness.

It is possible, particularly when dealing with our more natural habitats, to comply with the law (particularly European law) and yet make significant allowance for process. A flexible approach can be obtained by applying an appropriate level of definition for a feature. For example, on a statutory sand-dune site, if the features are defined as particular plant communities (such as humid dune slacks NVC SD 14/15), we are compelled to specify how much we want, where we want it, and give some indication of quality. However, in reality, we know that over time these slacks will increase or decrease, and move around the site. We also recognise that this mobility is highly desirable. The alternative is to regard the entire dune system as the feature. In other words, the level of definition has changed. With this approach, management can focus on ensuring that, as far as possible, natural processes are enabled. The consequence is that individual communities will appear, disappear and move without giving any cause for concern.

It is not my intention to suggest that we should abandon site-based, outcome-driven management. Far from it. The preservation of existing habitats and species, at the very least, provides reservoirs of wildlife to repopulate the wider countryside. These places could also provide routes for species that may have to move to survive a rapidly changing climate. It is also important to note that in general species management will always be an outcome driven process.

There is also a very strong case for preserving much of our cultural heritage as expressed in the variety of valued semi-natural communities, for example, hay meadows and coppice woodland. However, we should recognise that this approach to management can be very expensive.

3. Management by enabling process

It is interesting that most of the individuals who contributed to the earlier section in this paper recognised the need for a new approach to conservation

management. They may not have used the same words, but the meanings were consistent. They identified process-led management as an alternative, or addition, to outcome-driven management. One interviewee captured the sentiments of most with the following statement:

'We would argue that one can make a distinction between the processes which go on in any natural and semi-natural systems - things like birth, death, evolution, extinction etc. - and the outcome of those processes, which are certain abundances of species. In my own view, it is more important to maintain those processes than to maintain a particular product at the end. One can say that the variety of outcomes of those processes will all have biodiversity/nature conservation values. They will be different values, but they could all be equally acceptable.'

With the exception of the relaxed version of outcome-driven management that I described in the earlier section, I have been unable to locate any current terrestrial examples of management by enabling natural processes; there may be exceptions in marine conservation⁴. In principle, this should not be difficult, but it must be recognised that, in addition to simply attempting to enable processes, we will also have to make some decisions. It is also important to recognise that process management will deliver some kind of natural state ('tomorrow's wild places'?), though these, in fact, may be an unpredictable version of semi-natural.

Are management options relevant?

Conservationists quite often talk about a non-intervention approach to management as shorthand for implying that they want something natural. Management options were first described in the Nature Conservancy guide to preparing management plans published in 1981. In the original version there were three options:

- Non-intervention
- Limited-intervention
- Active-management

Although 'options' have more or less disappeared from management planning, there is some value in reconsidering their purpose. When applied to outcome-driven management it must be recognised that options are simply an outline of the general approach to management. Given that management will inevitably vary with time, so will the options. Quite often, the management required to move the condition of a feature from unfavourable to favourable will be different to the management required to maintain a feature in a favourable condition. Also, as different factors impact on the feature, different

⁴ Site based marine conservation in the UK is restricted to a small number of statutory sites where legislation requires that the Favourable Conservation Status for the conservation features is defined and quantified. However, on these sites conservation management is about enabling processes by controlling anthropogenic factors. Clearly there is a contradiction as the natural processes acting in these places have potential to deliver unpredictable outcomes.

approaches to management are often required to maintain that favourable condition.

Recently, there has been a move from limited intervention to minimal intervention, and the options are redefined as:

- Non-intervention
- Minimal-intervention
- Active-management

We need to consider the implication of applying the three options to management by enabling process.

a) Non-intervention

If this option is to have any useful meaning, it must be taken in the strictly literal sense that we would do nothing. The results would approximate to George Peterken's future naturalness: the state that would develop if man's influence were completely and permanently removed. However, it would only work if the definition were taken to mean that we could, and would, remove all influences, past and present, as well as preventing any future influence. In all circumstances, we would need a long period of **active management** before we could apply **non-intervention**.

The concept of **non-intervention** is complicated when we consider whether it can, or should, be extended to other people. In the Peterken sense, it means that we would do nothing and that we would prevent anyone else from doing anything. However, does 'anyone else' include traditional rights exercised by indigenous peoples and, if so, would these be tolerated?

