ON UNEVEN GROUND
The Multiple and Contested Nature(s) of Environmental Restoration

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SUMMARY

Environmental restoration is emerging as a major driver in the repair and reversal of some of the world's most severely degraded landscape systems, with growing interest in the status and composition of restoration efforts. Although much has already been written about the theory and practice of environmental restoration, both positive and negative, hitherto the literature has tended to overlook the complexity bound up in defining restoration discourses, and perhaps more importantly, the physical, material consequences instilled through such human choice. The mutability of discourses of environmental restoration means that it can be moulded and (re-)shaped by different actors and contexts, with different values and meanings attached to 'nature'. There exist multiple and contested natures of environmental restoration – nature(s) both in the sense of the properties of restoration, and also that which is restored to a site.

In this doctoral thesis, I demonstrate how discourses of environmental restoration are defined and interpreted, which discourses (if any) appear to dominate, and how these are mobilised to produce 'restored nature'. Attention is also awarded to the environmental implications incurred when such discourses are played out on the ground. The research is grounded empirically through reference to the case studies of the Eden Project (Cornwall, UK), the National Forest Company (Derbyshire, UK), and the Walden Woods Project (Lincoln, MA) and their adoption of restoration practices. Analysing the processes and practices of environmental restoration within a framework of social nature and cultural landscapes serves to destabilise the dualism distancing nature from society – a preserve of environmental ethics and philosophy – for such synergy not only highlights how ideas of (restored) nature are socially constructed, but also addresses the material production of nature, reinforcing the interactions between natural and societal actors.

Keywords | environmental restoration; nature; social nature; lexicology; the value of nature; environmental ethics; landscape integrity; manipulation and intervention.

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ABBREVIATIONS

ACVP	Atlantic Coast and Valleys Project
CLI	Caddo Lake Institute
CCHS	Concord-Carlisle Regional High School
DCR	Department of Conservation and Recreation
EWA	Estabrook Woods Alliance
FC	Forestry Commission
FOTC	Friends of Thoreau Country
FR	Forest Research
HNFF	Heart of the National Forest Foundation
HTB	Humid Tropics (Rainforest) Biome
LCC	Leicestershire County Council
LUC	Land Use Consultants
NFC	National Forest Company
RESTORE	RESTORE The North Woods
RNC	Restoration of natural capital
SCF	Sand County Foundation
SDDC	South Derbyshire District Council
SERI	Society for Ecological Restoration International
SWT	Staffordshire Wildlife Trust
TCCA	Thoreau Country Conservation Alliance
WPBOD	Walden Pond Board of Directors
WPSR	Walden Pond State Reservation
WTB	Warm Temperate (Mediterranean) Biome
WWP	Walden Woods Project

I would not have every man nor every part of a man cultivated, any more than I would have every acre of earth cultivated: part will be tillage, but the greater part will be meadow and forest, not only serving an immediate use, but preparing a mould against a distant future, by the annual decay of the vegetation which it supports.

(Thoreau 1862 [2001]:249)

CHAPTER ONE

The Shifting Sands of Restoration Discourses

1.1 Introduction

The rationales behind, and indeed practices of, environmental restoration appear to all intents and purposes to be located squarely on a bed of quicksand, for they perpetuate a loose framework of authorship and ownership of definition. Within an environmental context, there exist multiple and contested natures of restoration – nature(s) both in the sense of the properties of restoration, and also that which is restored to a site. Restoration is difficult to qualify; harder still to quantify. Although this is not a new phenomenon, for environmental restoration has always had manifold rationales (Clewell and Aronson 2007; SER International 2004), what is particularly significant within contemporary society is the interpretation and application of environmental restoration, and its subsequent implications for the environment. It explores the fine line – and overlap – between an art and a science, to provide an approach which tests the dynamism of nature-society interactions in improving the landscape condition. The application of restoration rationales extends to forests, grasslands and prairie, wetlands, rivers and watersheds, lakes, coastal and marine areas, wildlife, invasive species, extractive industries, and urban areas. Environmental restoration at once assumes the roles of both the rearguard and the minutemen – responding to both established and new-found environmental challenges.

1.2 The Contours of the Environmental Restoration Debate

Environmental restoration is emerging as a major driver in the repair and reversal of some of the world's most severely degraded landscape systems. As Eden *et al* (1999:151) suggest, "this new and positive approach to environmental management extends the conservation movement's armoury from protection and preservation to active and holistic intervention, from retrospection to shaping the future of nature". The practice of environmental restoration is one in a long line of techniques attempting to relieve contemporary environmental concerns, and has generated animated discussion across many disciplines, including *geography* (Eden 2002; Eden *et al* 2000, 1999), *ecology* (Perrow and Davy 2008a, 2008b; Clewell and Aronson 2007; van Andel and Aronson 2005; Jordan 2003), *economics* (Aronson *et al* 2007a; Aronson and Le Floc'h 2000; Clewell 2000; Robertson 2000; Costanza *et al* 1997), *politics* (Light and Higgs 1996) and *ethics* (Light and Rolston 2002; Throop 2001; Elliott 1997, 1982; Katz 1992). Restoration practices are highly relevant to the broad field of human geography and planning; informing debates on land use, environmental policy and planning, and sustainability. With core concerns addressing conservation, compatibility and futurity, restoration practices claim to promote sustainable environmental management and biodiversity conservation.

The rationales informing restoration practices raise several issues for environmental planning – particularly with regard to *definition*, and the *politics of conservation*. Concerns surrounding the definition of environmental restoration are exemplified through the promotion and challenging of restoration discourses by numerous lobbies and parties, with implications for the restoration debate. Such discourses are constructed and moulded by different social expectations and experiences, both expert and non-expert, with the meanings and impacts not only culturally- and politically-dependent, but also grounded in imagery and symbolism.

Widely-accepted definitions of environmental restoration are hard to find, in large part due to its range of functions, and bearing on an extensive array of issues. Several discourses are advocated and advanced, and while no definition can be neutral, it is the Society for Ecological Restoration International (2004) definition (a fundamental advocate for restoration worldwide) which provides a point of reference for debates explored throughout this thesis. Restoration is regarded as:

> The process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed.
>
> (SER International 2004:3)

with the idea of recovery further qualified thus:

> Intentional activity that initiates or accelerates the recovery of an ecosystem with respect to its health, integrity and sustainability.
>
> (SER International 2004:1)

Within the second statement, the use of *initiates* and *accelerates* assumes these are good practices, with a focus on restoring functionality to a landscape, and through that, promoting compatibility with the wider landscape context. This definition stands apart from many former readings of restoration (explored in SER International 2004); the difference lies in the removal of an historical element, that is, the restoration of a landscape or ecosystem to a previous, pre-disturbance, or 'original' condition. This aids in reasserting (and reaffirming) the status of environmental restoration as an approach to creating new, healthy landscapes; as opposed to one which attempts, but ultimately can never succeed in, returning land to a pre-conceived ideal.

Rationalisations (and practices) of environmental restoration are played out within the politics of conservation. Narratives of environmental 'loss' (Harrison 1993) were the dominant language in conservation until recently, and concern surrounds whether environmental restoration is adding to and modifying such a narrative, or simply undermining it. The viability of restoration as an approach to sustainability is thus brought into question. Concerns of environmental ethics are fundamental here, for the practice of environmental restoration has been interpreted as a fraud – an 'anthropocentric conceit' – for restoration is *designed*, but nature *evolves* (Katz 1992; Elliot 1997, 1982). Much restoration practice assumes more of a middle ground between these extremes, for while restoration necessitates some degree of manipulation and intervention (and thus 'design'), restoration can also complement natural processes (those of 'evolution'). However, restoration is also deemed unethical amid claims that it deceives society, for restored spaces are seen to be less valuable than the 'original', and unnatural, despite saving natural values that would otherwise be lost:

> Trigger: And that's what I've done. Maintained it for the past twenty years. This old broom has had seventeen new heads and fourteen new handles in its time.

> Sid: How the hell can it be the same bloody broom then?
> Trigger: There's the picture. What more proof do you want?
> (*Heroes and Villains*, Only Fools and Horses, BBC 1996)

As illustrated above, the presence of the picture is used to reinforce the 'original' status (and thus 'naturalness') of the broom, even though this contrasts with the actual material constitution. What is also evident is the significance of *representation*. Although the physical appearance may be similar, the evolutionary trajectory is markedly different, thus arguably affecting its intrinsic value. To use an environmental analogy, then: "A forest cannot be 'rebuilt' and remain the same forest, but we could probably rebuild a forest similar to the original if we knew how. No one has ever done it. [...We] do not have a parts catalog, or a maintenance manual" (Maser 1988 in Katz 2000:87). All this points to the value attached to concepts of 'nature' and 'the natural' within the rationalisation and mobilisation of restoration discourses (see especially Swart *et al* 2001). Such valuation informs and guides how restoration is played out on the ground.

The intent and purpose of environmental restoration discourses is also subject to social contestation – pitting the *need* for restoration against the extent to which environmental processes should be allowed to unfold (see Quinn 1992). In terms of aesthetics, debate surrounds the extent to which 'attractive' landscapes should be created, or be a coincidental side effect of restoration efforts (an issue discussed in Hettinger 2005a, 2005b, 2005c).

1.3 Spotlighting the Nature(s) of Restoration

1.3.1 The Research Issue

As acknowledged by Eden *et al* (1999:151), "it is difficult to generalize about restoration in principle because its consequences and value are highly contingent in practice" – there is no 'one size fits all'. Instead, elements of preservation and utilitarian traditions combine with 'respectful manipulation' (Cowell 1993). The disparate, inconclusive quality of environmental restoration discourses stems from numerous rationalisations of restoration, many of which draw upon similar themes. To further complicate matters, such discourses are often employed interchangeably. Environmental restoration encompasses practical claims, and serves different agendas – there is consideration of socio-cultural, economic and political concerns alongside

the more traditional issues of the environment and ecology. Thus, a social nature epistemology underpins this research, for it draws out the interactions between nature and society, and particularly how nature is culturally constructed and 'manifested' through discourses of restoration.

This doctoral research is set against a backdrop of an absence of research exploring the changing nature of environmental restoration, and the influences of socio-natural contexts. Such research can attend to the 'scalar interactions at play' (to paraphrase Milbourne *et al* 2008), addressing challenges and obstacles regulating the existence of particular discourses – and, importantly, how (and why) restoration is initiated, mediated, and contested. "Such contesting constructions are possible", suggests Eden (2002:317), "because the concept of restoration, like that of sustainability, is plastic: it can be shaped and redefined by different groups and its meaning and impact are politically and culturally contingent as well as symbolically charged". It is such insights that form the foundation to this research:

Through exposing the multiple and contested natures of environmental restoration, (i) what are the dominant restoration discourses to emerge, and (ii) what are the implications when discourses are mobilised into environmental actions?

The research explores the dominance of particular restoration discourses – and thus what is reinforced or downplayed through such discourses – to determine why particular restoration themes are advocated and advanced, and the subsequent implications for the environment. In using the terminology of 'discourse(s)', I refer to the particularities of spoken and written language, and within that, to the groupings and framings of such expressions, exchanges, and reasoning. As Light (1995:16) argues, "background assumptions can shape the meanings of words, and that as those assumptions change over time the meanings of metaphors based on those words can 'drift' to something different". The multiple and contested meanings of environmental restoration are explored, with a focus on the shaping of discourses, and their vulnerability to change. Shifts in emphasis may provide evidence on the dualism of standardisation and localisation inherent in discourses of restoration; of harmony and autonomy. Such a focus may also highlight the capacity of different discourses to materialise and be sustained, or simply dissolve (drawing on Murdoch 2004). Within this research, the principal focus is upon discourses of environmental restoration, yet,

as a reflection of the inconclusive qualities of such discourses, and of the dominance of some discourses to the detriment of others, discourses of regeneration and rehabilitation are also investigated.

I should qualify here that while this is a thesis on environmental restoration, geography and geographical debates provide an underlying filter and framework for discussion. Murdoch (2004) notes the importance of contextualising discourse; of understanding its material, temporal and spatial dimensions. Drawing upon this materialisation and spatialisation, the research will critically examine the uptake, interpretation and mobilisation of environmental restoration discourses within the context of three projects of landscape change – the Eden Project (Cornwall, UK), the National Forest Company (Derbyshire, UK), and the Walden Woods Project (Lincoln, MA). 'Flagship' projects were selected for their reach – that is, their power and dominance – in environmental arenas, with restoration one of several themes present within the operations of the projects. Each project presents a different combination and prioritisation of concerns surrounding landscape, place, site, scale, particularity and generalisability.

The research explores the complex ways in which restoration discourses are embedded in, and interact with, their geographic context, and thus attempts to counter the claim that "discourses can often seem divorced from geography" (Murdoch 2004:51). Through making transparent the relationship between restoration discourses and particular contexts, more general propositions can be made as to the focus, rationales and motivations of such discourses. Attention is thus awarded to the selective appropriation of contextual features, and to the salience of context in discourse and practices. Such a focus may indeed prove beneficial to the field of environmental restoration, in light of a statement from Clewell and Aronson (2007:5): "The choppy seas are subsiding, but are still not calm as we continue to debate what we mean when we say that we restore ecosystems".

