## Systems that Deprive Us of Wonder

A conversation with Steve Wheeler for Dark Mountain

Steve Wheeler and George Monbiot

**STEVE WHEELER**: Have you been surprised by the reactions you've got to the rewilding suggestions in *Feral*?

**GEORGE MONBIOT**: I've actually been surprised by how positive they are. I've had some really good reviews in the right-wing press, including newspapers I've been warring with for the past dozen years or more. I mean, obviously, I've got the sort of reactions from sheep-farmers I would have expected, but really people seem to be hungry for it, they really seem to want to know. And I think a lot of people feel that there is a gap in their lives, an absence of wonder, enchantment, surprise – and rewilding is possibly one of the things that could fill that. I think also a lot of people are aware that our current model of conservation is a fiasco, that even on its own terms it's failing, let alone on any measure of the wider protection of the natural world or its species, so there is a strong sense that a change is necessary, a radical change.

**SW**: It's been really interesting hearing you use the language – both in the book and the talks you've given around it – of enchantment, of passion, of intuition. Not that there wasn't passion in what you've written before around social justice and the environment; but a sense definitely comes across in the book that you yourself have had some sort of personal change in the way you look at the world through investigating this particular area.

GM: Yes, very much so. Partly it's that I thought I knew something about ecology – I studied it as part of my degree, I've been working in and out of it ever since, but some of the recent findings in ecology have transformed the subject. When I studied it – long enough ago to actually study sabre-tooth cats! – it seemed like an old subject, it seemed like most of what we would ever discover had already been discovered, and the rest was just filling in the details. Now it seems like a very young subject, and a very exciting one: because the discovery of widespread trophic cascades, for example, has transformed our understanding of what the ecosystem is and what it could be; because there's been a realisation that the ecosystems we're studying are highly depleted ones, which have lost a lot of their dynamism and the means by which habitats were created, because when you lose your large keystone species, you lose a lot of the ecological function, and an ecosystem missing those large species behaves radically different to one that retains them.

So it transformed my understanding of ecology. That also happened as a result of reading a good deal of paleoecology to try to understand what we were looking at, and realising that even most professional ecologists seem to be woefully ignorant of paleoecology and what it tells us about the systems we were studying. But above all, what changed for me was that I saw that there was hope, and that's been a rare commodity in my life and in that of anybody else who's been involved in trying to protect the natural world.

SW: Indeed.

**GM**: And seeing the hope has enabled me to find my way through an issue that was becoming increasingly difficult to navigate, because everywhere you look the picture

is such a dark one. But seeing that there's a possibility of turning it round in quite a big way, that has reinvigorated me.

**SW**: Is this hope partly in the sense of seeing how quickly nature can recover when you allow it do do its own thing?

**GM**: It's partly that and partly seeing that one of the strange impacts of globalisation is that the less fertile parts of the world become uncompetitive for agriculture, so that large areas become vacated by farmers available for rewilding. So we do have the potential to turn some very large areas of the world, particularly the industrialised world, back over to nature and to populate it with missing species.

**SW**: And of course that would be an end in itself, but also just being able to see small areas where you have that richness of biodiversity would then impact on what you talk about in the book, the 'shifting baseline syndrome'.

GM: Yes, that's right, and in fact shifting baseline syndrome – the idea that what you experienced in your youth is the normal state of the ecosystem, and so conservation becomes an attempt to recreate the ecosystems that existed in your youth, oblivious to the fact that those ecosystems were themselves highly depleted – it's that syndrome that is responsible for the dire state of conservation in this country. In some other parts of the world, too, but Britain is a particularly extreme case. There's no other place on earth where conservationists are quite so frightened of nature, and where they try to such an extent to manage and suppress natural processes. There's nowhere else where conservation so closely resembles a slightly modified form of farming, and that's because conservationists, like everyone else, appear to be profoundly ignorant of what was here before farming, and what could be here without farming, so they focus on the species that have happened to survive 6,000 years of farming – which happen to be tough, weedy, rapidly reproducing, 'R-selected' rather than 'K-selected' in the jargon of ecologists, rather than the species that did live here and could live here again.