In practice, if the influence of anyone else, past, present or future, was tolerated, while conservation managers relinquished any control or influence, the outcomes could be undesirable, and result in significant loss or damage to wildlife. For example, destructive invasive species could dominate.

Is there a justification for non-intervention that may, in reality, mean abandonment? Perhaps we should take the risk and see what happens. There are plenty of examples where abandoned areas (even post-industrial sites) have, without any conservation management, become quite spectacular refuges for wildlife. However, I think that non-intervention management might best be regarded as experimentation and not nature conservation, and we should probably not take that risk on our most precious sites.

b) Minimal-intervention

This option can apply to process management. That is, we would enable natural processes in so far as they deliver some kind of nature conservation. Although the outcomes would be unpredictable, since they are more or less the product of natural processes any outcome could be regarded as acceptable. A difficulty arises if we need to know that we are at least

progressing in an appropriate direction, and even in defining what appropriate might mean.

If nature conservation is to have any meaning, it should, in broad terms, prevent, or at least reduce, the rate of extinction of species and habitats. Perspective is extremely important in this context. Whatever approach we use to conserve wildlife, we should recognise that we can't have everything everywhere, but there should be somewhere for everything. In order to ensure that, as far as possible, there is a place for everything we need a global perspective or strategy. Places would not be managed in isolation, but within the context of the dynamic bio-geographical distribution of species and habitats. This might help to define what an 'appropriate direction' and potential 'outcomes' would mean.

c) Active-management

This option is, of course, management to obtain defined outcomes (see previous section).

Adaptable management

The adaptable approach to management can also be applied when managing by enabling process. The only change is that less emphasis is placed on the objective, and that management is broadly concerned with enabling process by controlling undesirable anthropogenic factors.

4. Experimental management

Experimental management can be any of the above. The purpose would be to test ideas and practices, and the outcomes need not necessarily be of benefit to wildlife. Some people argue that all conservation management should be experimental. However, if experiments are to have scientific validity, there is a need to apply appropriate scientific methods and protocols. In reality, we can't afford that luxury; I have never heard a conservation manager claim to have adequate resources.

There are very few examples of large-scale experiments. The most famous, is **the** Oostvaardersplassen in The Netherlands. Please see the box below. Oostvaardersplassen represents a version of process management allied to a minimal-intervention option. There are, without doubt, very significant nature conservation gains: the list of breeding and visiting birds is very impressive, though these may be regarded as the serendipitous by-product of a grand experiment.

Oostvaardersplassen may be contentious: there are animal welfare considerations, and many people claim that the approach has limited application elsewhere. However, Oostvaardersplassen has demonstrated that there are real alternatives to outcome-driven conservation management. We now know that if we are to progress and become more effective and efficient at conserving wildlife, we need large-scale experimental management, and we need to explore new ideas and directions.

Oostvaardersplassen

The 5600 ha Oostvaardersplassen is a eutrophic wetland in the central part of the Netherlands (52°26'N, 5°19'E), situated in the polder Zuid Flevoland, which was reclaimed in 1968. The marsh zone in this nature reserve takes up 3700 ha, the terrestrial part 1900 ha. Soil fertility is high (clay content c. 30%).

Since its reclamation from the freshwater lake IJsselmeer, the vegetation of the Oostvaardersplassen has rapidly developed by natural succession.

Concurrently, the area became an internationally important wetland for migrating water birds such as waders and geese. However, the rapid development of the open, grassy vegetation, which is an important feeding habitat of water birds, to dense stands of reed and willow (*Salix* spp.) threatened to reduce the habitat suitability for water birds significantly.

To maintain the ornithological species diversity of the nature reserve, grazing by cattle and horses and red deer was introduced as a management tool.

The Oostvaardersplassen represents a wetland ecosystem that is not unlike those that would have existed on river-banks and deltas previous to human disturbance. What it also represents is nature's ability to take advantage of new developments.

The change from the bare mudflats that were left after the draining of the IJsselmeer to the intense and intricate web of life that exists in the Oostvaardersplassen today, demonstrates the advanced ability of nature that out competes any kind of construction that man could accomplish. It is this accomplishment by nature that has inspired the management to allow nature to manage itself.