* * *

I should make the distinction here that this research is concerned with *environmental restoration*, and not *restoration ecology*; the former is the practice of restoration, with the latter the science on which the practice is based. This distinction is qualified further, between environmental- and ecological restoration. I have opted to take

forward *environmental* restoration, with such a prefix encompassing not just physical, but socio-cultural-political constituents. The focus of *ecological* restoration is much narrower, concentrating on the significance of ecology and natural systems in restoration practices. Several elements are also discounted from further investigation within this research. This is not a technical thesis about the science of environmental restoration – scientific concerns, including biology, geology and ecology fields of restoration are not a primary focus. Rather than investigating the implications of restoring a particular species to a site, or the functioning of restored spaces to the detail of vegetation, species, and soil and water quality, the research is interested in the construction, and subsequent mobilisation, of discourses of restoration. However, claims to, and limits of, expertise may be relevant, for they define existing boundaries within environmental restoration debates, and as a consequence, highlight areas where new research may prove constructive and complementary.

1.3.2 Research Questions and Structure

The thesis focuses upon conceptual (uptake and interpretation) and practical (mobilisation) issues raised by discourses of environmental restoration as an approach to environmental management and protection, and wider sustainability concerns. The research addresses itself to the following five questions, analysed within the context of the case studies:

I. *What types of nature-society interaction are bound up with the development of environmental restoration schemes?*

The question examines how discourses of restoration allow for refinement and clarification of society's role in environmental discourses, bridging the gap between society and nature. Social nature theories are appropriate for understanding the contested practices of environmental restoration, for restoration projects are spaces of socio-nature interaction and promotion. It is extremely difficult to disentangle the social and the natural, and discourses of environmental restoration offer an insight into how relationships between the two are given (discursive) solidity.

II. *In what contexts are particular discourses of environmental restoration employed in practice, and with what justifications and consequences?*

Through exploring how discourses of environmental restoration are defined, and why, and the extent to which differing rationales exist, it is anticipated that the research will determine whether definitions (and their subsequent mobilisation within the landscape) are context-dependent. The research examines the cultural construction of restoration discourses, exploring restoration 'perspectives' and their material consequences. The research will also address the issue of whether differences in rationalisations of restoration matter, or are indeed important. In addition, the intended use of different discourses, and whether the discourses are employed interchangeably, are explored.

III. *What types of environmental meanings are produced by these projects (and through what processes)?*

This question explores the production of environmental meanings, whether created intentionally or unintentionally, by project actors within the case study projects. Rationalisations of wider environmental meanings – such as degradation, naturalness, and wildness and wilderness – are important, for they provide a foundation for the development and emergence (and perhaps contestation) of dominant restoration discourses. Wider environmental meanings can inform and guide restorative manifestations of the landscape, further drawing upon social nature relationships.

IV. *To what extent can environmental projects influence wider restoration policy discourses?*

Question IV addresses the status of the case study projects at a regional, national and international scale, and through this, their power to inform wider practices. Particular attention is awarded to the scalar politics and interactions involved. The research examines whether the restoration discourses operationalised by the case studies are drawn upon by other organisations, and policy-makers, thus extending the influence of the projects in wider restoration policy discourses. The extent to which external practices have served as a catalyst for operations within the case studies is also investigated. The idea of 'dominant' discourses is particularly relevant here, for they reveal those restoration rationales which wield the most authority in – and subsequently steer – environmental debates.

V. *What is the extent of, and what barriers impede, collaborations and partnership working with other environmental organisations?*

This question explores the multitude and extent of collaborations promoting restoration discourses, for this is a key medium through which to identify those discourses which appear to dominate (and why), and to examine the dissemination and uptake of these discourses. 'Power' is defined both in terms of reach, and the translation of discourses. Research will also address the influence of the case studies on other environmental projects, and the support given. Additional approaches to knowledge transfer are also highlighted – both formal and informal – as further processes affecting which restoration discourses tend to prevail.

1.4 Outline of the Thesis

This thesis is structured around eight chapters, with a brief summary of the remaining seven chapters provided below. Chapter Two reviews existing restoration literatures, tackling the question of 'nature' to provide a context for discussion of discourses of environmental restoration, and by extension explores the significance of a social nature theory for restoration discourses. It also examines the value of nature and the environmental ethics inherent in rationales and practices of environmental restoration, alongside subsequent management and practice discourses. The research design and methodology are addressed in Chapter Three, revisiting the research topic, and highlighting links with existing literature. Attention is given to the case study selection, and the time period chosen, alongside the epistemological base informing the research, and methods of data collection and analysis. Issues of research ethics and reflexivity are also considered. Chapter Four is intended simply as an introduction to the case studies, tracing their evolution, development and current actions to provide a foundation for the analysis of dominant restoration discourses.

Chapters Five to Seven present the analysis and interpretation of empirical data gathered during the research process. Structured around the research questions, Chapter Five explores the nature-society interactions bound up in (restored nature at) the case studies, while Chapter Six analyses the processes of rationalisation behind discourses of environmental restoration, and the physical, material practices which emerge from such discourses. Chapter Seven presents the implications for wider

restoration discourses and practices, and addresses the degree of collaboration and networking between projects and organisations involved in restoration. Chapter Eight provides a synthesis of the research findings, answering the research questions set out in this Introduction. The implications of the research findings are identified, and suggestions are offered as to how the findings contribute to the overall state of knowledge relating to environmental restoration. Attention is also awarded to the wider research agendas emerging from this research.

CHAPTER TWO

Restoration, Nature and Artifice: A Literature Review

2.1 Introduction

In reproducing a prairie, then, the ecological restorationists do but take a leaf out of nature's book. Nature itself copies; it is an uncopied *prairie, if such could exist, that would be unnatural.*

(Turner 1988:52)

The 'theory' and practice of environmental restoration has at its foundation, and is very much guided by, constructs of 'nature' and 'naturalness'. However, the epistemology and ontology of 'nature' is much contested, with particular understandings employed to guide and advance certain arguments[1]. Equally, contemporary society is plagued by debates concerning the 'end of nature' (McKibben 1989) or the 'death of nature' (Merchant 1980). Various strategies (amongst them, restoration, conservation and preservation) are promoted to rescue and repair nature, with the question of 'nature' remaining a prominent concern within geography. As Castree (2004:194) argues: "Far from having put the idea of nature to rest, critical geographers still have important things to discover and say about it".

The focus of this literature review is thus upon the agency accorded to nature and debates of naturalness within discourses of environmental restoration,

[1] See especially Harrison and Burgess' (1994) analysis of the use of particular representations of nature within the contested development of Rainham Marshes SSSI, London.

complemented by a discussion of nature within a societal framework of understanding and action – that of the social construction of nature. In turn, this feeds into debates of philosophies of value – the value(s) attached to nature and to 'restored nature' – and the review concludes with analysis of the management and practice of environmental restoration, exploring existing influences, and the interpretation and application of discourses. Much of what has been researched and written about environmental restoration deals only with technical aspects of the discipline, to the detriment of exploring social constructions of, and thus the 'nature' of, restored nature.

2.2 The Contested Issue of 'Naturalness'

2.2.1 The Language and Semantics of Nature

The naturalness of nature is, in one sense, inherently self-evident.

(Adams 2003:82)

Discourses of environmental restoration, put simply, are concerned with restoring nature to a site, and as such, provoke questions such as *what is nature?* and *why do we want nature?* (Swart *et al* 2001). As Habgood (2002:4) observes, nature is 'the entire physical world'; with Castree (2005) expanding on this to distinguish nature as the *physical environment*, the *essence of something*, and the *inherent force ordering both humans and non-humans*. Despite this, a major argument in naturalness debates is grounded in McKibben's *The End of Nature* (1989 [2003]), and serves to introduce this discussion. For McKibben (2003), such an 'end' is explained through the unintentional manipulation of the atmosphere by humanity, altering nature indelibly:

> An idea, a relationship can go extinct, just like an animal or a plant. The idea in this case is 'nature', the separate and wild province, the world apart from man to which he is adapted, under whose rules he was born and died. In the past, we spoiled and polluted parts of that nature, inflicted environmental 'damage'. But that was like stabbing a man with a toothpick: though it hurt, annoyed, degraded, it did not touch vital organs, block the path of the lymph or the blood. We never thought that we had wrecked nature. Deep down, we never really thought we could: it was too big and too old; its forces – the wind, the rain, the sun – were too strong, too elemental. [...] We have produced the carbon dioxide – we are ending nature.
>
> (McKibben 2003:48)

A similar sentiment is reflected in Merchant (1980 [1990]) who suggests a 'death of nature' – its subjugation, control and harnessing – in light of the Scientific Revolution.

For as Merchant (1990:1) argues, "The world we have lost was organic". Likewise, McKibben (2003:xiii) acknowledges, "human beings had become so large that they altered everything around us. That we had ended nature as an independent force, that our appetites and habits and desires could now be read in every cubic meter of air, in every increment on the thermometer". There is, however, an inherent irony here too, for anthropologically-induced environmental change stems as much from deliberate attempts to restore, conserve or protect the environment as from a disregard for the environment (Meyer 2006).

Throughout this thesis, the above nature claims are contested, for my understanding of nature, in line with Soper (1996:24), is not "glibly conceptualised as that which is entirely free of human 'contamination', [as] in the absence of anything much on the planet which might be said to be strictly 'natural' in this sense of the term, the injunction to 'preserve' [... or indeed, restore] begins to look vacuous and self-defeating". As such, it is Soper's (1995) discourse of 'lay' or 'surface' nature which is taken forward, but also drawing on metaphysical and realist concepts. Naturalness, within the context of this research, is not awarded the narrow definition of proven antiquity or an absence of disturbance (Ratcliffe 1977 in Warren 1993) nor does it conform to Peterken's (1981 in Warren 1993) typology of original, past, present, future, and potential naturalness. Instead, it is promoted as a product of culture, and is aligned with Cronon (1996a) such that:

> This is not to say that the human world is somehow unreal or a mere figment of our imaginations – far from it. But the way we describe and understand that world is so entangled with our own values and assumptions that the two can never be fully separated. What we mean when we use the word 'nature' says as much about ourselves as about the things we label with that word.
> (Cronon 1996a:25)

It is the idea of an 'external' nature which has led to concerns of an end, or death, of nature. Any use of 'nature' or 'naturalness' within this thesis is through a socio-cultural lens (see Soper 1995), with a focus on incorporation – re-examining societal relationships within the natural world through discourses of environmental restoration. The intention is not to disembody or abstract the nature(s) of restoration, but instead to contribute to ongoing debates of restoration theory and its practical relevance.

The purpose of this section is to review societal assumptions about nature, and how society in turn relates to it; seeking to challenge constructions of nature. What it

does not attempt to do is define nature outright, for, paralleling Williams (1980:67), "what matters in them is not the proper meaning but the history and complexity of meanings". As Graves (1960 [2002]:293) also ponders, "does it especially matter that [...] the knowledge may turn out to be illusory? Illusions are worth having". My interest rests in *knowledges of* nature, and less in the *realities described within nature-knowledges*; with what Smith (1990) terms 'poetic' nature, rather than 'scientific' nature. To know what nature is requires examination of ideas and representations of it[2]. Ideas of nature reflect the societal contexts in which they arise, and are not reducible to the realities of nature (Castree 2005). As Castree (2005:34, 36) points out, "Geographers produce *understandings of nature*: knowledge, not the reality itself. [...] The main meanings of the word 'nature' all divert our attention away from the fact that it is a word not reality itself".

Although McKibben (1989) makes the argument that nature is dead, and that society is responsible for its demise, I agree with Hall (2005) who instead argues that nature is in need of repair. This parallels Packard (1990) who suggests that society can 'help nature maintain its health'. An interdependent relationship is promoted, such that "Nature doesn't end as we become a part of it, any more than our parents cease to be our parents once they become older and we have to take care of them. In some ways, nature was our parents, and now we're its parent. Now it depends on us" (Packard 1990:72). The above claims are illustrative of how the relationship between nature and society can be constructed in different ways.

The concept of nature is socially and culturally (re)defined, producing not a singular (and abstracted and personified) 'nature', as Williams (1980) puts forward, but multiple, contested and contradictory 'natures' (see especially Macnaghten and Urry 1998; Smith 1990). For Macnaghten and Urry (1998:2), embedded social practices "produce, reproduce and transform different natures and different values". Restoration practitioners continually (re)define how nature is interpreted, for "every time an ecosystem is restored, a particular view of nature is expressed" (Higgs 2005:162). As such, none of the 'natures' discussed herein are 'natural', for they are all cultural constructions, reflective of societal values and reasoning (Cronon 1996a; Soper 1995). Ideas of nature do not exist outside of, but are instead reflective of, a

[2] Demeritt (2002, 2001, 1998) more extensively attempts to clarify understanding of, and claims about, the social construction of nature.

cultural context. The complication with this is that, as Cronon (1996a:35) suggests, "nature as essence, nature as naïve reality, wants us to see nature as if it *had* no cultural context, as if it were everywhere and always the same". As Irwin (2001:24) succinctly notes, "We do not simply observe raw nature in a cultural vacuum".

Societal interactions with nature – particularly intervention and manipulation – shape understandings of nature, for as Williams (1980:67) argues, "the idea of nature contains, though often unnoticed, an extraordinary amount of human history". It is, though, the intensity of interactions and the extent of intervention which change the *meaning* of nature. As reinforced by McKibben (2003:60-61), "We have deprived nature of its independence, and that is fatal to its meaning. Nature's independence *is* its meaning; without it, there is nothing but us"; and as a consequence, "We have killed off nature – that world entirely independent of us which was here before we arrived and which encircled and supported our human society. There's still something out there, though; in the place of the old nature rears up a new 'nature' of our own devising" (McKibben 2003:104).