**SW**: It struck me, to be fair to some of these conservationists, that there's a strong psychological reason when they talk about the dangers of undergrazing and so forth: there is a fairly messy phase that the ecology would need to go through before it became a rich, old growth forest, and that looks like stinging nettles or bracken, which to a lot of people elicits a reaction of: 'Oh look, these weeds are coming here, this is a less beautiful landscape, this is less useful for the needs we wanted it for'. There's a lack of faith and trust in the succession of species – that one stage needs to happen first and then the next colonisers will come and the next.

**GM**: Almost every stage is a stage of increasing richness over what was there before. Some of the upland sites are so impoverished, have so little life, that any recovery in terms of scrub, bracken, brambles, would actually mean an increase in biodiversity. It's fascinating how almost every aspect of the discussion about what we're trying to conserve and why has been completely distorted by our perceptions of the present overwhelming the past and the future.

For instance, conservationists will, with a straight face, assert that their grazed open grasslands are more biodiverse than woodland. You say 'What do you mean?'

and they say 'They're more biodiverse'. And you ask which taxa they're talking about and the answer is 'flowers and butterflies' – it's always flowers and butterflies! So you say, 'Yes, strange to relate, grasslands are more diverse in non-woodland species than woodlands are'. But they don't see it, and they genuinely believe that more flowers and butterflies equals greater biodiversity in total, and ignore all the other taxa, whether they're beetles, moths, spiders, mammals, birds, fungi... trees! – whatever they happen to be. All of those are ignored, because they only happen to see biodiversity in two groups.

**SW**: This is a really interesting issue in terms of people's inability to understand ecological processes – and it's an evolving subject now, as you say; we're still continuing to understand how interdependent and how subtle the relations are, we're understanding the microbiome of the soil in ways we didn't understand before, or the ways that forest trees connect to each other through rhizome networks under the forest floor, and all this sort of thing – but it seems, in a sense, a subset of a bigger problem, which is that people have learnt to think in certain 'civilised' ways, such that they find it very hard to understand complex non-linear systems, like a diverse, rich ecosystem.

GM: Yes, and because of that failure to understand, we succumb to the self-attribution fallacy, which is, in this case, that human beings are necessary to protect the natural world, that it can't survive without us; 'How did nature cope before we came along?', that's the guiding principle, this belief that the natural world needs us and depends on us. And there's a very strong human desire to be needed and to feel useful, and one of the reasons why it's often hard to get through to the conservation groups I'm trying to reach is that they want to believe that all their efforts have been worth something; they want to believe that more needs to be done than taking down the fences, blocking up the drainage ditches, reintroducing missing species and then standing back. They want to be useful, and actually humans have been too useful; too useful for our own good and too useful for the natural world. It's time we were less useful.

**SW**: It's easy to understand, in a way, that people who perhaps grow up in the city, go out into the countryside we do have and find it's nicer than living in a purely human-built urban environment, and they attach themselves to that particular idea of countryside, it's imprinted on their minds, so any threat to that they will view as a bad thing, that it's destroying something that is more natural than what they're used to.

**GM**: I don't see that as a difficult part of the struggle at all. What I've found is a very large number of people writing to me and saying 'as soon as you explained that our bare hills are unnatural, and that they're kept that way by heavy grazing by sheep, I've not been able to see them in the same light again, and I feel this burning urge to see them reforested.' In fact, most people see it very quickly indeed.

The sticking point is this subsidised sheep-ranching, which is demanded by farmers, supported by government, by conservationists, by rural development agencies, by almost everyone who has a stake in the uplands of Britain, and that's when it becomes

very hard to challenge, because you've got two things you're up against; one is the interests of the people who are keeping sheep there – and the only reason any farming takes place on the uplands at all is because of public money, if it weren't for subsidies it would all go tomorrow – and the other is that fact that so many of the agencies which should, perhaps, have a different view, are so deeply embedded in a system they cannot see their way out of.

There is this myth of undergrazing – if we don't keep the sheep on the land the land will be undergrazed and then something awful will happen. Well, how can a native ecosystm be undergrazed by an invasive ruminant from Mesopotamia? So they're locked into this mindset that is very hard to break. Now I'm not trying to get all the sheep off the hills at all, and I'm not even trying to get any of the farmers off the land, but I want the farmers to be doing something different, and I've suggested changes to the subsidy system that would enable that. But the reaction I've got has been extraordinary. The Farmers Union of Wales has literally been saying I'm trying to clear them off the land and into reservations like the Native Americans.

