

# Give nature a chance

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*The creation of near-natural habitats should be one of the top priorities in conservation.*

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According to Soule & Simberloff<sup>1</sup>, the main goals of wildlife reserves are to conserve [a] large, intact, functioning ecosystems, [b] areas of high biological diversity, and [c] species or groups of species of special interest.

There seems to be no single, universal scale appropriate for understanding all ecological processes, but the consensus is that most protected areas need to be large for an ecosystem to be fully functional and self sustaining. This rules out the first goal from many of our wildlife reserves, most of which have been established to protect small, often fragmented, biodiversity hot spots, usually highly dependent on some form of management. These are often difficult to maintain and susceptible to the influx of weedy or alien species. In my opinion therefore we need to make a concerted effort to break away from our reliance on these often pathetic fragments of nature by encouraging the development of larger reserves and by promoting the creation of more non- or minimum intervention reserves in a more systematic way.<sup>2</sup> In other words, we need to create a more stable basis for nature conservation in Britain, but as part of this process, I think we need to be far more transparent about what we mean by wildlife reserves. To help gain more clarity, I suggest we differentiate between what I provisionally call [a] Untamed Nature Reserves, [b] Traditional Agriculture Reserves, and [c] Species Preservation Reserves.

### Untamed Nature Reserves

These are reserves where the emphasis would be on allowing unhindered natural processes to operate free, so far as possible, of artificial intervention, and with the eventual aim of achieving stable, mature, self-sustaining, communities. In most cases in Britain these could only be realized through considerable expansion of

existing reserves. They would be similar to the IUCN protected area category 1a (Strict Nature Reserves), which are defined as areas of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring. This type of reserve, which usually requires restricted public access, has never been established in the UK - but my proposals are more concerned with the removal of active management than limiting public access.

But why should we value such reserves? Earth's biosphere has taken some three billion years to evolve. It has undergone extreme degrees of fine tuning and diversification and has a complexity that is still well beyond our full appreciation and comprehension. Indeed, there is still no community on Earth where we know the entire living biota. The beauty of natural ecosystems, therefore, is not just in their component species but also in their highly developed level of organisation. We are only just starting to gain an inkling into their complexity. For instance many of their component species are the products of co-evolution: they are significant parts of each other's environment, their genetic makeup have been mutually affected, and their physiological and behavioural repertoires are naturally selected to accommodate their particular biota. As a result, climax or mature communities develop a more resilient web of biotic interactions and a greater degree of stability than any unnatural or synthetic community.<sup>3</sup> They are also more stable than their earlier successional stages and are, for example, less susceptible to the influx of invasive species. How, therefore, can the clumsy attempts of humans to manage these intricate systems hope to achieve anything other than a form of crude disorder? Surely we should be removing our influence from at least a selection of the natural areas we are trying to protect.

It is often argued, against non- or minimum intervention, that we can never re-create the forests of pre-history because we've lost most of the large herbivores that helped to create this ecosystem. But to argue that today's non-or minimum intervention communities are

unnatural because of this is a bit like saying the world became less natural when the dinosaurs were wiped out. Ecosystems don't die simply because we've eliminated a few of the component species - they accommodate the new circumstances. Our actions may disrupt some of the internal relationships and cause a degree of disequilibria, but ecosystems have faced disruptive influences through the history of life on Earth.

Nevertheless, in the words of George Peterken, we are talking about future natural rather than past natural.<sup>4</sup> But no matter what we call these reserves, the recreation of near-natural habitats should, in my opinion, be seen as one of the top priorities in conservation. This should not, however, be construed as suggesting that we ditch any of our important plagioclimax communities, such as our meadows, pastures or heathlands, in favour of creating non-intervention reserves. There are many other unmanaged wildlife areas in Britain with possibly little current conservation interest that could be selected for non-intervention or minimum intervention.