There is some contestation surrounding the status awarded to 'naturalness', its values and goals, and thus its implications for environmental restoration – that is, whether it is indeed a beneficial concept, or a 'sensible objective' (Siipi 2004). Naturalness, though, is not a finite state, and one way of re-working nature is to recognise that degrees of naturalness exist:

> Naturalness, the degree to which a thing is natural, is represented by a continuous gradient between extremes of entirely natural and entirely artificial [or unnatural]. The extremes are only abstractions. Entirely natural areas no longer exist, but some areas are clearly more natural than others (eg. an unplowed prairie versus cattle pasture versus shopping mall).
>
> (Angermeier 2000 in Siipi 2004:469)

Others, clearly, see naturalness (or indeed, socio-naturalness) as an evaluative concept for restoration. As Siipi (2004:458) argues, "naturalness may be seen as a foundation for many conservation imperatives such as diversity, integrity, evolution, and ecosystem function". For Warren (1993:16), naturalness "is a major objective of management, whether it be for a particular kind of naturalness, managed by active intervention, or by *laissez-faire*". It is both these conceptualisations of naturalness which are taken forward within this research, for they feature within, and inform,

different discourses of environmental restoration. This does however raise the question as to *what form of naturalness is relevant or appropriate?*

The answer is complicated by the fact that 'all natures are not equal': "some constructions of nature are or become hegemonic whilst others are resistant to such hegemony" (Eden 2002:320). One such example is provided by Davis (1999) in his discussion 'The Case For Letting Malibu Burn'. The consequences of fire suppression of chaparral ecology and an absence of fire-risk zoning within the affluent and ever-increasing Southern California mountain suburbs is contrasted with the double standard of fire disaster within poorer Downtown districts, and provides insight into differing constructs of 'natural'. As Davis (1999:132) notes, "The majority have never accepted the natural role or inevitability of the chaparral fire cycle. (Conversely, there has been a persistent tendency to naturalize the strictly human causality of tenement fire.)" This claim reveals the ambiguity of 'nature', and why "numerous different morally relevant and irrelevant interpretations of it can be found" (Siipi 2004:458).

This is paralleled by Gobster (2001), who uses 'visions of nature' to explore conflict and compatibility in urban park restoration, in this instance, an area of parkland along Chicago's waterfront. Four different visions emerge through dialogue with stakeholders, each advancing a different set of characteristics related to perceived landscape structure and function, alongside human values and uses: (i) nature as designed landscape, (ii) nature as habitat, (iii) nature as recreation, and (iv) nature as pre-European settlement landscape (Gobster 2001). Siipi (2004) also proposes four forms of naturalness: (i) naturalness as that which is part of nature, (ii) naturalness as a contrast to artifactuality, (iii) naturalness as an historical independence from human actions, and (iv) naturalness as a possession of certain properties. As such, many different 'natures' can exist within the same context at any one time, with complications for classifying (and demarcating) 'natural' and 'unnatural' within discourses of environmental restoration. As McKibben (2003:60) also notes, "Nature, while often fragile in reality, is durable in our imaginations" – if not wholly stable. This is echoed in Cronon (1996a) who puts forward numerous understandings of nature thus: as naïve reality; as moral imperative; as Eden; as artifice, as self-conscious cultural construction; as virtual reality; as commodity; as demonic other, as avenging angel, as the return of the repressed; as contested terrain – and it is a recognition of this multiplicity that informs this thesis.

To play the devil's advocate, the durability of the concept of nature rests with society: "In a sense, and to play on Latour's now famous declaration, 'we will never be amodern' so long as a significant section of society thinks and acts as *if* there are things in the world (human and nonhuman) that are categorically natural" (Castree 2004:192). Leading from this, the question thus arises, *does nature exist?* As Castree (2005:35) points out, "there is no such thing as nature! [...] The things we call nature undoubtedly exist. But it is entirely a matter of convention that we group them together under the one term. Even if the term isn't explicitly invoked to describe them, it is clear that it's nonetheless there in the background". Castree (2005:36) also notes that nature is a 'chaotic concept': "The term's complexity derives precisely from the jumble of meanings and references we've come to associate with it".

This is not to say that 'nature' does not exist, but rather to draw attention to the fact that there exist societal (and cultural) constructions alongside a material reality of nature (see Irwin 2001; also Section 2.2.2). A favourite Thoreau (1849 [2001]:228) quote seems to sum this up succinctly[3]: "When I visit again some haunt of my youth, I am glad to find that nature wears so well. The landscape is indeed something real, and solid, and sincere, and I have not put my foot through it yet". What this research attempts to take forward is, to quote Castree (2005:156), a 'both/and' approach where the environment is "neither wholly autonomous nor wholly a product of social processes". The challenge lies in valuing (and accepting the materiality of) ideas about nature as much as the realities they claim to describe. Nature is both "that which we are not *and* that which we are within" (Soper 1995:21).

If the physical, material reality of nature is not disputed, difficulties still lie in capturing it in words – a difficulty which Cronon (1996a:52) argues, "is in fact one of the most compelling proofs of its autonomy". In exploring contested cultural, political and socio-economic meanings and values invested in forests in British Columbia, Braun (2002:ix) notes of a material reality of nature: "British Columbia may be among the most difficult places to examine the matter of nature, if only because here the category seems so self-evident. With the possible exception of Alaska, no other region in North America is so predicated on the idea of nature's *externality*". As Braun (2002:15) later observes, however, "Even when our relation to nature seems

[3] With additional nature writers cited throughout this literature review, for their filtering of environmental issues through a social nature lens.

most immediate, it is profoundly shaped by the narratives, knowledges and technologies that enable experience", again reinforcing a nature-society interaction.

To secure 'naturalness' as a standard in environmental conservation requires if not a shift in understanding of conservation strategies (including restoration), then an acknowledgement that naturalness is both a historical and feature-dependent concept (as Siipi 2004). Although Snyder (1998) is somewhat extreme in his criticism, the following statement nevertheless contributes a valid point to the positionality of nature within environmental debates, which this thesis acknowledges and draws upon:

> It's a real pity that the humanities and social sciences are finding it so difficult to handle the rise of 'nature' as an intellectually serious territory. For all the talk of 'the other' in everybody's theory these days, when confronted with a genuine Other, the non-human realm, the response of the come-lately anti-Nature intellectuals is to circle the wagons and declare that Nature is really part of Culture.
>
> (Snyder 1998)

Drawing a line under this latter point, Soper (1996:33) acknowledges the power nature retains over society: "nature in the realist sense will exercise its determining impact on whatever we do or try to do, and will to some extent constrain what we can attempt. But it will only set rather elastic limits on this, and it is we who have to decide what it is ethical to do or try to do within those limits".

Whilst complex definitional debates surrounding 'nature' and 'naturalness' (alongside *knowledge of* nature) continue to rage in numerous disciplines besides geography – in anthropology, the social sciences, the humanities, the physical sciences, and engineering and material science – there is a parallel rejection of sorts of the term *nature* amongst academics and practitioners alike (replaced with descriptors such as *environment* or *landscape*). In large part, this is because 'nature' is seen to instil "quasi-romantic or mystical connotations of a 'higher power'" (Castree 2005:38). Despite its complications, I shall retain the use of 'nature' within this research for the reasons discussed throughout this section, yet collateral concepts[4] such as 'environment' and 'landscape' are also employed as a 'way of seeing', for they (i) spatially contextualise arguments, but (ii) more importantly, encompass socio-cultural and political influences.

[4] Castree (2005) defines collateral concepts as those which overlap other concepts, and citing Olwig (1996 in Castree 2005:40) remarks of *nature* within geography: 'a ghost that is rarely visible under its own name'.

2.2.2 Social Nature: Cultural Constructs and the Production of Nature

The claim made by FitzSimmons (1989:106) twenty years ago, that "Most work by geographers in the radical tradition has continued a peculiar silence on the question of social Nature", is no longer unassailable. Indeed, it is this issue of 'social nature' which I wish to further explore here, to lay down an epistemological framework to this research (see also Section 3.2.2). As touched upon in the previous section, debates on the social construction of nature problematise the issue of nature and naturalness, and subsequently, restored nature. Nevertheless, when looking at how discourses of nature and restored nature emerge in the field, the social construction perspective appears to have the most to offer. For this reason, discussion in this section focuses upon the *social (and cultural) constructions of ideas about nature*, to explore how restoration discourses are understood and interpreted; providing a framework for analysis throughout this thesis. One particular social construction of nature is also pursued – that of the *production and commodification of 'nature' through restoration practices*, grounded in a Marxist political economy approach – to allow for examination of the 'product' of restoration. By placing social constructionism as the major theoretical framework, with insight also drawn from a Marxist political economy approach, this research differs from much restoration research, typically addressing just one approach. Social nature conceptions do not, and cannot, assume that the world is entirely a deliberate social construction (for further debate, see Burningham and Cooper 1999), but they do lead to other ethical and political questions about the social consequences attendant upon restoring 'nature'. In unpacking the rationalisations and justifications behind dominant (and latent) discourses of restoration, I see most merit in a social construction/social nature approach, but there are other theoretical frameworks which offer particular insights on the ethics and materiality of practice, hence their inclusion in the discussions which follow. Different perspectives are useful for qualifying particular issues.

Social Constructions of Nature

The issue of nature-as-a-social-construction has become commonplace, its phrase banal, for as Smith (1998:273) observes, "the claim that even nature is socially constructed is anything but shocking", for "nature is nothing if it is not social" (Smith

1990:30). If indeed nature as a social construct "has lost much of its initial intellectual potency" (Bartram and Shobrook 2000:370), it nevertheless remains fundamental in destabilising dualist debates. As evidence of this latter point, Castree (2001a:13) notes, "many critical geographers insist that it's impossible to physically disentangle the social and the natural. In reality, all there is – to borrow Erik Swyngedouw's (1999:443) apt neologism – is 'socionature'". The social construction of nature focuses on the multiple and competing meanings attached to nature, and the lack of separation between material and social forms of nature. Turner (1985), seeking a new approach to ecological thinking which bridges the gap between nature and culture, finds it in rationales guiding restoration practices (see also Eden *et al* (2000) and nature-cultures; and Naveh (1998, 1994) and a 'post-industrial symbiosis between man and nature').

Nature is socially produced, insofar as "what we see as 'natural' internalizes not only ecological relations but social relations too" (Braun 2002:11). The two are co-constitutive, 'constructing one another' (Wilson 1992), bound up in a process of mutual determination, such that as Haraway (1992:296) writes, "Nature cannot pre-exist its construction". As Emerson (1836 [2003]:49) also observes, "Every natural fact is a symbol of some spiritual fact".

Socio-cultural constructions of nature force society to question not only how nature is 'remade', but also for whose benefit, and with what consequences (Braun 2002). Social practices and cultural traditions (or, rephrased, *experiences*) inform and influence society's understanding of and connection with nature; definitions of nature and restoration are geographically and culturally embedded. 'Nature' is strongly (and unavoidably) political, and is inseparable from, rather than reducible to, questions of power. The cultural, socio-economic, and political context within which restoration occurs is fundamental in determining its eventual form; and is, as Light and Higgs (1996:230) argue, "crucial in determining its political role in the broader culture".

The idea of embeddedness is highlighted by Marsden *et al* (2003:242), noting "a need to 'embed' nature in socio-political and spatial contexts", for "social and local political conditions and practices are central to the ways in which local natures are constructed and used" (Marsden *et al* 2003:252; also Irwin 2001). It is, as Braun (2002:ix) succinctly notes, nature 'infused with social intent'. In support of this, Whatmore and Boucher (1993:168) suggest "natural relations are always embedded

and thereby interact with, and condition, [...] social relations to varying extents and in different ways in specific times and places". The inter-dependency between the two, a mainstay in theoretical literatures on social nature, is further evident in nature writing, with Thoreau (1862 [2001]:242) writing, "A town is saved, not more by the righteous men in it than by the woods and swamps that surround it".

It is for this reason that nature is also viewed as artifactual; as "objects made, materially and semiotically, by multiple actors (not all of them human), and through many different historical and spatial practices (ranging from landscape painting to the science of ecology)" (Braun 2002:3; see also Oelschlaeger 2002), reinforcing ideas of 'environmental imaginaries'. Moreover, there is a dynamism to such environmental constructions, with Emerson (1836 [2003]:80) noting, "Nature is not fixed but fluid. Spirit alters, moulds, makes it". The cultural significance of the environment should not be neglected, with attention awarded to beliefs, values and perceptions.

The complexity of this 'culture of nature' (as Wilson 1992) is noted by Harvey (1996:172), who writes, "Consider, for a moment, the multiple languages – scientific, poetic, mythic, moral and ethical, economistic and instrumental, emotive and effective – in which ecological issues and value are typically articulated". Harrison and Burgess (1994:308) reinforce this point, in acknowledgment that "if the claims made by nature conservationists are to gain purchase on public opinion, the rhetoric they employ needs to acknowledge the social and cultural contingencies associated with particular cases and particular audiences". Nature can only be 'known' through cultural signifiers, "such that nature cannot be understood by people 'in-and-of-itself'. [... One] cannot step outside culture to comprehend nature 'as it really is'" (Castree and MacMillan 2001:209). The idea of nature as a part of culture (and the implications for idea(l)s of nature) is exemplified by Wilson (1992:12; also Smith 1996), who argues, "When our physical surroundings are sold to us as 'natural' [...] we should pay close attention. Our experience of the natural world [...] is always mediated. It is always shaped by rhetorical constructs like photography, industry, advertising and aesthetics, as well as by institutions like religion, tourism, and education". Emerging from this is a 'fetishism of nature' (Smith 1996), of *designer* nature, grounded in the emergence of a popular environmentalism.