Staatsbosbeheer
The Netherlands

Birds at the Oostvaardersplassen

Species	% of total North and West European population
<i>White-fronted goose</i>	10 – 20 %
<i>Greylag goose</i>	30 – 80 %
<i>Shoveler</i>	4 – 10 %
<i>Avocet</i>	10 – 30 %
<i>Black-tailed godwit</i>	10 – 30 %
<i>Spoonbill</i>	30 %
<i>Cormorant</i>	40 %
<i>Marsh Harrier</i>	5 %
<i>Bearded tit</i>	< 10 %
<i>Savi's Warbler</i>	> 10 %
<i>Night heron</i>	small numbers
<i>Bittern</i>	+ 50 pairs
<i>Purple heron</i>	small numbers
<i>Little egret</i>	+ 20 pairs
<i>Great-White heron</i>	+ 50 pairs

LANDSCAPE AND CULTURAL VALUES

The preservation of the cultural or historic landscape was mentioned by many interviewees, but was not given a particularly high value. Clearly, this does not reflect the views that are currently held by many countryside professionals. Many individuals and organisations would place the need to maintain the cultural landscape above all other considerations, excepting perhaps access.

I do not intend to present the case for the preservation of our cultural landscape, since that has already been powerfully made by others. I am concerned that those who so strongly defend the cultural landscape forget that landscape is often a patchwork of semi-natural communities. They also forget the connection between culture and the original wild. This connection is clearly expounded by Aldo Leopold:

Wilderness is the raw material out of which man has hammered the artefact called civilisation. Wilderness was never a homogeneous raw material. It was very diverse, and the resulting artefacts are very diverse. These differences in the end-product are known as cultures. The rich diversity of the world's cultures reflects a corresponding diversity in the wilds that gave them birth. Aldo Leopold (1948)

Despite many hilarious and ludicrous claims, Eskimos do not have over 400 words for snow: in fact, they have 15. A quick search through a Welsh dictionary revealed 14 Welsh words for wet places, though there are probably many more. Is it, therefore, safe to suggest a link between language and our natural or wild environment? Many claim that the survival of the Welsh language is essential if we are to retain our Welsh culture. Therefore, if there is a link between language and environment, can we assume a link between culture and environment?

Each step away from our connection to the wild diminishes or dilutes our culture. Thus, a landscape where everything is an artificial bright emerald green, a landscape that is entirely the product of human endeavour, will no longer provide a link with, or maintain, our cultural roots. We seem to understand the consequences of setting aside the vernacular style in building, and would mourn the passing of an old wall replaced by a wire fence, or the stone barn substituted for something out of a packet from the local builder's merchant. We must learn to value and protect the natural landscape as vigorously as we have defended our cultural landscape.

COMMUNICATION AND LANGUAGE

Communication - various definitions:

- the activity of conveying information
- a connection allowing access between persons
- the process of exchanging information and ideas
- the transmission of information so that the recipient understands what the sender intends
- the successful transmission of information through a common system of symbols, signs, behaviour, speech, writing, or signals

Communication is a significant issue, both within the conservation management profession and between professionals and other people. It became very clear during the interviews that I conducted when preparing for my original paper that, although people used the same words, they often defined even common words or expressions differently. For example, I recently asked a group of conservation managers attending a training course if they carried out monitoring on their sites. Most raised their hands. We then discussed and defined monitoring. I repeated the question and there was no show of hands. Lack of common definitions can lead to confusion, misunderstanding and an inability to share a common purpose. In addition, the language that professionals use is often quite inappropriate for general consumption. I will begin with the use of appropriate language.

Most professionals use language that is heavily dependent on abbreviations, acronyms and technical expressions. The following example, taken from the medical profession, illustrates the problem.

Medical language:

Lansoprazole is effective in the treatment of NSAID associated GUs and DUs and Zollinger - Ellison syndrome and in the eradication of helicobacter pylori. Side effects including LFT alteration, gynaecomastia, petechiae and RF have been reported. Stevens-Johnson syndrome, toxic epidermal necrolysis and erythematous or bullous rashes including erythema multiforme have been reported occasionally. Take 30mg cap o.d.

In lay terms:

Lansoprazole is a drug which is very useful in the treatment of ulcers in the stomach and first part of the intestine. Side effects include changes to liver function, breast formation (in men), skin rashes and kidney failure. There are a few very rare but serious other skin conditions. Take one capsule once a day.