**SW**: Right, by giving them the option of not clearing their land, which they don't currently have. I did like the Richard Scarrytheory of why these lobbies have such disproportionate power [that people defer to any occupation that appeared in a children's book they read when young] – I think it's true. I think also, with farming and fishing, there's an element where people understand what it is, and they feel that it is a more authentic form of employment than what they do, because most people in this economy shuffle abstractions around in an office all day.

**GM**: Yes, there is a cultural cringe towards people who make their living on the land or the sea, and it's a cultural cringe that often allows us not to see that they're making their living by smashing the natural world to pieces, and it allows us not to see that some of these people are some of the richest people in Britain, who have extremely cushy and cosseted lives, all paid for by taxpayers' money, and that they sit behind a desk just as much as we do.

This cringe extends to the attribution to farmers of all sorts of qualities that they don't necessarily possess. For example, they've been very successful in persuading us that they know more about the countryside than anyone else. I've got a friend who worked as a woodland oficer in Wales, trying to persuade farmers to protect their woodlands and to plant more, and he found that some of them literally couldn't identify the trees on their land – they couldn't identify an oak, a beech, an ash, they were profoundly ignorant of natural history, and they described woodland as rubbish: 'We have to clear that rubbish away'. They may know a lot about sheep-farming, but some of them know almost nothing about the natural world. One of the things I've wanted to do is to strip away the mythology farmers have built around themsleves. They are a business like any other, and yet we treat them with extraordinary deference.

**SW**: Part of Dark Mountain's interest in looking at the deep cultural stories we tell ourselves is precisely to try to dig down to the roots of this sort of thing. Why do we reify farmers in this way, why do farmers look at the countryside and want things

to be in straight lines, and want to get rid of 'the rubbish' and make everything neat? These things come from somewhere, and there's an argument to say that, if you go for the root, it may take longer but you'll simultaneously start fixing lots of different problems.

The shifting baseline syndrome, for example, struck me as a useful concept that could be applied to many different areas; it's true of the natural environment, it's also true of our own lives. In the book you talk about the reduction of children's ability to roam and the amount of outdoor time they have, but equally: there was an xkcd cartoon the other day which was basically just a collection of quotes from the last 200 years of people complaining about the pace of life and how people don't take the time to write proper letters anymore because of this new-fangled telegraph. And obviously, the sting of the whole thing was supposed to be that these complaints are spurious and that actually everyone's always been nostalgic and everyone's always complained about this sort of thing. But I took exactly the opposite lesson from it; for me this was a graph of civilisation speeding up more and more and more, and people just forgetting what it was like before.

And we simply don't know – oral interaction wasn't recorded, so we don't know what kind of conversations people had back then, we don't know how slowly people talked. The closest we can come is trying to find hunter-gatherer tribes and looking at how they intereact, and a lot of people who do that come back and say it's a completely different form of human interaction. You'll ask someone a question and they will pause for a minute, waiting for the heartfelt answer to come out. Or, I read an account of a tribe on a South Pacific island somewhere, whose smile takes a minute – it spreads across the face 'like the sun rising' – and for Westerners who go there and experience that, they just melt. For someone to hold their attention on you and smile like that for a full minute is just overwhelming, they can't take it; we don't interact like that, and this whole wealth of possibilities is cut off from us precisely because of shifting baseline syndrome.

**GM**: Yes, it's very true, and we forget so much. We have no intergenerational memory, and as a result we deprive ourselves of so many good things. Daniel Pauly also coined the term 'Shifting waistline syndrome' – he points out that a medium sized pair of trousers today is a lot bigger than they used to be, so we think we're not getting any bigger but we are!

**SW**: You've been at pains to point out that you want to rewild the uplands but leave the lowlands for agricultural practice – albeit perhaps not as currently practiced, but generally. Do you think that kind of agriculture is sustainable?

**GM**: Well, it depends what you mean by sustainable, which is a term that has become almost meaningless. Can it be sustained? Probably, yes, if the phosphate doesn't run out, which is probably a couple of hundred years off. But at great cost to the natural world, and already we see that cost in terms of the extraordinary losses of wildlife in almost every nation on earth, including our own. A remarkably rapid loss,

such that even since my youth – which admittedly was quite a long time ago – there have been profound changes.