Part of the social construction of knowledges of nature rests in its capacity to *speak for* nature, a theme prominent within nature writing:

> I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil, – to regard man as an inhabitant, or a part and parcel of Nature, rather than a member of society.
> (Thoreau 1862 [2001]:225)

Yet there then follows the implication as to 'the words in which nature speaks' (Braun 2002). As Braun (2002:260) observes, "Precisely because nature is something that must be *represented* (it cannot simply speak for itself), the *act* of representation becomes that much more important, for it necessarily constructs that which it speaks for". Social constructions of nature are employed to defend particular environmental and ecological arguments, often drawing upon themes such as culture and politics; morality, identity, emotionality, spirituality, and romanticism and naturalism.

There is an inherent paradox bound up in the social construction of ideas of nature, for nature is simultaneously regarded as that guided and informed by social and cultural norms, as well as something existing outside of societal influence. This in turn will influence, impact upon, and complicate 'nature' as framed within the practices of environmental restoration. Back-to-nature romantic and ecocentric ideals only serve to further reinforce the nature-society dualism, and contradict their intent.

The social construction of ideas of 'wild' and 'wilderness' provides an interesting framing for discussions of nature and restoration. Such constructions perhaps generate the most heat in (restored) nature debates, exemplifying the contestation surrounding both a nature-society duality *and* interaction (see Light 1995)[5]. Typically, wilderness is conceived as the antithesis of society and civilisation (excluding prior human inhabitants and native peoples). Society is placed entirely outside the natural, and ideas of wilderness attempt to detach and deny the history attached to the land. Wilderness is anthropogenic (Oeschlaeger 2002); very much a cultural construction. It is for this reason that the idea of wilderness is rife with irony: "Far from being the one place on earth that stands apart from humanity, it is quite profoundly a human creation – indeed the creation of very particular human cultures at very particular moments in human history [...] Wilderness hides its unnaturalness behind a mask that is all the more beguiling because it seems so natural" (Cronon 1996b:69). Definitions of wilderness are still very much grounded in the 1964 US Wilderness Act:

[5] In this discussion, I wish to make a distinction between 'wild' and 'wilderness', with the former *a quality of nature*, the latter *a form of nature*.

> An area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. [...] retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.
> (Meyer 2006:8)

Despite an acknowledgement of the presence and function of society in wilderness areas, the above definition places society as users and consumers of nature, rather than as members of the community, countering the point reinforced throughout this thesis (and that of Higgs 2003; Nash 2001; Cronon 1996b; Callicott 1991; Snyder 1990).

The meaning attached to 'wilderness' has shifted over time, crossing back and forth between the classical and the romantic (Nash 2001; Light 1995), the frontier and the sublime (Cronon 1996b); from a hideous, uncultivated, savage, desolate and bewildering place to be conquered (the 'enemy'), to one of sublimity, a sacred place to revere (a 'sanctuary'). Wilderness is also conceived as a state of mind (Nash 2001), as belief or metaphor rather than actuality. The wilderness, notes Thoreau (1849) is:

> Near, as well as dear, to every man. Even the oldest villages are indebted to the border of wild wood which surrounds them, more than to the gardens of men. There is something indescribably inspiriting and beautiful in the aspect of the forest skirting and occasionally jutting into the midst of new towns, which, like the sand-heaps of fresh fox burrows, have sprung up in their midst. The very uprightness of the pines and maples asserts the ancient rectitude and vigor of nature. Our lives need the relief of such a background, where the pine flourishes and the jay still screams.
> (Thoreau 1849 [2001]:108)

'Wildness' is a quality of nature that is often sought in environmental restoration and wider conservation endeavours – of natural processes regaining control and subduing human influences. The connotations associated with the concept are powerful, leading Thoreau (1862 [2001]:239) to proclaim that: "in Wildness is the preservation of the world. Every tree sends its fibres forth in search of the Wild. The cities import it at any price. Men plough and sail for it. From the forest and wilderness come the tonics and barks which brace mankind". A 'tonic of wildness' is advocated:

> To wade sometimes in marshes where the bittern and the meadow-hen lurk, and hear the booming of the snipe; to smell the whispering sedge where only some wilder and more solitary fowl builds her nest, and the mink crawls with its belly close to the ground. At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be infinitely wild, unsurveyed and unfathomed by us

> because unfathomable. We can never have enough of Nature. We must be refreshed by the sight of inexhaustible vigor, vast and Titanic features [...] We need to witness our own limits transgressed, and some life pasturing freely where we never wander.
>
> (Thoreau 1854 [2004]:317-318)

A wildness is sought "whose glance no civilisation can endure", while at the same time, there is acknowledgement that "Life consists with wildness. The most alive is the wildest. Not yet subdued to man, its presence refreshes him [...] In short, all good things are wild and free" (Thoreau 1862 [2001]:240, 246) – both reinforcing and quashing a nature-society dualism. It is important to acknowledge here though that this is not necessarily the type of wildness sought by restoration.

The questions arise, then: *what type (or degree) of wildness is sought?* and perhaps more importantly, *is it in fact possible for there to be places that are wild (in the sense of unconstrained)?* While agreeing with the above possibility may open up and undermine my own argument thus far, for it privileges some forms of nature over others, the thoughts of Snyder (1990:5) remain pertinent: "The world is nature, and in the long run, inevitably wild, because the wild, as the process and essence of nature, is also an ordering of impermanence". Consideration should be awarded not to things labelled as 'wild' and 'wilderness', but rather to what is implied by the label itself (Cronon 1996b).

The conservation of wildness and wilderness, however, is also a self-defeating exercise, for "to cherish we must see and fondle, and when enough have seen and fondled, there is no wilderness left to cherish" (Leopold (1949 [1968]:101). The paradox of wilderness as *external nature created by society* is highlighted by Abbey (1975 [2004]:63), noting, "'The wilderness once offered men a plausible way of life,' the doctor said. 'Now it functions as a psychiatric refuge. Soon there will be no wilderness.' [...] 'Soon there will be no place to go. Then the madness becomes universal.' Another thought. 'And the universe goes mad'". It is, as Udall (1963) concedes, the 'quiet crisis'; or as Meyer (2006), 'the end of the wild'. Environmental restoration may make strides towards reintegrating wildness, promoting a blend of wildness and civilisation, of nature and society (see particularly Taylor (2005) and restoration of the natural processes of wild nature), but it will always be mediated by societal demands and expectations.

I wish here to draw upon personal experience as illustration of the social construction of ideas of 'nature' and 'wild'. In July 2002 I was part of an expedition team climbing Mount Kilimanjaro in Tanzania. First impressions of the landscape were of vast wildness and wilderness – and, dare I say it, naturalness. After all, *how much can a landscape system which at its peak registers a height of 5,895m (19,340ft) be severely affected by humanity?* Yet, delving into the management of expeditions on the mountain, the 'natural' and 'wild' elements diminish slightly.

The ascent and descent of the mountain are via designated routes, with very little room for negotiation. It is almost a case of 'look but do not touch'. The only evidence of a human presence (aside from the routes and subsequent footpath erosion) is the erection of small cairns at various points along the route, the small number of huts occasionally used for shelter, and the sign at Uhuru (the summit) stating that this is the highest point in Africa. In terms of indirect human impacts on the landscape of Kilimanjaro, the most significant is that relating to global warming and the subsequent disappearance of glaciers and ice sheets near Uhuru (5,895m) and Gillman's Peak (5,685m). The past century has witnessed a drop in ice cap volume of more than 80 per cent, and a recent study by Thompson *et al* (2002) predicted that the ice would disappear between 2015 and 2020. This may well prove to be accurate: as of March 2005, the peak is almost bare for the first time in 11,000 years (Thompson *et al* 2002).

The 'wild' component of the landscape is also brought into question when one realises that the opportunity to 'rough it' and commune with nature – in line with most hiking endeavours – is not an option. All expeditions are required to have a team of guides and porters accompany them, and it is the latter who will carry the backpacks, tents, and even tables and stools (counter Waterman and Waterman 2000). Moreover, a human presence on Kilimanjaro is not a new phenomenon. Whilst the mountain as an adventure holiday destination has only evolved within the last 25 to 30 years (although the first ascent occurred in 1889), villages and towns are situated around the base of the mountain and on its lower slopes, with local people and tribes dependent on (and thus altering) its ecosystem for many aspects of their lives. Situated within Kilimanjaro National Park, the mountain is carefully managed, with a fee to enter the Park, and a limit placed on the number of people allowed to climb the mountain each year. As a consequence, experience of 'the wild' is always mediated; whether by social relations, technology, or both.

So, *is Kilimanjaro a natural, wild, landscape unit?* Despite all the factors raised above, it is hard to dispute the wildness of the landscape when stood at Gillman's Peak watching the sun rise behind Mawenzi. Applied to practices of environmental restoration, and conceptions of nature therein, the concern is not necessarily that restoration is faking nature, but rather the degree of social control that appears to accompany it. There is a degree of social enclosure of people that occurs, alongside the assigning of responsibility for the functioning of nature.

Viewing ideas of nature as a social construction is not without criticism, however, for as Bartram and Shobrook (2000:371) argue, "simulation – or the 'take-over' of reality by cultural sign systems – has left Western society devoid of reference points. Rather than do away with reality, however, scientific and technologically induced simulations have been concerned with *realizing* or perfecting the world. Social realities are therefore made to appear more real than real". In a similar vein, ideas of nature-as-social-construction are also accused of social reductionism, or 'environmental quietism', thus denying the existence of environmental problems.

The Production of Restored Nature

Nature is increasingly being reconstituted materially, even down to the atomic level [...] Here, then, nature is seen as being physically 'produced' to order in the pursuit of money and profits.

(Castree and MacMillan 2001:209)

Framed as a particular social construction of nature, the production (and commodification) of restored nature provides insight into the materiality and physicality of restoration practices. "The idea of the production of nature", observes Smith (1990:32), "is indeed paradoxical, to the point of sounding absurd, if judged by the superficial appearance of nature even in capitalist society. Nature is generally seen as precisely that which cannot be produced; it is the antithesis of human productive activity". However, the production of nature does shed much light on the practices of environmental restoration, exemplifying a strong nature-society interaction[6]. While one may accept that the relationship between nature and society is inseparable, it is not always an equal one. As Castree (2002:138) argues, "social-nature relations are

[6] Much research on Marxist political economy and the production of nature has focused upon, and been applied to, agri-foods and biotechnology fields (see, for example, Castree and MacMillan 2001), but I consider it of particular importance to environmental restoration debates, as set out below.

paradoxical in capitalist societies, for, though thoroughly dependent on altered and unaltered natural entities, capital is also 'blind' to them until problems associated with their appropriation make themselves felt as costs (or monetisable opportunities) within the economic system". 'Social nature' (different from broader social constructions of nature) approaches nature through the lens of capitalism, viewing it as a material object that can be appropriated in capitalist terms. Capital-nature relations are manifold; capitalism regards nature as both a free good (external to society; to be saved), and as part of an interdependent relationship (internalised in society; to be managed). The environment is defined within, and by, the actions of capital circulation (Harvey 1996).

The production of nature, under capitalism, reinforces society-nature interactions, to such an extent that "it defies the conventional, sacrosanct separation of nature and society, and it does so with such abandon and without shame" (Smith 1990:xvi). Such interaction is inevitable, and unavoidable, and as Smith (1990:65) goes on to argue, "Through human labour and the production of nature at the global scale, human society has placed itself squarely at the centre of nature. To wish otherwise is nostalgic. Precisely this centrality in nature is what fuels the crazy quest of capital actually to control nature, but the idea of control over nature is a dream". It is this centrality which underpins the arguments presented throughout this thesis. This is complemented by Harvey (1996:182), arguing, "all ecological projects (and arguments) are simultaneously political-economic projects (and arguments) and vice versa". The production of nature is both a cultural and economic process:

> Much of what happens in the environment today is highly dependent upon capitalist behaviours, institutions, activities and power structures. The sustainability of contemporary environments heavily depends upon keeping capitalism going. [...] we can collectively hope to produce our own environmental history, but only under environmental conditions that have been handed down to us by way of a long historical geography of capital circulation, the extraction of surplus values, monetized exchange, and the circulation of commodities.
>
> (Harvey 1996:196)

However, Whatmore and Boucher (1993:167) do make the point that "while nature cannot be (re)produced outside social relations, neither is it reducible to them".

Nature is being reconstructed, and is emerging as a commodity through 'capitalist nature', "one made and remade as a commodity form within the specific

logics of capitalist production, and competition accumulation" (Castree and Braun 1998:7). This is to such an extent that as Katz (1998:47) argues, "Faced with the loss of extensive nature, capital regrouped to plumb an everyday more intensive nature". The myth of superabundance (see Udall 1963) has proven to be just that, and society must thus adapt accordingly. Under the profit imperative, landscapes are (re)constructed as exchange values (Castree and Braun 1998). Claims that capitalism is always 'antiecological' are, as Castree (2002:141) argues, counter-intuitive, for "this supposes that 'produced natures' or 'created ecosystems' are, ipso facto, undesirable, when in fact they are more and more essential to the reproduction of contemporary socionatural life" – a point reinforced through the proliferation of environmental restoration schemes. The *production* of nature, particularly through environmental restoration, should not be confused with the idea of the *control* of nature, yet control may accompany production (see Section 2.3.2). Although nature can indeed be produced, such produced nature cannot be exploited or manipulated indefinitely for it has a 'materiality which cannot be ignored' (Castree 2000).