Dr Anne Rivett

The meaning is exactly the same in both versions. This is a clear demonstration that it is possible to use plain language and yet maintain scientific integrity.

In January 2004, CCW commissioned the Susie Fisher Group to explore the public understanding of nature reserves (Nature Reserves and the Natural History Concepts Which Underpin Them). A small number of local groups were established across Wales, and the members of each group were carefully selected in order to ensure a representative cross-section of the local population. The groups discussed, without any guidance from the consultants, a range of terms, ideas and concepts. This is a sample of the responses given when the groups were asked to define 'biodiversity':

What does biodiversity mean?

- The hares and rabbits. You see, if there are lots of hares, the rabbits start dying off. If the hares start dying off there is no food and then it is a total circle.
- The environment
- The insides of animals
- Washing powder
- Biology.
- It's the interaction of nature with agriculture.
- You get a lot of biodiversity in a habitat where there's a lot of species.

Biodiversity has become such an important word in our vocabulary that we might assume is widely understood. It is hardly possible to open a newspaper or watch television without some reference to biodiversity. If we do not even share a definition of biodiversity with the general public, then consider how unfathomable most of our language must be.

VINE

Early in 2005, FACT (Forum for the Application of Conservation Techniques) organised a workshop at Schumacher College, Devon to explore values in nature conservation. The outcome was the establishment of a FACT project group. This project title is VINE (Values In Nature and the Environment).

'For anyone involved in conservation a love of the natural environment is almost an unacknowledged qualification. We take it so much for granted that we often forget to speak about it, and this silence can become inhibiting. It is not always easy to break through these hidden barriers and talk about feelings when the scientific realities are so much safer and easier to quantify. VINE was created as a way of opening up that discussion and reminding ourselves why we cared enough to become involved in the first place. We want to discover our true values, define the things that have inspired us and find ways of sharing those thoughts with others. Through this we hope to develop a philosophy that will provide an ethical basis for the decisions we make about conservation issues.'

Sometimes we hide behind the anonymity of scientific jargon because we have no words for our own emotions, and so we will be looking at ways in which art and literature can convey those universal feelings. While our inspirations may be timeless, our vision is very much for the

future. VINE will be constantly evolving, exploring current thinking globally, to develop a dynamic strategy for conservation management that will not lose sight of our underlying principles.'

The VINE aims are:

- *To help evaluate, share and affirm values within nature conservation practice. To help communicate and nurture the belief within the nature conservation profession that intuition, senses, feelings and ethics should balance and support the necessary scientific foundations of our work.*
- *To help build a greater awareness amongst the nature conservation profession of the feelings and ethics that motivate other land managers and local communities in relation to nature conservation.*
- *To help the development of an approach to managing the environment for nature in which the values and beliefs outlined above are embodied in practical action*

Before moving on to intuition, senses and ethics, we need a definition of scientific values. The following, by Chris Lucas, is a reasonably typical definition, although the second paragraph, which discusses subjectivity, may be more controversial.

'Two of the traditional defining criteria of science are the claims that it is objective and that it is value free. The first relates to the idea that the subjects of science can be independently viewed by scientists, to allow for a consensus opinion of truth, and the second claims that this truth has no imposed human values.'

In modern thinking these dualisms are transcended, and we see that all measurements involve certain values, there is no dividing line between objective and subjective, all is a matter of degree. By dissolving that barrier we also enable ourselves to include within science many aspects of the human condition which were previously excluded as subjective.

Chris Lucas

If science need not be entirely objective, and consequently value free, the VINE project aim may be more readily accepted. The VINE project does not seek to challenge good science; it simply recognises a need to go further.