### **Traditional Agriculture Reserves**

These reserves evolved from the less intense agricultural practices of the pre-war era, such as hay and water meadow management, coppicing, and reed cutting. Less obviously traditional are, for example, many of our most important sand dunes, such as Newborough and Dawlish Warrens which were originally managed as rabbit warrens; and we still regard rabbits as an important feature of these systems. Heathlands are another example. Cropping, grazing, burning and other traditional activities such as turf and peat cutting, have all served to maintain these communities. Many of these traditional techniques originated as a result of early endeavours to develop agriculture, and some can be traced back to Neolithic times.<sup>5</sup>

Continued use of these traditional practices is crucial if we're not going to see large numbers of species facing local extinction from our farmed landscape. However, even on traditional agricultural

reserves there is a temptation to veer away from traditional practices in order to try and maximise biodiversity. This in my opinion is a mistake. The traditional practice, which was based on an early form of agricultural rationale, should be seen as no less important than the resulting species composition of the managed land. Once you start tinkering with management to maximise species diversity you end up effectively intensively farming the land to create a good 'crop' of species. The result is neither natural nor based on any traditional farming logic. When this obsession with biodiversity is adopted, the only difference between farming and conservation is that the first aims to maximise biomass and the latter to maximise biodiversity.

### **Species Preservation Reserves**

I refer here to reserves that are primarily managed to maintain populations of notable species - perhaps just one or two in some cases. They are similar to the IUCN protected area category IV (Habitat/Species Management Area), defined as Areas of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species. They have arisen directly as a result of the conservation movement, and their primary aim is to achieve optimal conditions for the selected species, but few limits have been set on the types of techniques that can be used to create these conditions. They often involve the use of heavy machinery, and a whole industry has built up around the application of this almost industrial scale management of conservation sites. In fact, the number of machines now being used is almost comparable to modern agriculture and includes, for example, tractors, bulldozers, fen harvester, seed harvesters, weed pullers, balers, stump grinders and rotoburying machines.

However, the resulting habitats often bear little resemblance to any known natural habitat and have been described as a disclimax (i.e. disturbance climax) or more appropriately as an anthropogenic sub-climax. Nevertheless, there is little doubt that we will need to

continue to manage sites in this way if we are to retain the full assemblage of species found in Britain. In fact, I would argue that there is scope for extending such reserves even to the point of manipulating entire landscapes for the purpose of replenishing biodiversity - but to call these sites nature reserves seems to be a contradiction in terms since nature has very little to do with their development. Unfortunately, there is a lot of temptation to use these 'quick fix' or 'techno-fix' methods today, but in my view, these often highly disruptive forms of management should be seen as a last resort, not as a first resort, as often seems to be the case today.

### **A proposed new parameter for conservation**

This classification reflects to some degree the level of naturalness of our wildlife reserves, and I would argue that the more natural a site is, either in terms of being free of all deliberate human intervention, or in terms of the length of time it has been free of intervention, the more importance we should place on it. This would mean any habitats unmodified by human influence, such as our remnant wildwoods, would be at the top of the list in terms of their conservation value. It would not however necessarily mean that any long-abandoned site would be any more valuable for conservation than some of our plagioclimax communities. In fact the opposite would often be true, but where sites have been abandoned for long periods, there should be a presumption against re-introducing any form of management.

In order to help make more of a contribution to global conservation, I've previously argued that we should rank our habitats in terms of their global importance<sup>2</sup> but in addition to this, I think we should rank our habitats in terms of their naturalness. Although naturalness was one of the original criteria used to select areas of national conservation importance<sup>6</sup> there was little attempt to quantify it, and habitats were simply labelled as either natural (usually referring to ancient wildwood) or semi-natural. It was, however, suggested that sites least modified by people would tend to be rated highly. The

emphasis was then placed on criteria such as rarity (of species), diversity (of both communities and species) and extent.

### **Rarity or naturalness?**

Today we seem to have almost abandoned the notion of naturalness when selecting and judging the conservation value of sites: what seems to matter most is the level of biodiversity, and whether there are rare species present. In fact, when judging whether a site should be notified as a Site of Special Scientific Interest we use a point scoring system based on the number of rare and scarce species present. Level of naturalness, on the other hand, is rarely given any consideration other than at a very basic level. It is probably true to say that most if not all of our ancient and long-established woodlands have been selected, whereas at the other extreme a grassland dominated by rye grass would never be selected. But one of the problems is that we simply describe most habitats, including much of our woodland, as semi-natural, when in reality these cover a whole range of different degrees of naturalness from virtually artificial to nearly natural. Taylor<sup>7</sup> touches on this when he talks about 'degrees of natural!