Through environmental restoration, landscapes are remade both materially and semiotically. The practice of restoration constricts and redefines the production of nature, authorising "a privatized rescripting of nature. The social is excluded as a redemptive prelude to the resocialization of nature in a very particular guise" (Katz 1998:57). Restoration practices have produced landscapes that are, to quote Robertson (2000:464) "conceived of as moveable and consumable commodities, ambiguous admixtures of natural and cultural categories that signify, perhaps, the fragility of both in contemporary capitalist society". Restoration practices are favoured over preservation, for as Katz (1998:56) acknowledges, "Rather than enshrining nature, restoration works it; rather than ignoring, eclipsing, defacing or erasing environmental knowledge, restoration is premised on its ongoing production and exchange".

There exists an inherent paradox in restoration practices, of replacing one anthropogenic influence on the landscape with another: "The aim of the restorationist is to erase the mark of his own kind from the landscape. Yet through the process of restoration he enters into a peculiarly profound and intimate relationship with it" (Jordan 2003:12). Importantly for this research, (re)constructing tracts of 'nature' provides a context for society to explore the idea of nature and its value. Landscapes can be abstracted in terms of functions and spatiality, insofar as "Created ecosystems

tend to both instantiate and reflect [...] the social systems that give rise to them, though they do not do so in noncontradictory (ie. *stable*) ways" (Harvey 1996:185). As Pfadenhauer (2001:228) remarks, "Different local site or land use conditions and decision structures require different local goals and measures"; restoration decisions, are, and must be, site-specific and context-embedded (Higgs 1997). Restoration tends to "naturalize the produced and produce the natural" (Katz 1998:57), reflective of the wider context where "nature is mediated through society and society through nature" (Smith 1990:19).

Restored nature connects with Marxist ideas of social nature, which advocate a *material* rather than a *conceptual social construction of nature* (although the latter may guide and frame the former, dispelling the epistemology-ontology dualism):

> Capitalism commodifies whole landscapes, constructs and reconstructs them in particular (profit motivated) ways [...] 'first nature' is replaced by an entirely different historical-geography of natural products. The imperatives of capitalism bring all manner of natural environments and concrete labor processes upon them together in an abstract framework of market exchange. Under capitalism humans relate to nature in a specific way, through commodification of natural products, and in so doing actively appropriate, transform, and creatively destroy it. The 'natural' regions of say, the mid-western United States, cannot be understood simply as pre-existent natural grasslands, as the traditional notion of 'first nature' would imply. Instead – and this is the point – they must be seen as *constructed natural environments* evolving out of decades of intensive, profit-driven conversion into what they presently are.
>
> (Castree 1995:19-20)

The idea of 'first nature' suggested in the above quote refers to "the inherited non-human nature", with the concept of 'second nature' depicting "the nature produced by human activity [... alongside] the institutions, the legal, economic and political rules according to which society operated" (Smith 1990:45-46). With the production of first nature also from within and as a part of second nature, the distinction between human and nonhuman nature collapses. 'Second nature' (and indeed 'third nature' (Kitchen *et al* 2006)) is that (re)produced within, and as a part of, capitalist systems; internalised in the economic system. While contestation surrounds the necessity of such distinctions (see Smith 1990) – grounded in mastery and domination, materiality and abstraction, thus reintroducing the nature-society dualism – the ideas remain important concepts within this research, illustrating not only the changing conceptions of and relations between (restored) nature and society, but also manifestations of nature.

The production of (restored) nature is further complicated by rationalisations of nature as a 'fictitious commodity', which cannot "be detached from the rest of life, be stored, or mobilised" (Polanyi 1957 in Robertson 2000:467); alongside the limits to reconstruction imposed by such rationalisations. Some aspects of nature cannot be physically (anthropologically) altered, posing obstacles to capitalist development (Castree 2001b). Regarding nature solely as a condition of production overlooks "the fixedness of features like wetlands and forests which, unlike capital or labour, can neither move nor shift to new kinds of production to achieve comparative advantage" (Lele 1991 in Robertson 2000:466). Natural entities are not simply 'putty in the hands of capital', but, as Castree (2002:139) observes, "Rather, they are necessary and active moments in a continuous process of circulation and accumulation". The capitalist construction of nature is not always transparent, as natural processes are not fully commodifiable.

Particularly relevant to a discussion of environmental restoration within a framework of produced nature is the idea of the *restoration of natural capital* (RNC)[7] (see especially Aronson *et al* (2007a) and their edited volume investigating the science, business and practice of restoring natural capital; also Daly and Farley 2004; Aronson and Le Floc'h 2000; Clewell 2000). The restoration of natural capital extends the efforts of ecological economists to ensure that nature is visible in market exchanges, but in instrumental terms.

Defined by Aronson *et al* (2007b:5), RNC is "any activity that integrates investment in and replenishment of natural capital stocks to improve the flows of ecosystem goods and services, while enhancing all aspects of human well-being". The rationale for RNC is threefold, grounded in society's dependence on nature, socio-economic well-being as determined by the quantity and quality of natural ecosystems, and restoration practices providing a medium for sustaining and improving those ecosystem products and services available without costs of production (Clewell and Aronson 2006). Combining conservationist concerns with (societal) demand for natural resources, restoration is one approach to augmenting natural capital: "Investing in restoring natural capital does not detract from nature conservation, but

[7] The source of much debate between ecologists and economists, and one which has gained in both momentum and significance worldwide following the publication of the *Millennium Ecosystem Assessment* (MEA 2005), and its conclusions on the declining global stock of natural capital.

rather adds additional meaning, relevance and effectiveness to conservation efforts" (Aronson *et al* 2006:138). RNC thus reinforces nature-society interactions, to such an extent that restoring natural capital has become "mainstream business in the quest for managing human-dominated ecosystems from within, meaning considering people part and parcel of the larger ecosystem and biosphere" (Aronson *et al* 2006:1-2).

The annual global value of ecosystem goods and services was conservatively estimated by Costanza *et al* (1997) to be US$33 trillion. If this *is* the measure of our dependence on natural systems (albeit twelve years old now), then the investment of financial, human and social capital in support of restoration (and environmental sustainability) is fundamental. When viewed through a social nature lens, restoration is a conduit for the dovetailing of human and social capital with natural capital, fortifying nature-society interactions in the pursuit of an improved environmental (and socio-economic) condition. Aronson *et al* (2007a) are leading the way in promoting such interactions, with a pronouncement of: *ecology as if people mattered; economics as if nature mattered.*

The capacity of society to 'produce' nature must not, however, be over-exploited (nor, as Braun (2002) argues, become an apologetics for exploitation). As a warning to environmental restoration practices, Cowell (1993:20) argues that "environments can, by the judicious use of those tools employed in gardening or landscaping or farming, be built to order", paralleling Guinon (1989 in Robertson 2000:485) thus: "eventually habitats will be designed, engineered, constructed and evaluated in accordance with codes, regulations and performance standards that have yet to be written".

I wish to briefly highlight the implications associated with planning gain, and environmental mitigation and compensation, as a very specific set of contexts in which nature is (very overtly) socially produced. For, as Castree (2000:30) suggests, "in *particular* times and places in relation to *particular* environments capitalism is ecologically harmful whereas in others nature is produced in ways that have positive social and ecological effects", raising questions as to what is both destructive and beneficial for society and nature. Environmental restoration practices endeavour to repair damage, not legitimise new disruption. Equally, practices seek to avoid serving as a guarantor for the reparation of anthropologically-induced environmental damage; motives cannot be reduced to the accumulation of capital.

Nonetheless, landscape improvements achieved through environmental restoration can be interpreted and misread as nothing more than an example of 'planning gain' or an extension of 'natural capital'; a 'negotiation tool' (Cloke *et al* 1996b). Any potentially adverse effects of a development on the environment can be offset through associated environmental and community benefits or planning gain, the latter deemed a 'guiding principle for countryside planning' (Countryside Commission 1989 in Whatmore and Boucher 1993). Alongside planning gain is the mechanism of 'environmental compensation', whereby "losses could be restored or 'reversed' [...through] positive environmental measures of comparable worth – to maintain the overall 'stock'" (Cowell 1997:293; see also Cowell 2003, 2000). In this respect, the environment is becoming a substitutable, but not necessarily commercial asset, raising concern as to what is acceptable as compensation in terms of both quality and quantity. This links in to the 'no net loss' of wetlands philosophy (as exemplified by Robertson 2000; see also Eden 2002). Caution must surround regulations, for as Meyer (2006:47) argues, they do "little more than transform nature into a product of the human imagination". Although degraded landscapes are repackaged as a commodity to be bought and sold, managed, and apportioned, commodification narratives may prove detrimental to the future of the environment for they mould and redefine nature in their own reflection.

Concerns have been raised over the practice of planning gain, equating it with a 'trojan horse' of sorts, due to "the secret and undemocratic nature of the process and the potential for abuse whereby permission could be granted to an inherently 'bad' development if sufficient planning gain was offered" (Thornley 1991 in Cloke *et al* 1996b:163). Restoration effected through planning gain may obscure or justify environmentally damaging practices, and threaten conservation mechanisms. Nature-as-commodity remains conflictual, contributing to both conservation and development rationales, with the former in part legitimising the latter: "monetized protections of nature through wilderness and habitat preservation surround the crass commercialism of our use of nature and so give it a veneer of accountability and respectability" (Harvey 1996:131).

I wish to conclude this discussion of produced nature with an albeit extreme example – that of the Wilderness Lodge within the Walt Disney World Resort – for it

exemplifies many of the contradictions bound up in both restoration and naturalness debates, as analysed throughout this chapter. At first glance, the Wilderness Lodge, 'celebrating the grandeur and glorious National Parks of America's great North West' appears as just that – a tribute to the North American landscape, and to a bygone frontier era. However, there is an inherent surreality to its design:

> The materials used in building the Lodge would seem to be wood and stone, but the majority of what looks like wood and stone is actually carefully molded, colored, and sometimes hand painted, concrete. The massive stone blocks which seem to make up the foundations of the building are concrete, as are the rocks out of which are 'carved' the 'Observation Point' and steps. These rocks, and those that artfully surround the geyser, are in fact hand painted concrete attempting to look completely natural, right down to the painted-on lichen, mold and algae stains (these artificial stains now compete with the real thing). The geyser itself is a highly complex, computerised water-theater which is connected to the three different water systems which service the pool area.
>
> (Cypher and Higgs 1997:116)

The Wilderness Lodge appears as nothing more than a front, a not-very-accurate portrayal of the physical environment. To begin with, it is not even located in the North West, but Florida. Every aspect has been designed to be the way it is; nature is tamed and controlled to correspond with the needs of the guests:

> The Lodge excludes the unwanted, there are no unpredictable wild animals, and the road never needs to be plowed. Keeping out undesirable elements takes on a different meaning at Disney World; the designers of the Lodge wanted to include deadfall in the construction of the stream and geyser formation, but it just wasn't possible at Disney – 'the Disney janitocracy would be out there cleaning it up, we even looked at fiberglass deadfall, but it was way too expensive' (informant). [...] the Lodge is *rich*, or better than real. The geyser goes off predictably every hour, no waiting, the guests can see native art without having to deal with native people, the geyser and the Grand Canyon are within easy walking distance of each other.
>
> (Cypher and Higgs 1997:122)

As if that were not enough, there is no opportunity to discover 'hidden nooks and crannies': "the detail is extraordinary. 'You may be proud of yourself for noticing something' says a Disney spokesman, 'but somebody thought to put it there'" (Cypher and Higgs 1997:117).

What is evident is an attempt to recreate something which is an improvement on the reality (the original), for particular purposes and interests. It is best expressed thus: "like many things created by Disney, *it is truly a copy without an original*"

(Cypher and Higgs 1997:117; emphasis added). The Wilderness Lodge is not an exact replica of another National Park Lodge, but rather a composite, extracting the best elements from numerous Lodges. These particular practices – of creation, restoration – have attracted critiques of various sorts, feeding into wider debates of the environmental ethics inherent in restoration discourses, with restoration seen as 'faking nature' (Elliot 1997, 1982) and as an 'artifact' (Katz 1992). Bartram and Shobrook (2000:372), drawing on the work of Baudrillard (1994), present a critique of the practice of (re-)producing nature, whereby "An inability to allow anything to end naturally has produced a fin de siècle culture of endless duplication, where even the duplication of duplications become thought of as authentic". As a consequence, *what authority should be awarded to issues of authenticity?* As Cypher and Higgs (1997:127) ask, "is there anything about authentic experience – being in the uncontrolled presence of a real grizzly bear – that matters?" In my mind, the immediate answer would be one of 'yes – all of it', simply because that is how it should be. I realise this is simplistic, naïve even, but precisely because it is 'authentic' should be cause enough for celebration. *Isn't that the point?* The Lodge highlights a new reading of environmental restoration rationales – "the total transformation of one place into another according to clear ideological objectives" (Cypher and Higgs 1997:111). Yet this may not even qualify as restoration at all.

Critiques of the production of nature argue that it over-emphasises production (to the disadvantage of non-economic/non-capital processes and relations); that it is too anthropocentric (although it is necessary (even possible) for it to be anthropomorphic); and that it is masculinist, exemplifying concerns of dominance and control (Castree 2001b). Concerns of dominance – of a 'Promethean dominance over an externalized nature' – are also raised by Demeritt (2002:782), for he points to "condemn[ing] these actions of construction/production for an anthropocentric refusal to acknowledge the independent moral standing of nature. [... For] Nature should be regarded as independent and not objectified as a means to human ends".