Perhaps the first step is to change the way in which we communicate.
Consider the following examples of an objective for a raised bog:

Objective: To maintain the active raised bog in favourable condition, where,

the extent of the primary surface intact active raised bog communities is,

lower limit *current extent (as defined on map)*

upper limit *not applicable*

the proportion of the primary surface intact active raised bog communities referable to a hummock - wet hollow complex is,

lower limit *80% of the vegetation*

upper limit *90% of the vegetation*

the ratio of hummock - wet hollow (the microforms or surface patterning) on the primary surface intact active raised bog communities is,

a mosaic of 20% wet hollow vegetation within a

10m radius of any point

upper limit *a mosaic of 30% wet hollow vegetation within a*

10m radius of any point

(For the purposes of objective setting/monitoring we assume the observer can estimate presence of hollow cover of between 20 & 30%, and where wet hollow vegetation in favourable condition is defined as, *Sphagnum cuspidatum* with at least 1 of *Rhynchospora alba*, *Narthecium ossifragum* and/or *Sphagnum tenellum*)

the cover of native scrub across the entire area of active raised bog is,

lower limit *no greater than 10% cover of 'scrub' in any given 1 ha area of the site*

upper limit *a maximum 'scrub' block size 0.04 ha or*

>20m across with a maximum height of 'scrub' of 3 metres

[where 'scrub' is defined as any area of closed canopy scrub 35m x 5m across (0.0025 ha)]

Alternative written in plain English.

The following is a description of how we would like to see the future development and distribution of plants and animals on the blanket bog areas of the Migneint-Arenig-Dduallt:

From a high vantage point, the blanket bog extends as far as the eye can see. At first glance, it appears uniform greenish-brown, but a closer look shows a rich mix of reds, browns, greens, yellows and, in summer, the nodding white heads of cotton-grass.

A walk over the blanket bog will further reveal the wide range of plants that thrive here. Bog plants grow on a deep layer of waterlogged peat, often several metres thick and made up of the partly decomposed remains of previous bog plants. The surface of the bog consists of a mixture of small, moss-filled hollows and slightly drier hummocks where heathers grow. You may also see an occasional small bog-pool. The tallest plants, standing at about knee-height, are cross-leaved heather, which grows in the wetter areas, common heather and cotton-grass. Among these plants you will also find bilberry, crowberry, cranberry, deer grass and purple moor-grass.

Below these taller plants you can see sphagnum bog mosses. These spongy, water-holding mosses form a low, almost constant and colourful carpet in a variety of greens and reds. You may also see insect-eating sundews and the fragrant yellow bog asphodel on some of the drier hummocks.

The larvae of the large heath butterfly feed on the flower heads of cotton-grass, so you may be lucky enough to see some of these rare butterflies on sunny days in early summer. The blanket bog and surrounding wet heath and acid grassland areas form part of the feeding and nesting areas for birds such as hen harrier, merlin and peregrine falcon.

The plain English version is not strictly an alternative because the quantified and measurable components are missing. Clearly we need both, since they fulfil different purposes. The plain English version is an expression of our objective, something that we want to achieve or maintain, and, hopefully, it will be accessible to anyone with an interest in the place. This was preceded by the quantified performance-indicators that will enable us to report on the condition of the feature. I would guess, however, that most competent field biologist could use the text description for site quality assessment, and that the conclusions they reach might be very similar to those derived from detailed and costly measurements.

Sharing enthusiasm

The next step is to improve things further by communicating with genuine feeling. If we believe so strongly in the importance of wildlife then perhaps we should also be prepared to share our enthusiasm with others.

'Emotion is the source of all becoming-consciousness. There can be no transforming of darkness into light and of apathy into movement without emotion.' **C. J. JUNG, Psychological Aspects of the Modern Archetype**

'Feelings and emotions are the source of our ideas, inspiration, and creativity' (**Naess 1998**)

At work, we rarely talk about feelings or emotions, and yet, for most people, the reason for their choice of vocation in nature conservation was a deep emotional response to an experience sometime in their lives. Some are motivated by positive experience, others as a consequence of witnessing disaster or destruction. In general, we hide our emotions in an attempt to adopt a dispassionate objectivity. Clearly, there are times and places when this is important, but, equally, there are times when we need to share our feelings. Perhaps we are trapped by conformity. A wide range of influences, particularly peer pressure, will encourage us to conform but, simply because ideas of behaviour have become widely accepted, it does not mean that there are no better alternatives.

MY BELIEFS

'Humanity is but a part of the fabric of life -- dependent on the whole fabric for our very existence. As the most highly developed tool-using animal, we must recognize that the unknown evolutionary destinies of other life forms are to be respected, and act as gentle steward of the earth's community of being'. Gary Snyder – Four Changes (1970)

I have now reached what, for me, is the most difficult and challenging part of this paper, where I must get off the fence and share my personal beliefs. I have come to the conclusion that conservation is a personal relationship with nature, but that it is also important that we share our feelings with others.