I remember when the riverbeds were so thick with eels migrating to the sea in the the autumn that they looked almost black, and now the european eel is a highly endangered species, there are very few of them left – it would have been inconceivable to me if someone has said that that would be the case. For some 10,000 years following the ice age there was this massive migration, and now it's come to an end, just about. I remember on summer nights, the moths would pack the windows, so that you could scarcely see out, of all sort of colours and shapes and sizes, which was a wonderful adventure for a boy like me, just to log the species stuck to the window, trying to get in. Fields used to be covered in white mushrooms, all gone now, and that's just in my lifetime.

And as I say, that was already a highly depleted ecosystem; but it's been so radically depleted in that short amount of time, and largely by agriculture, so it's plainly unsustainable in terms of maintaining even the barest scrapings of life. It might be sustainable in terms of preserving food production, but it depends where you are, we're now seeing in the interior of the United States large areas rapidly becoming unsuitable for agriculture through a combination of climate change, aquifer depletion, and overuse of the soil.

**SW**: There's a huge energy input into this kind of industrial agriculture as well. I think I read that in 1940 we got 2.5 calories out for every calorie we put into agriculture, and now we put 10 in for every 1 out, largely in the form of fossil fuel use. A lot of people point out that using small-scale organic farming, permaculture, forest gardening, ecoagriculture, you actually get much higher yields of food, and certainly if you start building soil fertility, you get far more nutritious and sturdy plants, which in turn can resist pests on their own far more effectively.

So it's shifting baseline syndrome again – just as you talk about how the fish we're used to buying today are tiny compared to what they were in the past – and we've forgotten that as well – so our attitude towards agriculture and the way it needs to be done is very much channeled by our experiences of depleted soils, of using monoculture, of continually fighting against nature's attempts to push us towards a K-type ecosystem; which in this land is some kind of temperate forest. So the one thing stopping us actually growing much more food in a way that damages the environment much less, is the way in which our current economy demands that we have as few people working in agriculture as possible, so we can mechanise it and have big empty fields with no hedges that we can drive combines across.

**GM**: Well, I'm constantly struck by how little we get for our money. The EU is spending over 50 billion euros every year on supporting agriculture and all it's really doing is supporting multi-millionaires who are buying racehorses and fine wines and Bentleys to drive about in, because they're doing exactly the same things they would be doing except they're being given a whole lot of free money on top of it. It's remarkable

that we can spend all this money and ask for nothing in return, or just some tiny little concessions on the environment, some of which actually do more harm than good.

Why can't we say: 'If you're going to get this money, here is a radical change you're going to make to how you farm'? If farmers want to farm without subsidy, that's one thing, but if they're going to farm with subsidies we should demand at the very least that they do so in ways that don't destroy the hydrology, the soil, biodiversity. I see permaculture as being highly compatible with rewilding, actually: rewilding zones could be seen as the outer zone of permaculture, or permaculture as the inner zone of rewilding, and there are a lot of permaculturists who have said that.

**SW**: It's fascinating how this idea reoccurs – that if we get out of nature's way, things work better, and in this country, nature wants to become a forest, so if we stop trying to kill off the forest and grow what are essentially R-series weeds like wheat and other grain crops, then we will produce much more for much less effort.

**GM**: That has to be demonstrated. I don't know if that's always true; I would need to see some comparative figures. I'm sure that for some kinds of production it's going to be true, I'm not sure if it's true for all kinds. But certainly the current model of agriculture could not be more destructive or alienating, and could scarcely produce food of lower quality than it does at the moment.

SW: The cult of wheat would be a good thing to defeat on a number of different levels as well. We have an epidemic of people suffering from health problems because wheat itself was never a great choice – not to idealise hunter-gatherer lifestyle, but the fossil record is fairly straightforward – people were eating 200 different species of food and they suddenly go down to about 12 and they all drop a foot in height and half of them get rickets. And there's the idea that – I think William Davies, who's an American doctor who wrote a book called Wheat Belly, has gone into the most detail on this that I'm aware of, but there are plenty of other proponents of this view – that the wheat we have now is the dwarf wheat engineered in the '60s and that it's very different to the kind of wheat we had before; it has particularly inflammatory forms of gluten in it, it may be less nutritious, and in fact it's more addictive because it binds to opiate receptors in the brain, which is why people have wheat cravings when they try to quit wheat, which is obviously on my mind because I'm trying not to eat the other half of that flapjack you offered me that's still sitting there.

GM: Oh, sorry, I'll get rid of it.