Although taking onboard some of the ideas bound up in a Marxist political economy approach to the production and commodification of nature, this research does deviate somewhat from this, through recognising the limits of economic reductionism, to align more with nature-society *interaction*, rather than *societal and economic dominance* over nature. It seeks to take forward the observation made by

Leopold (1949 [1968]:viii), that, "We abuse land because we regard it as a commodity belonging to us. When we see land as a community 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 mechanized man, nor for us to reap from it the esthetic harvest it is capable, under science, of contributing to culture". Granted this, Castree's (2001b:203; emphasis in original) observation is particularly apt here: "capitalism is incapable of producing nature in progressive ways because the pursuit of profit is its overriding objective. [...] *while we cannot not produce nature in the twenty-first century, we can at least endeavour to produce it in noncapitalist ways*" – that is, extricating science and technology from capitalist constraints.

While the social construction of nature provides a platform for unpacking and analysing discourses of environmental restoration (particularly in terms of meaning and power), and their mobilisation into action on the ground, there remain factors that are not present in social constructionist perspectives. By exploring how social phenomena develop in social contexts, environmental restoration is framed as a social construct; a solution to a social problem (that of environmental degradation and destruction). As a consequence, there is a concern that social constructionism downplays the reality (and immediacy) of environmental issues, and the importance of material and physical factors. Moreover, a social construction perspective is undermined by 'nature' (in its many guises) functioning without human influence – it does not allow for the study of nature-as-'other'.

2.3 Philosophies of Value in Restoration Discourses

2.3.1 The Value of Nature

In making sense of practice and politics, disputes over discourses of environmental restoration have been dominated by debates of values and objectives. The success of any restoration effort is dependent upon those concepts of value applied, and the weighting awarded to them (Cowell 1997). The natural environment is a repository for a wide range of values, and as such challenges the mobilisation of restoration discourses. As Cowell (1997:294) argues, "there exists a series of values located in environments which cannot, by definition, be fully restored, no matter how great the

level of technical expertise in environmental restoration" (see also Goodin (1992) and a 'green theory of value'). Subsequently, concern surrounds how *restored nature* "may be seen as 'equivalent' in value to what is lost" (Cowell 1997:301). I will argue in Section 2.3.2 that replication is not a lynchpin to restoration discourses; that the focus should realign to achievements at reintroducing 'nature' and natural processes to (thus improving) a tract of the land.

The point is made by Swart *et al* (2001:233) that "Restored or created ecosystems and landscapes are primarily valued not as a piece of imitative work, but because of their resemblance to the reference system, which is in turn highly appreciated". However, this then raises the question as to why the reference system is considered beautiful, or appropriate to recreate, and why the value of a restored site should equal the pre-disturbance state. The value of 'restored nature' is not so much grounded in a (superficially attractive) link to a previous condition, but is instead derived from its appropriateness for, and compatibility and connectivity with, the wider landscape context. It does not need to be nature primeval to be valuable. The Rocky Mountain Arsenal in Denver, Colorado is one such example:

> the Rocky Mountain Arsenal is now among the worst toxic waste dumps in the United States. But that is not all it is. Partly because the site is so toxic that most people have avoided it for decades, it has emerged as one of the West's most remarkable wildlife refuges. Its wildlife populations are more diverse and abundant than those anywhere else in the central Rockies. [...] More and more visitors come to the Arsenal to enjoy its 'natural' wonders, leading some to dub it the 'Nation's Most Ironic National Park'.
>
> (Cronon 1996a:27-28)

A similar example is provided through the Green-Line Area in Beirut, Lebanon, a belt of green space which emerged following the 1975-1991 war, when processes of natural regeneration and succession came to dominate in areas that were destroyed and abandoned in a demarcated no man's land (Mady, pers comm.; Møystad 1999).

There is no value-free definition of nature, and often the value of nature (and natural capital) is anthropocentric, developed in the field of environmental economics (see Weesie and van Andel (2008); also Harvey (1996) and monetary valuations of nature); determined by its capacity to 'supply' ecosystem goods and services to meet societal 'demands'. Nature valuation is also anthropocentric not least because we do not know what a non-human valuation of nature would be (Castree 2001b).

However, non-anthropocentric instrumental values (or anthropocentric non-instrumental values) should not be overlooked, with Weesie and van Andel (2008:1) noting "If environmental sustainability is what we are striving for, then those values of ecosystem functions, items and processes that benefit the internal (ie. ecological and evolutionary) functioning of nature itself (and thus have a biocentric orientation [...]) must also be taken into account" – with discourses of environmental restoration complementary to such an approach. By analysing restoration discourses (and (the value of) restored nature) through a socio-nature lens, the research seeks to examine the nature-society interactions contributing to such valuation. Both anthropocentric and non-anthropocentric values can contribute to the understanding and application of environmental restoration discourses.

The valuation of nature is grounded in three 'classical, philosophical questions: what is true, what is right, and what is beautiful'; and can be broken down into three constituent parts – ecology, ethics and aesthetics (Swart *et al* 2001)[8]. Within this research, particular attention is awarded to environmental ethics (Section 2.3.2); alongside aesthetic concerns, with debate surrounding the extent to which *attractive* landscapes should be created, or be a coincidental side effect of restoration efforts (see Hettinger 2005a, 2005b for further analysis). Environmental value may also be partly aesthetic (Gunn 1991), but this is complicated by social natures, for as Soper (1996:26) suggests, "Those who refer us to the unmediated aesthetic value of nature should bear in mind how far preferences in nature have [...] been the 'construct' of cultural activity and of its particular modes of artistic representation". Aesthetic considerations can justify environmental protection, but they should not be central to the defence of the environment, as aesthetics is hugely subjective (see Hettinger 2005c). Moreover, while the end destination may be known, the path to get there is undecided, as Swart *et al* (2001:231) argue: "Even when restorationists agree about the period that they intend to reconstruct – often the period before human settlement – there may be disagreement about how such a situation should look and whether a reconstruction is possible".

There are multiple approaches to valuing nature, and this is not without implication, for as Swart *et al* (2001:231) suggest, "Different ecological paradigms may thus lead to different ecological descriptions and different guidelines for the

[8] Soper (1995) provides a slightly different focus in terms of: aesthetics, intrinsic value, and utility.

practice of restoration and conservation, at the level of species, populations, communities and ecosystems". Three key approaches appear to dominate, however – wilderness, arcadian, and functional approaches (Swart *et al* 2001). These concepts draw heavily upon (parallel, perhaps) the work of Christensen *et al* (1996 in Swart *et al* 2001), who define ecosystems in terms of natural, semi-natural, and intensively-managed systems. Although the wilderness (natural) approach is most frequently applied to the valuation of nature within environmental restoration discourses, when considered from a social nature perspective, the arcadian valuation approach appears as more appropriate for it is one which "refers to semi-natural and extensively used cultural landscapes where human influence is considered, under some conditions, to be a positive element because it may enhance biodiversity and may lead to a harmonious landscape" (Swart *et al* 2001:235). Put simply, it promotes interaction (and cooperation) between society and nature.

2.3.2 The Moral Implications of Environmental Restoration

The concept of environmental morality is intrinsic to wider concerns of environmental ethics, with particular significance for restoration discourses. As Brennan (1984:38) notes, "what it is moral to do may, on occasion, be something that does not benefit individual humans, communities of humans and other beings with qualities like those of agency, rationality and sentience". What is required is consideration of all the 'parties' involved, alongside the recognition that non-human species exist *in their own right*, and not simply *for* humanity. This is best expressed within Leopold's (1949 [1968]:224-225) 'Land Ethic': "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise"[9].

It is for this reason that scepticism surrounds the value of 'restored nature'. One of the major arguments rallied against discourses of environmental restoration concerns a reduced value attached to 'restored nature'; that is, that restoration 'fakes nature' (Elliot 1997, 1982), and is an 'artifact' (Katz 1992), or that it may even harm nature[10]. Taking forward this concern, Turner (1988:51) powerfully argues, "Is not the restored prairie little better than a dusty little diorama, with its perpetually brilliant sky

[9] Leopold's use of 'to preserve' in the above statement is problematic, not least because it seems to favour preservation over restoration (or conservation).

[10] The value of original nature is defined in terms of non-anthropocentric and intrinsic value, as opposed to instrumental value.

lit dimly by the fluorescents, its claustrophobic trompe l'oeil perspective, its taxidermized specimens frozen forever in some 'natural' act of forage or nest building?" In light of the arguments I have made and supported elsewhere in this chapter[11], this is not a view that I sign up to – nonetheless, I raise the issue within this literature review, for it is hugely influential in determining and guiding the multiple discourses of environmental restoration, and as such cannot be ignored or overlooked. As a consequence, the structure of this section is two-fold: first, it examines the basis of value (what is purportedly *lacking* in 'restored nature') and thus why that value is valuable, and second, explores act-centred ethics, to determine whether society should indeed engage in restoration. Essentially then, restoration practice as a 'good act' or a 'bad act' is explored, for both society and the environment.

Much philosophical discussion of nature is predicated on it being defined as that 'unmodified by human activity' (Elliot 1997). Such an approach is the adopted framework within environmental ethics debates – "if the goal of environmental philosophy is to describe the non-human-centred value of nature and to distinguish nature from human appreciation of it, then presumably nature cannot be the sort of thing that is associated with human creation or manipulation" (Light 2000 [2003]:399) – and as such provides a framework to structure my own argument. As identified earlier in this chapter, social constructionism is the major theoretical framework underpinning this research, and seen in this way, environmental philosophy and the concepts generated through debates become another social construction of ideas of nature and restored nature that are looked for in the case studies. Testing the relevance of such conceptual frameworks is a theme which runs throughout the thesis.

This discussion takes as its foundation the work of both Elliot (1997, 1982) and Katz (1992), for they provide the strongest philosophical rejections of the theory and practice of environmental restoration – a practice which 'contaminates nature with human intentionality' (Jordan and Turner 2008). Essentially, both reject the value of restored nature on the grounds of the 'wrong kind of genesis', yet approach it from markedly different perspectives. This is taken forward by Goodin (1992):

> A restored bit of nature is necessarily not as valuable as something that has been 'untouched by human hands'. Even if we simply stand back and 'let

[11] That is, discourses of environmental restoration taking forward and advancing a nature-society *interaction*, rather than *dualism*.

> nature take its course' once again, and even if after several decades most of what we see is the handiwork of nature rather than humanity, there will almost inevitably still be human residues in its final product. Even if we subsequently 'let nature take its course', *which* course it has taken will typically have been dictated by that human intervention in the causal history. To the extent that that is true, even things that are largely the product of natural regeneration are still to some (perhaps significant) degree the product of human handiwork. And they are, on the green theory of value, that much less valuable for being so.
>
> (Goodin 1992:41)

Elliot (1982 [2000]:71) poses a 'restoration thesis' (later relabelled as a 'replacement thesis' (Elliot 1997)), whereby "the destruction of what has value is compensated for by the later creation (recreation) of something of equal value". As such, discourses of environmental restoration are considered a means of rationalising environmental destruction. However, the restoration thesis is rejected through an analogy grounded in original and replicated works of art and nature. As Elliot (1983:360) observes, "the argument that is supposed to defeat the restoration thesis is the argument [...] that genesis is a relevant, indeed crucial, aspect of environmental evaluations". The argument is grounded in the presence of "properties which cannot survive the disruption-restoration process" (Elliot 1997:78).

Restored nature would be of less value; it would be analogous to an art forgery – with restoration merely producing a replica, and thus 'faking nature'. The argument follows that ultimately, one is short-changed by a copy of nature, as the value of nature largely rests with the notion that it is an 'original'[12] – its value is determined by its origins. A copy cannot reproduce the value of the original, with the product 'the result of the wrong kind of process' (Light 2002; Rolston 1994). One question is whether the *copying* of a landscape is necessarily a negative practice[13], for it can lead to innovation, and "the patient, careful labor of copying the natural prairie called for the medieval virtues – humility and obedience to nature, poverty and chastity of the imagination, sensitivity, self-abnegation, self-effacement" (Turner 1988:54; also Jordan 2003). Accompanying these are the notions of moral agency, rationality, and responsibility – with restoration discourses cultivating virtues *for society*. Restoration

[12] I will leave this term here for the time being, as it supports the point being made, but on the whole, 'original' is a term I wish to avoid – it is a dubious concept to use within an environmental context, not least because nature is not static; and as such, landscapes are at varying states of development, with varying 'origins'. Moreover, granted the anthropogenic influences evident in and on the landscape, the latter should be redefined as cultural landscape, erasing any idea of original or indigenous nature.

[13] Reflected in its prominence within the opening quote to this literature review.

distils those qualities which demonstrate societal respect for the environment to portray them as also respectful of wider societal concerns.

For Elliot (1982 [2000]:74), value is not always fully restored or -restorable, as "part of the reason that we value bits of the environment is because they are natural to a high degree" – thus when naturalness is destroyed, value is lost. Nature functioning outside of society's plans is valuable (as Goodin 1992); yet it is acknowledged that to distinguish natural from non-natural 'requires detailed working out' (Elliot 1982). Moreover, for Elliot (1997:85), "there can be loss of value without the loss being perceived" – ruling out any theoretical 'covert' restoration. As a consequence, to value restored and original nature equally is at best an ignorant ideal, for it only examines the superficial similarities. It is also arrogant to assume society capable of such a 'fix'. Perception, judgement and valuation are grounded in *emotional* responses, and as Elliot (1982 [2000]:79) argues, "The claim is that if there is no judgemental element in environmental evaluation, then there is no rational basis for preferring real to faked nature when the latter is a good replica". The issue here is not whether an equivalent is plausible or acceptable, but whether this philosophical clarity 'works', either logically or ethically, in the real world, given the messiness of social natures.