The definition and value on naturalness has been debated at length.<sup>8</sup> This has revealed some extreme views - such as regarding all human activities as natural. However, most people in conservation use the word to mean without human influence, although not applying this to the activities of early, pre-agrarian humans. With this in mind, unnatural has been defined as human activities that exceed our genetically evolved as opposed to culturally evolved abilities (Angermeier<sup>8</sup>) and this would include any activity that relies on technology. Unfortunately, it is sometimes difficult to draw a distinction between human induced processes and natural processes. Ecosystems are too poorly understood to allow precise measurement of all human effects, and there are concerns that increasing pervasiveness of these effects will further impair our ability to distinguish natural from anthropogenic<sup>9</sup>, but despite these problems, I agree with Angermeier<sup>8</sup>

that naturalness should be the main guiding principle for conservation.

### **Time and vintage**

It is said that nature becomes hallowed with time: the longer it remains free from disturbance the more impressive it becomes. Even derelict building sites can become interesting given sufficient time. I would therefore like to see the use of 'time free from human influence' as an additional criterion when judging conservation value. This, for want of a better term, could be described as 'vintage', and could be used alongside established criteria such as rarity and diversity when assessing the conservation value of sites. Possibly to some people's dismay, plagioclimax communities would tend to be given a low score in terms of their vintage value. Thus a coastal climax grassland would score higher than a managed pasture - but this would be just one of several criteria.

This may look like a proposal for creating lots of similar-looking woodland, but that underestimates the variety of natural climax communities expected to develop in Britain. Even our climax woodlands have a greater variety than most people realise - nineteen are identified by Rodwell", based on what's left of our woodlands. There are also many climax communities dominated by shrubs, grasses and other herbaceous species, particularly in coastal and upland situations, or on poor soils in the lowlands. In a more natural Britain we would have good representation of all of these natural climax communities.

The subject of naturalness has never been an easy one to handle, but when facing a universal loss of naturalness we need a radical shift in emphasis towards stemming this seemingly ineluctable decline into increasing levels of unnaturalness. Even in a time of unparalleled loss of biodiversity we should still avoid promoting biodiversity at the expense of naturalness.

### **References and notes**

1. Soule, M. E. & Simberloff, D. S. (1986) What do genetics and ecology tell us about the design of nature reserves? *Biological Conservation* 35 (1): 19-40.
2. Rhind, P. M. (2003) Comment: Britain's contribution to global conservation and our coastal temperate rainforest. *British Wildlife* 15 (2): 97-102.
3. Soule, M. E. 1985. What is conservation biology? *Bioscience*, 35: 727-734.
4. Peterken, G. (1996) *Natural Woodland*. Cambridge University Press,
5. Barker, G. (1985) *Prehistoric Farming in Europe*. Cambridge University Press;
6. Ratcliffe, D. (1977) *A Nature Conservation Review*. Cambridge University Press. Volume 1.
7. Taylor, P. (2004). To wild or not to wild – The perils of 'either-or'. *ECOS* 25 (1): 12-17.
8. See, e.g. the following in *Conservation Biology*: Comer, P. J. (1997) A "natural" benchmark for ecosystem function (letter) 11: 301-303; Haila, Y. (1997) A "natural" benchmark for ecosystem function (letter) 11: 300-301; Hunter, M. L. (1996) Benchmarks for managing ecosystems: are human activities natural 10: 695-697; 1997. A "natural" benchmark for ecosystem function (letter) 11: 303-304; Angermeier, P. I. (1999) The Natural Imperative for Biological Conservation 14: 373-381; (2001). Reply to Povilitis: Another Conservation Conundrum 15: 536-538; Povilitis, T. (2000) Towards a Robust Natural Imperative for Conservation (comment) 15: 533-535,
9. Higgs, E. S. (1991). A quantity of engaging work to be done: ecological restoration and morality in a technological culture. *Restoration and Management Notes*, 9: 97-104.
10. Rodwell, J. S. (ed). 1991. *British Plant Communities. Vol. 1. Woodlands and scrub*. Cambridge University Press.

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*Issue 2S (3/4) of ECOS will review many projects in Britain and Europe which are addressing wild land and minimum intervention issues.*