**SW**: That's quite alright.

**GM**: I'll put it on the table behind us. There you are, temptation gone. [Full disclosure: I ate the flapjack after George left.] Yes, I can't say anything about that specifically, but certainly, the model is bust, and it's being kept afloat by the peculiarities of the economy and by public money.

**SW**: Do you think these problems extend into science in general, and the way science is practiced?

**GM**: I think that's too broad a generalisation.

**SW**: I'm all about the broad generalisations.

**GM**: Right. Well, I would say that there is some excellent science practiced across all disciplines, but there is also a thoughtless, narrow conception of what research comprises, which is damaging the wider scientific quest. So, for example, seeing how plant science departments over the last 20 years have been entirely taken over by molecular genetics work, partly because of the financial constraints to which universities are subject. So starting with the Research Assessment Exercise, which has now turned into the Research Excellence Framework, you are rewarded by the number of papers you publish and the kinds of journals in which they're published, and this means that ecological work, for instance, tends to attract much less funding than gene sequencing. Gene sequencing is something you can do very quickly, and can knock off a paper very quickly indeed. Good ecological work can take years, and if you don't produce many papers and they're not in the highly ranked journals, then you're penalised for that and that can sometimes militate against a broader view of science, which can be very damaging.

SW: I see some of these principles as being present across a lot of different disciplines. So for example, when we talk about the difficulty of understanding complex non-linear systems like ecologies, I see exactly the same thing happening in the health sciences. What's happened is that more and more specialisation, which to an extent is inevitable – the more you learn about the human body, the less one individual can actually know all of it, and the more people are having to hive off into different silos – but there's less and less scope for people to actually make interesting interpretations across those different silos. And partly this comes from my background – I'm an acupuncturist, amongst other things, so I'm very interested in the idea that you can approach health from the whole, and then work your way down to smaller components, rather than from the components up. But I see this a lot even in the more mainstream health sciences; that there are people, and they're often quite senior people who have been in the sciences for a long time, fighting a kind of rearguard action for the ability of human beings to actually make some kind of scientific interpretation of the whole.

**GM**: There is a real problem – several real problems – with the extreme specialisation which research demands these days. That's not to say there shouldn't be specialisation, it is necessary if we're going to get to grips with very complex problems, but one of them is that people lose sight of the context within which they're working; which can be not just a scientific context, but also the political, economic, social context. Another is that we end up speaking mutually incomprehensible languages – the scientists say 'take nothing on trust', the motto of the Royal Society is 'Nullius in verba', 'take no-one's word for it', but we have to; I've got a science degree, I've spent my career working on issues which are affected by science, I read peer-reviewed papers every week, and yet these days I find it almost impossible to understand much of the methodology or results of the papers I read.

I can understand the abstract, the introduction, I can understand the discussion and the conclusions, but the methodology and results might as well be written in Mandarin, because it's too complex: it involves too great a mathematical knowledge, too

great a specialist knowledge, too great an understanding of jargon and acronyms for the layman to understand it – and when I say the layman, I mean anyone, including scientists, who is not in that very specific discipline, or very specific part of the discipline. So you have to take people's word for it, you have have to take it on trust – because you have no other means of assessing whether or not a hypothesis stands up, because you can't judge for yourself whether the methodology is a sensible one, and whether the results actually stack up. It's impossible to do so, no one has sufficient knowledge, so we're taking stuff on trust all the time, and there's a profound contradiction there which I see aired very little among scientists.

**SW**: I remember this happening with Michael Mann, and the infamous Hockey Stick graph, there was a Congressional Investigation into it, and you ended up having layer upon layer of experts pronouncing on the previous layer, culminating in rival Professors of Statistics arguing over what was good practice in the field; at that point no layperson is actually going to be able to make a judgement on it.

GM: No, and here there is a major democratic problem, because we simply cannot understand the means by which the world is understood, and we all have to rely on some form of interpretation. Now the interpretation can just be the discussion and conclusions of a paper published in a peer-reviewed journal, which is as close to reliability as you're likely to get, but if you have the intellectual equipment, you would probably find that those discussion and conclusions weren't accurately reflective of the methodology and results. So there's a real problem there and it's hard to see a way out of it. Specialisation is a curse – it's a necessity in some respects, but it's also a curse, and one of my strong concerns is that children specialise far too early; they have to make decisions between humanities and sciences, for instance, far too early. I would love to have continued to study humanities alongside biology in my degree, but if I wanted to study zoology, I had to study only zoology. I felt the loss very keenly at the time, and still feel it today – I felt I was cut out from a world of other wonders.