Put forward in Elliot's arguments are *degrees* of naturalness, and therefore, of value (see also Rolston 1994). Elliot (1982) poses three scenarios in which John, as someone who values wilderness, may find himself: (A) John is plugged in to an experience machine which gives him non-veridical experiences of hiking through a wilderness; (B) John is taken to a 'simulated, plastic wilderness area' which he falsely believes to be real; (C) John is taken to a restored and regenerated forest on an area previously devastated by strip mining, which he falsely believe to be pristine forest (Elliot 1982; Gunn 1991). All three scenarios are very dependent on a specific form of nature – nature-as-wilderness – as a source of value, promoting a very narrow reading of nature and naturalness. Whilst John is short-changed by all three situations, it is to varying degrees: a plastic landscape may be an improvement on a simulated one, just as a real landscape is an improvement on a plastic one. However, the 'real' landscape remains a product of contrivance – if it were 'genuine', it may be more highly valued.

From this, it can be argued that the problem lies with deception and ignorance, yet as Gunn (1991:295) qualifies, "the difference in value between the fake and the real is not merely reducible to the wrongfulness of deception". Moreover, *actual*

deception is rarely in question. One counterargument to Elliot (1982), (granted in an arts context), takes forward the idea of redemption, an act-centred ethical perspective:

> A restoration is an original which has been damaged or partially destroyed in some way and has now been brought back to its original appearance [...] There is typically no intent to deceive; on the contrary, the restoration of decaying artifacts is a source of pride. It is evidence of our respect for our cultural heritage.
>
> (Gunn 1991:303)

The analogy between original works of art and 'original' nature is not watertight, particularly when one considers that the former is a product of contrivance and design, whilst the latter is not. Fakes and replicas (of works of art, pieces of furniture) can exist alongside the original, whereas restorations cannot co-exist with the 'original'. Instead, they become one and the same. The restoration of a degraded ecosystem produces a different ecosystem, and however similar it may appear, is not the same as the previous condition. Thus, it cannot be a forgery, becoming instead a replacement or a replication, as restored ecosystems "respond continuously in biotic expression to their own internal processes and to ever-varying conditions in the external environment" (Clewell and Aronson 2007:8). Perhaps equating environmental restoration with an art restoration (that is, repairing damage), rather than a forgery, is more appropriate.

The benefit of environmental restoration is not completely dismissed by Elliot, however. Restoration is not necessarily 'bad', creating deceptive 'fakes': "Artificially transforming an utterly barren, ecologically bankrupt landscape into something richer and more subtle may be a good thing. That is a view quite compatible with the belief that replacing a rich natural environment with a rich artificial one is a bad thing" (Elliot 1982 [2000]:76). Restoration is thus a suitable practice for sites with little potential for natural regeneration. Moreover, as Elliot (1997:108) also observes, "a restored natural environment, provided it accords with natural designs and is constituted by natural objects, may possess considerable intrinsic value, and certainly much more than the degraded environment which was the object of restoration". Restored nature has value in and of itself, for as Turner (1988:52) observes, "and though there is one wisdom that says that we know a thing by its origins, there is another that says 'by their fruits ye shall know them' – that is, we derive the identity of something not from what produced it but from *what it produces*". As such, restored

sites can possess 'natural' qualities even if they lack natural continuity – but it locates (relative) value in the object, not in the 'correctness' of the process. For Light (2002), "we need to think about how restoration can augment existing natural value as the best foundation for determining the value of restorations".

In acknowledgement that some forms of restoration may be beneficial, Light (2002, 2000) distinguishes between two forms of environmental restoration within Elliot's writing[14]: (i) *malicious* restoration (echoing the restoration thesis; as art forgery), and (ii) *benevolent* restoration (repairing damage without being a justification for damage; as art restoration). As a consequence, it can be argued that Elliot's anathema is not all restoration practice, but a specific type – that of malicious restoration. As Light (2000 [2003]:401) argues, "The upshot of this malicious-benevolent distinction is that one may be able to grant much of Elliot's claim that restored nature is not original nature while still not denying that there is some kind of positive value to the act of ecological restoration in many cases".

Whilst Katz follows Elliot insofar as to argue that environmental restoration does not restore 'nature', new arguments and a somewhat different line of reasoning to the disadvantages of restoration are presented. Like Elliot, Katz is outraged that a technologically-created nature can be misconstrued as reality, yet the crux of Katz's argument lies in his belief that restored nature is an artifact (as opposed to a 'fake'), that is, a product of intention, which subsequently cannot be natural.

Katz's view towards restoration – the 'big lie' (Katz 1992) – is best expressed thus: "Cloaked in an environmental consciousness, human power will reign supreme" (Katz 1992 [2000]:84), and as such, "the practice of ecological restoration can only represent a misguided faith in the hegemony and infallibility of the human power to control the natural world" (Katz 1996:222). Whilst Katz does acknowledge his extreme position, he derides the anthropocentric world view that we can, and should, repair the damage human intervention has inflicted on the physical environment. Countering this claim, I agree with Light (2000 [2003]:402), who argues "even if we were to grant Katz his position that it is impossible to restore nature, we may still have

[14] Light (2002 drawing upon Sagoff 1978) also puts forward the idea of integral and purist restorations, alongside rehabilitative restorations.

moral obligations to try to restore nature", on the grounds of 'restitutive justice' and a 'principle of restitution'.

For Katz, restoration can only ever be malicious for "all restorations represent evidence of human domination and arrogance towards nature" (Light 2000 [2003]: 401). Restoration of nature is not only impossible, but a substitute and a 'bad act':

> Once we dominate nature, once we restore and redesign nature for our own purposes, then we have destroyed nature – we have created an artifactual reality, in a sense, a false reality, which merely provides us the pleasant illusory appearance of the natural environment.
>
> (Katz 1992 [2000]:91)

Light (2000) has identified within Katz's papers five interconnected arguments against the idea and practice of environmental restoration (KR1-5); what he terms KR1: the duplicitous argument; KR2: the arrogance (or hubris) argument; KR3: the artifact argument; KR4: the domination argument and KR5: the replacement argument – with the issue of domination most prolific. I do not have the space here to provide a detailed critique of Light's (2000) rejections of the KR arguments, but Light's is indeed an opinion with which I am in accord. In my mind, domination – and through that, taming – in an environmental context should be understood not as always 'controlling' the land but as instead creating a unique link between culture and nature:

> 'What does "tame" mean?'
> 'It is something which is too often forgotten', said the fox. 'It means to establish ties...'
> '"To establish ties"?'
> 'That's right', said the fox. [...] 'But if you tame me, we shall need one another. To me, you will be unique. And I shall be unique to you'.
> [...] 'One can only understand the things one tames', said the fox.
>
> de Saint-Exupéry (1943 [1995]:76-78)

Restoration is not necessarily a form of domination and subjugation, denying freedom and autonomy. Nonetheless, for Katz, restoration at best *resembles* nature: "the redesign and management of natural systems is thus a paradox: once human intervention occurs, there is no longer a natural system to be preserved, there is only an artefactual system" (Katz 1993:227). For Katz, a restored environment is a compromise, created for human use (and the betterment of human life) – it is a 'human instrument', a "*means* to the furtherance of some human *end*" (Katz 1993:229). Countering such a claim, (and again promoting act-centred ethics):

> Implicit in this assumption is that our relationships with artifacts are not as strong as the relationships we could have with natural systems once we have come to recognize that natural systems have a direct moral value that should be respected. But what may be overlooked on such views, which may provide some helpful middle ground, is that artifacts can bear meaning in a normative sense in a way that does not degenerate into some kind of occult view. At the very least, objects can be the unique bearers of meaning for relationships between humans that hold strong normative content, and in that sense we can interact with them in ways that can be described as better or worse in a moral sense.
>
> (Light 2008:103)

Even if environmental restoration produces nothing more that an artifact, it can aid in restoring the culture of nature (Light 2000). The value of restored nature as an artifact is dependent on the capacity of artifacts to "help to mediate the sort of human relationships that are presumptive reasons for action" (Light 2008:107). Katz (2002) does acknowledge that "the remediation of damaged ecosystems is a better policy than letting blighted landscape remain as is". However, the root of such acceptance is that a blighted landscape can no longer be considered natural, and thus any intervention cannot be judged to be dominating. It is apposite here to remark that very few restoration efforts interfere with 'pristine' landscape, and as such raises the question identified by Light (2008:100) of whether "restoration can ever lead to domination since we generally don't try to restore landscapes that haven't been damaged". Phrased another way, avoidance of damage provokes a different set of questions.

Fundamentally for Katz, *artifacts have functions, whilst natural entities do not.* The former have an instrumental (anthropocentric) use – the result of human intention and design – whereas the latter are autonomous; independent of human purpose. Artifacts have no nature of their own, just the purposes awarded to them. It is a lack of 'intrinsic function' (Katz borrows Brennan's (1984) terminology) which separates natural entities from artifacts. Artifacts would not exist if a purpose had not been foreseen. Katz sees a teleological character to artifacts – artifacts serve externally introduced goals, setting them apart from natural (living) entities[15]. Brennan (1984) suggests artifacts are composed of three features – an internal structure, purpose and manner of use. The 'nature' of an artifact can be determined more by how it is used (ie. unintended characteristics) than its intended use. This claim has repercussions for

[15] It is important to note, however, that some artifacts do have a nature of their own – such as domestic animals and GM products.

Katz's arguments, particularly as Vogel (2003) suggests Katz's account 'identifies an artifact too tightly with the intentions of its creator'.

Whilst the outcome of a restoration may be seen as producing an artifact, the point must be made that the restored product might be both natural and artifactual – "a restored environment, although it might well be an artifact, nonetheless remains natural through and through" (Vogel 2003:150). Debate surrounds whether the distinction between nature and artifact can in fact be upheld, for the two exist along a spectrum. In addition to this, some things are the result of human intentions, although one would hesitate to label them as artifacts (with childbearing often highlighted as an example). Indeed, a third category exists, of objects 'intentionally produced by human beings that are *neither* natural *nor* artifacts' (examples include friendships, children, even artworks) (Vogel 2003). Humanity has a unique role in relation to nature, as we are both products of natural evolution, and responsible for (passively (and actively)) transforming nature.

An acceptance of humans as natural and nature as often already human (what Vogel (2003) terms the humanness of nature and the naturalness of humans) discounts restoration as a forgery or a lie (or even a natural object), but still advances the notion of a restored landscape as an artifact. This point is reinforced by Vogel (2003:164), who notes, "our artifacts are natural, every one of them, not (just) because *we* are natural but because they could not exist without the gap [the space between actions and consequences] [...] *nothing we do can be done without nature*". Yet, not everything humans do or make is natural. So, *where does one draw the line?* 'Naturalness' as a basis for value is ethically tricky, as such a value is not agreed upon. As Vogel (2003:159) illustrates of Katz's position: "if the products of some kinds of intentional human action by his own admission are not artifacts, and if those sorts of actions seem to involve initiating and then allowing the operation of natural (and specifically biological) forces 'to go forward on [their] own', then it is no longer clear why ecological restoration may not be one of them". For Katz (1993), though, it is that 'real evolution' does not occur in artifacts.

An examination of the nature of artifacts allows for the discovery of value in 'newly created' landscapes of any sort – which can subsequently highlight the extent (and value) of human potential, and lead to the celebration of such qualities. What is required is 'the virtue of humility' (Vogel 2003), or rather, the pairing of self-

knowledge and humility[16]. The intent of restoration is again important here, as a process-centred ethic. As such, *should the evolutionary origin of the landscape be awarded such a major role in determining its status as natural or an artifact?* Consider the following quote:

> Landscapes, whatever their origins, become 'natural' over time in the absence of human influence. Entropy, 'a measure of the degree of disorder in a substance or a system' [...] appears to be at least as important as evolution in defining landscapes as it works continuously on all elements in a landscape to reduce free energy. In that regard, entropy also seems to come closest to Katz's definition of a nature which is inherently inconsistent with most of humanity's actions.
>
> Zentner (1992:114)

The argument thus follows that artifacts will become natural unless they are maintained (Rolston 1994). This presents somewhat of a paradox for those who view restoration efforts as artifacts, as one conception of 'successful' environmental restoration is that "its products require the least maintenance after establishment" (Zentner 1992:114). In a similar vein, one can also argue that restoration can be an outcome of nature 'doing its own thing', and therefore it is not an artifact as there has been minimal human interaction. The question thus arises: *is environmental restoration a result of natural forces?* Humans *assist* and *facilitate* in the process, but 'nature' *creates* the landscape; and natural processes take over once restoration efforts are complete. As Rolston (1994) explains, the naturalness of restored spaces is 'time bound', even though historical continuity remains fractured. This is further illustrated by Ladkin (2005:208): "the truth of restoration efforts [...] is that nature determines which species survive and thrive, along with the overall balance of a restored landscape". However, the issue persists as to whether the social context allows it (Cowell 2000), for restoration practices are bounded by socio-cultural, economic, political and legal structures.