Earlier in this paper I included a quote from Aldo Leopold: *'There were once men capable of inhabiting a river without disrupting the harmony of its life.'* I believe that our ultimate goal should be to find a way of inhabiting our world without disrupting the harmony of its life.

I believe:

That we are part of nature and not separate from it.

That all living things have intrinsic value.

That biodiversity contributes to these values and is itself a value.

That humans have no right to reduce this diversity except to satisfy vital needs. That people and their values are important (I might not share their values but I must respect them).

That cultural diversity is important.

That we have a responsibility to keep options open for the future (for human and non-human nature).

In the precautionary principle (Rio).

Applying these beliefs to nature conservation management in Wales⁵

Nature conservation is about keeping options open for the future. Our responsibility is to provide optimal conditions for wildlife, wherever and whenever we can (we don't want everything everywhere but there should be somewhere for everything). We must prevent, or at least reduce, the rate of extinction of species and habitats.

⁵ Taking a global perspective, I would place the protection of the remaining tracts of wilderness or near wilderness above all other considerations.

We need, and always will need, places where the primary land use is nature conservation. We must seek a balance between sites managed to obtain, or retain, specified outcomes, and sites where we enable natural process, almost⁶ irrespective of outcome (or, preferably, succession of outcomes). Over time, the balance should shift to favour process sites.

Outcome sites will provide refuges or reservoirs of wildlife and, as far as possible,⁷ preserve the natural elements of our cultural landscape, for example, hay meadows, coppice woodland and heath.

Some process sites would become tomorrow's wild places; places large enough to contain resilient habitats and populations capable of surviving environmental change; places that will include resident human populations, but where there is mutual benefit without exploitation.

These sites will be places where, as far as possible, people will be welcome and where they in turn will respect and enjoy nature. Human activities should be consistent with the primary nature conservation purpose of the site. These places will support, or contribute to, nature conservation in the wider countryside.

⁶ I say 'almost' because of the range of starting points. The more natural a system is, the greater the likelihood that natural processes will provide optimal conditions for wildlife. Conversely, seriously degraded sites, for example, those with invasive alien species, are less likely to respond positively to natural processes. In these instances, the outcome could be serious damage to wildlife.

⁷ We may have to accept that we will not be able to preserve everything.

FINALLY

I want to finish with a very personal perspective. My commitment to wildlife stems almost entirely from a single visit to Skomer Island at the age of thirteen. I had little interest in wildlife, but I went with a school party mainly for the boat ride. By the end of the visit I had decided that I was going to become the warden of Skomer, even though I had no real idea of what being a warden meant. Fourteen years later, in 1976, I was appointed warden and then spent the best ten years of my life on the island. It was there that I began to understand my relationship with nature.

Puffins

'On Skomer, winter comes to an end at a precise moment in the early days of March with the return of the first puffin. In the low winter sun every turn of a wavelet glints like a mirror flash, and suddenly the bird is there, glistening white against the dark sea, spilling its reflection onto the water in bands of undulating ripples. It shines like a bright memory of the summer that has gone.

All afternoon they gather in growing numbers until distinct groups of puffins are clustered across water, dividing and reforming in little spangled islands. At the end of the day they take to the sky, gaining speed by half running, half flying over the surface of the sea. Their orange, webbed feet make trails of splashes, ephemeral pathways of footprints drifting out across the sleek calm. As they finally lift themselves into the air, the weak sunlight is trapped for a moment in the glittering cascades of droplets they leave behind. Soon a faint haze of birds is wheeling above the cliff tops, and the evening shimmers with the sound of wings. Each bird is searching out its own burrow, that one precious shadow among a thousand others.

Nest building involves no elaborately woven structures, but in early spring birds parade across the honeycombed banks with beakfuls of flowers to scatter over the burrow floor. The alchemy of transformation, when the downy grey chick breaks free of the egg, is hidden below ground, but it is still clearly visible. Puffins carrying fish back to the island signal the change. They dive deep, drawing smoke-wisps of bubbles down into the water, to line up neat rows of sandeels in their beaks. After the quiet period of incubation the cliffs are alive again as birds return with iridescent streams of fish flowing from their bills, and every nervous flick of their heads sends sunlight drizzling over the metallic rainbows.' **Anon**

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