**SW**: It reminds me of Ted Hughes – he did the opposite. He started out studying English and then had a dream where there was a bleeding fox's head, representing the soul of poetry or something, which said to him: 'You're killing us!' So he switched to anthropology, so that he wasn't exposing the soul of things to the academic process, where you have to do things on deadlines and analyse and write papers on them and so on.

**GM**: Interesting. I guess I did it for slightly different reasons. Given a choice, I was very keen to study English, and history, but I knew I could do that to some extent without help, whereas there was no way I could study zoology without help.

**SW**: Yes, this is, I think this is what Ludwig von Bertalanffy's wife said to him – he wasn't sure whether to go for philosophy or biology – she said 'do biology, because you can always do philosophy in your spare time, whereas if you do it the other way round you won't know what's going on'. Of course, if we were to extend the logic of rewilding – saying 'nature knows what its doing, let's interfere less' – then we would probably try to rewild some of the schooling for children as well.

GM: Oh yes, I deplore the way that schools are being turned into sweatshops and I think, apart from anything else, it's counter-educational. It teaches children nothing about life, gives them none of the equipment they need for life, to navigate the very compicated world we're involved in, and it makes it very hard for them to discover the wonder and the joy and the enchantment in life. We're returning to a Gradgrind system of education. The psychologist Aric Sigman wrote a paper which argues that the less time children spend in classrooms, the better they do in a number of key subjects—and that's because, when you're out in the woods, you're having to use a whole lot of skills that are more or less dormant in the classroom: you're having to work things out for yourself, you're having to reason, to use spatial awareness, to find ways of describing things and engaging with things, there's far more initiative required when you are in nature than when you are in an ordered, regulated environment, which has been health and safety tested and where everything is pinned down to the last letter of the national curriculum.

**SW**: There's a guy called Thom Hartmann who theorises that ADHD is basically what happens when a child doesn't respond well to the domestication process: everything that's a problem in the classroom is actually a virtue out in the woods, so you have this constant scanning of the environment, you have a very quick, responsive mind, you tend to have good physical abilities...

**GM**: Yes, I'm sure that's right. And our bodies are hideously neglected in school, there's less and less school sport, but more importantly, there's less and less outdoor education; just running around in the woods, really, is what I'd like to see children doing, it doesn't need to be structured. Unstructured play in a structurally diverse natural environment is the best education a child could have, but they have less and less of it, and this is one reason why its possible for such great destruction to take place with so little protest, because people have no conception of what's being lost.

**SW**: And I think, psychologically, it's the same instrumentality that we're learning: the same mindset that allows someone to think you can force a child to learn by chaining them to a desk, is the same thing that allows the police to think that that can just exploit women in order to gain intelligence, is the same thing that allows people to think its OK to destroy complex ecosystems in order to grow the plants you want where you want them.

**GM**: Yes, I think that's right. What we're taught is a very simplistic approach to getting what you want, through the lens of cost-benefit analysis, and that is one of the most destructive forces on earth.

**SW**: Do you ever feel a need to try to go towards the heart of these things, working on a more psychological level, or poetical level, if you prefer to look at it that way – rather than trying to fight these battles, over here is global justice, over here is the environment, and here is the party politics of the UK, which seems long way from functional engagement with those more important issues.

**GM**: Well, I would like to think that poetry and psychology infuse my work. I'm certainly very strongly influenced by poetry, I read a great deal of it, similarly by

psychology and I don't think either of them can be divorced from an attempt to engage with and understand the world and confront the forces that are destroying it. I think it's a great mistake to imagine that you can do so solely through number crunching and logical analysis – they're necessary, I'm not dismissing those, in fact they're an essential component of it, and just as the quants, as Paul [Kingsnorth] calls them, are wrong to imagine that they can do without poetry, so the poets are wrong to imagine they can do without quantification. I believe we need both.

And I'm in a fortunate position that I have a science background but a lifelong love of literature and culture and the arts, and above all of nature, and that allows me to try to use all of those tools for understanding and for engagement. I don't always get the balance right, I'm sure, but this takes me back to my point about the narrowness of schooling, and I do believe that the science is just as important as the poetry, and without that then you will only ever form a very crude and coarse appreciation of what the world is and what it could be.

**SW**: So where did this... 'reforming zeal' come from?

GM: Well, all of us are a package of childhood experience and adult understanding and my own childhood experiences were stark and fairly harsh. I went to a boarding school when I was very young, which I hated, and I suppose one of the things it gave me was a lifelong hatred of bullies, because I encountered a few, and fought with them. So one of my motivations is to understand bullying and to identify and expose it, because as a child you have a very strong sense of injustice, and that's something I've tried very hard not to lose. At the same time, my childhood was filled with wonder and delight, partly because I threw so much of my energy and enthusiasm into the natural world and I spent every moment I could outside, exploring, learning about wildlife, chasing it around, getting up to my chest in pond water with a net and chasing after butterflies and watching birds and sitting out waiting for animals to emerge, and in that respect it was a childhood filled with enchantment, which is something I've sought to recreate. So there were the bad sides of it, which have encouraged me to fight, and the good sides of it, which have encouraged me to seek wonder wherever I go; and where wonder is not there, then I fight the system that deprives us of it. That's the nearest I can get to it.

**SW**: Mm, it's so important to keep that thread unbroken, isn't it? On the one hand, schooling and education, and just learning to become an adult, takes you away from those experiences to an extent, but that's how you learn the tools to actually go out and try to make a difference and get things done, that's how you learn to write well, that's how you learn to think logically and read scientific papers and do the things you need to do, but at the same time you need to keep that golden thread going back to the original experiences to remember why you're doing it, and one day you wake up and say 'I'm just going to give up'.

**GM**: Yes. I mean, we mustn't be bound irrevocably to the negative experiences; it's important to get past them – that's where psychology becomes so critical – but in getting past them, not to forget them, and not to cease to understand, because that

understanding is at the root of everything. I think child psychology, if we get that right for our children, then we set them up for a lifetime of happiness; if we get it wrong we set them up for a lifetime of misery, or potentially a lifetime of slowly working towards understanding and enlightenment, and sometimes childhood misery enhances the understanding and enlightenment, sometimes it impedes it, it depends what you do with it.

SW: I watched a documentary on Buck Brannaman – he's one of the models for the Horse Whisperer in the novel, and he actually came and helped out when they made the movie. He's an extraordinary man; he grew up in quite an abusive household, his father made him and his brother be child blindfold trick-ropers, they were quite famous, so they were pushed onto the national stage at a very young age. And especially after the mother died, his father was quite alcoholic and violent, and these scars obviously went very deep, but Buck fell in with someone who was training horses in a way he'd never seen before, and he took all those childhood experiences and turned them into empathy for the horse; and all of the violent, cruel ways of breaking horses that people do, he just threw them all away, and he gets the horse to cooperate by understanding it and working with it. It's one of the most moving things I've seen in a long time, and it comes back to exactly what we're discussing, in a way: he talks about the horse as a mirror for our own souls, and he gets quite emotional when people bring horses along who are damaged and abused to the point that they're attacking people and they're going to have to be put down. He says: 'This is not the horse's fault; humans failed this horse.'

I think you can extend that same logic out to the environment in general; the way we treat the hills of Wales is a mirror to us, and I wonder if part of the reason people have trouble confronting some of the issues you raise in *Feral*, and all of the other environmental issues, and indeed the same with how we raise and educate children, is it's bringing up issues of their own that they need to deal with.

GM: Yes, of course, and that's the same with any challenge you present to settled interests. I'd like to see that documentary – it's another good example of how you can get things done without bullying, and one of my quests in life is to show how that is possible, how this system, which is basically a system of bullies, has led us into so many bad places, and how, by shedding that, we could lead ourselves into so many better ones. And I think it's true to say there is a sense in which the land has been brutalised and abused, just as many people have been brutalised and abused and many animals have been brutalised and abused; and when you see the land flayed, deprived of its vegetation, the soil eroding away, the rivers going through a cycle of flood and drought, biodiversity almost gone, the hills silent, that is abuse and brutalisation; and the industries which we have come to accept as normal emerge, when you see it in that light, as industries that are pathological, they're pathologically flawed, almost psychopathic in terms of their perpetual brutality and abusiveness. So yes, that's not a bad way of looking at it.

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Steve Wheeler and George Monbiot Systems that Deprive Us of Wonder A conversation with Steve Wheeler for Dark Mountain 13th December 2013

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