What can be concluded from the arguments of both Elliot and Katz (having softened in recent years) is that even if 'restored nature' is perceived as nothing more than culturally produced artifacts, the restoration of human relationships with nature remains possible. Granted the criticisms that are rallied against restoration discourses, the question thus arises, *should society engage in (or care about* (see Proctor 2001)) *environmental restoration?* In my mind, environmental restoration is not unnatural,

[16] Yet, either one alone, notes Vogel (2003), can be dangerous.

provided that 'natural' is not awarded the narrow definition of 'non-human'. Thus, *it suddenly becomes much harder to defend the original claim that restoration is not natural.* As Vogel (2003) observes:

> The point of restoration is not the reproduction of a particular *thing*, but rather the putting into play of natural processes – or wildness – that we then allow to operate, unpredictably and unimaginably in ways that are outside our ability to control. To recognise this point would in turn be to see that the wildness that we're after *is there all the time*, throughout the restoration process; it's not something that comes in at the end, not something we *produce*; but rather something that we *use*.
>
> (Vogel 2003:162)

Concerns that restoration is 'faking nature' or creating an 'artifact' ignore debates of social nature, and within that, themes of co-construction and hybridity, for efforts to determine the value of restoration further reinforce the nature-society dualism. Once such a fixation is abandoned, it becomes evident that ongoing human action in a landscape can have a more complex relationship with, say, wildness:

> [Restoration] recognizes that, while humans may be part of nature, they also have more power to alter it than do other species. Admitting this, it goes on to provide ways to use that power responsibly and ethically by going back in time to heal what has been changed or damaged. But this very act, even as in some ways it reaches into the past, also creates a new future.
>
> (Cowell 1993:27 citing Merchant 1986)

Humanity can be a positive contributor to nature, rather than a disruptor and destroyer. This is supported by Maser (1988 in Cowell 1993:27-28), who also touches on the theme of redemption to point to restoration as "both the means and the end, for as we learn how to restore the land, we heal the ecosystem, and as we heal the ecosystem, we heal ourselves". Only through strengthening the interactions between society and nature can "we be mobilized to restore nature and to assure it, and ourselves, a future" (Wilson 1992:291). To use Cowell's (1993) terminology, humans should not be estranged from nature. Restoration discourses seek to sit somewhere between the establishment of preserves at one extreme, and human-dominated productive lands[17] (artifacts) at the other.

Ladkin (2005) poses a counterargument to Elliot and Katz, and it is one which I support, illustrating that restoration does not necessarily imply the domination of nature. The restoration ethic she proposes encompasses the following attributes:

[17] Gardens, parks, farms, canals, game reserves, timber forests, and so forth.

"humans seeing themselves as facilitators or co-creators in restoration efforts, a commitment to learning from the landscape itself, an assumption that the landscape has its own agency and projects, and seeing the aim of restoration as to engender land wealth and increased biodiversity" (2005:204). Nonetheless, an element of *human choice* remains throughout, even though the impetus behind restoration efforts can often be grounded in an altruistic rationale – seeking to protect the welfare and continuance of flora, fauna, and other natural features.

Rationales for environmental restoration do not simply focus on restoring nature to a site, but are also concerned with restoring a (closer) societal relationship with nature (see Light 2008, 2000; Higgs 2005, 2003; Turner 1988). This relationship is framed, perhaps, as a new form of environmental ethic, promoting the arcadian tradition (Turner 1988). The value of environmental restoration rests with ameliorating the landscape, and promoting (epitomising, even) a 'positive symbiotic relationship between humans and the environment' (Cowell 1993), with its own intrinsic value. Most objections to environmental restoration relate to its role in legitimising loss, but this is far from its only role. The concept of 'co-creation' is advanced by Ladkin (2005:204): "if restoration could be enacted through an ethic of 'co-creation', the resulting value might in some way replace that lost through ecosystem degradation". An example is provided within Dr Seuss' *The Lorax* (1971), within which the title character laments the loss of all the Truffula Trees:

> "SO...
> Catch!" calls the Once-ler.
> He lets something fall.
> "It's a Truffula Seed.
> It's the last one of all!
> You're in charge of the last of the Truffula Seeds.
> And Truffula Trees are what everyone needs.
> Plant a new Truffula. Treat it with care.
> Give it clean water. And feed it fresh air.
> Grow a forest. Protect it from axes that hack.
> Then the Lorax
> and all of his friends
> may come back".
>
> (Geisel 1971 [2004]:61)

Human intervention is not necessarily negative (unnatural), as restoration saves natural values that may otherwise be lost[18]. The practice of environmental restoration has the potential to "serve as opportunities for the public to become more actively involved in the environment around them and hence in the potential for work on restoration projects to encourage *environmental responsibility* and *stewardship*" (Light 2008:101, emphasis added; see also Burke and Mitchell (2007) on participation; Jordan (2003) on community; and Light and Higgs (1996) on the politics *in* restoration). In addition to the social benefits accumulated through restoration, restoration reconnects society with nature, by "restoring the part of culture that has historically contained a connection to nature. This kind of relationship goes well beyond mere reciprocity; it involves the creation of a value in relationship with nature beyond obligation" (Light 2000 [2003]:407). Even though 'restored nature' cannot replicate natural value(s), restoration practices nevertheless exhibit a positive value through the interactions between society and nature (Light 2000). The value is both anthropocentric and non-anthropocentric. What is important is not just whether restored nature is really 'nature', but the value of restoration in human terms (Light 2000), drawing on the notion of 'environmental pragmatism' (see also Proctor 1998). Humans can act in cooperation with nature – an equilibrium can exist between human uses and nature – and thus domination comes to be viewed as harmonious adaptation; restoration may even undo the effects of domination. It fosters a sense of identity and harmony.

In response to a concern whether restoration can 'help engender a positive normative relationship with nature', Light (2000 [2003]:407) responds that "When we engage in acts of benevolent restoration, we are bound *by* nature in the sense that we are obligated to respect what it once was attempting to realize before we interfered with it. [...] But we are also bound *to* nature in the act of restoring". The moral and ethical constituents of restorative relationships instil a greater awareness of society's actions upon the environment. It is through such moral and ethical awareness that restoration reveals the physical consequences of societal actions in the environment, rather than simply glossing over them to encourage interaction with non-degraded nature (as Light 2000).

[18] 'Save' can be understood in this instance to mean allowing something to exist in its inherent state.

Aside from the societal benefits gained from the application of discourses of environmental restoration, there is a related concern as to whether all degraded landscapes should in fact be restored. Quinn (1992:115) argues an exception to the rule through the Appalachian Copper Basin, noting that "Some degraded landscapes have value as degraded landscapes and should not be restored, or at least not totally. This intrinsic value can be cultural, historical, educational, ecological, or some combination of these or perhaps other categories".

Nevertheless, the costs of doing nothing may in some instances do more harm than good, for as Aronson *et al* (2006:4) note, "the costs to human society and economies of degraded, damaged, fragmented and destroyed ecosystems are much greater still. Instead of assets, in fact they often become liabilities". The alternative may be designer ecosystems, unmanaged emerging ecosystems, or abandoned ecosystems, and as Aronson and van Andel (2006:225) question, "are they socially, legally, politically and financially acceptable as substitutes?" There is also an associated concern of whether these substitutes give rise to wider risks of their own. Environmental restoration is not a be-all and end-all approach, and is very much dependent upon, and guided by, the particularities of the wider landscape context – be it environmental, social, cultural, political or legal. Relationships between society and nature, and the intentions underpinning actions, are also clearly crucial in rationalising and practicing environmental restoration.

2.4 The Management and Practice of Environmental Restoration

Redeeming a swamp [...] comes pretty near to making a world.

(Thoreau 1857, in Thoreau 2007:311)

One of the penalties of an ecological education is that one lives alone in a world of wounds.

(Leopold 1972:165)

Restoration actively seeks out places to repair the biosphere, to recreate habitat, to breach the ruptures and disconnections that agriculture and urbanization have brought to the landscape. But unlike preservationism, it is not an elegiac exercise. Rather than eulogize what industrial civilization has destroyed, restoration proposes a new environmental ethic. Its projects demonstrate that humans must intervene in nature, must garden it, participate in it.

(Wilson 1992:115)

Discourses of environmental restoration are very much contested, not least because while they may be regarded as 'cleaning up our mess' (Throop 2000), or as degradation in reverse (Bradshaw 1987), they are also seen as simply disguising such 'mess', and undermining conservation and protection rationales. On this latter point, Katz (1992 [2000]:92) argues, "We are putting a piece of furniture over the stain in the carpet, for it provides a better appearance. As a matter of policy, however, it would be much more significant to prevent the causes of the stains". Nevertheless, the practice of environmental restoration offers one approach to actively reversing environmental damage, and is regarded as presenting a new, positive paradigm of communion with nature (Jordan 2003; also Jordan and Turner 2008), acknowledging (accepting responsibility for) and compensating for human influences.

By way of framing discussion of the management and practice of restoration, this section begins with a review of academic and manager/practitioner attempts to define and clarify what restoration is, and traces those key debates which suggest why a degree of clarity is needed. Introduced in the previous chapter, it is the SER International (2004:1) definition which underpins this research: "Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed". I wish to also draw upon Clewell and Aronson's (2007) idea of restoration as an holistic endeavour (with strong parallels in Jordan 2003; also Naveh 2005, 1998), assisting recovery to a condition of 'wholeness' for it pulls together "issues of ecological degradation, biodiversity loss, and sustainability science simultaneously and [draws] on cultural resources and local knowledge and skills in restoration work" (Clewell and Aronson 2007:1). The research focus is upon the restoration of socio-natural (or cultural) landscapes, with the type of restoration taken forward within this research, to use the terminology of Aronson *et al* (1993), restoration *sensu lato* (functional), rather than *sensu stricto* (historically accurate).

Other concepts appear alongside restoration, and are often employed in parallel, or interchangeably – concepts such as ecosystem management, rehabilitation, regeneration, remediation, reclamation, revegetation, reinhabitation, renovation, renewal, compensatory mitigation, creation, landscape architecture and design, ecological engineering, restoration of natural capital, and sustainability science (see especially Clewell and Aronson 2007; also SER International 2004; Tapsell 1995). Within this research, regeneration and rehabilitation discourses are analysed alongside

restoration, as a means of further exploring such interchangeability. A commonality shared by most of these terms – the prefix 're-' – suggests return to a previous or improved condition. Whilst there may be overlap between the terms, they are not synonymous. As Hall (2005:xii) acknowledges, "there *is* something in a name, and today's rally for restoration, at least in some of its forms, is not merely the relabeling of the old". If this is true, then the implications for 'environmental restoration' in its present state, and the power of language to shape understanding, are interesting.

Despite the popularity of environmental restoration in recent decades, the idea of restoration is slippery and contested, and as Eden (2002:317, 328) points out, "it evokes not merely practical conservation measures but the struggle to define and dominate 'nature'. [...It is] a singular word offering myriad meanings and rich rhetorical resources, even for opposing sides". Environmental restoration is a very diverse discipline, and as Hall (2005:xii-xiii) points out in a comparative history of the development of environmental restoration within North America and Italy, "There have been many styles of restoration through time, and these styles have changed according to knowledge bases, biases, and even fashion". Popular connotations surrounding the idea of environmental *restoration* may complicate and confuse its intent, as "euphemism and the weakening of language always come at a cost" (Jordan 2003:25). Evidence of this rests in a statement by Hall (2005:202): "More than a problem of semantics, the subtle differences in these various definitions can lead to the creation of dramatically different landscapes". Tapsell (1995:109) goes so far as to argue that perhaps one should stop using the term 'restoration', yet acknowledges the improbability, as "it is an easy and convenient term to use" (see also Higgs 1997). It is such diversity (and associated differences) which guides this research.

Ecosystems cannot be restored to the past, and so, to paraphrase Clewell and Aronson (2007), environmental restoration is a 'metaphorical concept that should not be taken literally'. As further qualification of this, Clewell and Aronson (2007:136) note that restorationists "do not restore; they restart, revitalize, reorient, or accelerate inherent ecological processes". There are ambiguities and pitfalls, and as Demeritt (2002:780) observes, "Most people are prepared to acknowledge that our concepts and ideas are humanly created and change over time and space through social processes of discovery, debate and, sometimes, domination". It is this latter idea of domination with which I am particularly interested. As Harvey (1996:118) also argues,

"Conditions, needs, desires and situation are rarely stable for long, rendering the idea of some stable definition of environmental problems moot". A compromise in definition is sought by academics and practitioners, encompassing environmental and cultural aspects: "A narrow definition risks marginalizing restoration as too expensive and exacting within broader ecological management practices. With a definition too wide, the practice of restoration becomes confused with a host of potentially disturbing initiatives" (Higgs 1997:341). Disagreements over restoration discourses stem from differing notions of the health of, and damage to, the environment.

There remains, however, the underlying question of: *why should we restore?* The short answer would be to heal what Leopold (1972) describes as a 'world of wounds'. But there are many rationales or motivations for achieving this. As one example, Clewell and Aronson (2006) point to technocratic, biotic, heuristic, idealistic (further delineated as atonement for environmental damage, reentry into nature, renewal of the nexus between nature and culture, or spiritual renewal), and pragmatic (to restore natural capital, or ameliorate climate change) rationales. It is the idealistic and pragmatic rationales with which I am most interested, providing a foundation from which to explore the implementation and mobilisation of restoration discourses.

Drawing upon this, motivations to restore can be further reorganised in terms of satisfying ecological values (recovery of an impaired ecosystem to an intact condition); personal values (reentry into nature, response to environmental crisis, personal transcendence, aesthetics); socio-economic values (natural goods and services desirable or necessary for material well-being); or cultural values (appreciation of iconic landscapes, a sense of place and of community, environmental education, renewal of the nexus between nature and culture, aesthetics) (Clewell and Aronson 2007). A similar approach is reflected in Aronson and van Andel (2006): (i) to preserve native biodiversity, (ii) to maintain or improve sustainable economic productivity, and (iii) to protect – or augment – our stock of natural capital (with (iii) a combination of (i) and (ii), incorporating notions of ecosystem health and integrity). The practice of environmental restoration is informed and guided by engagement with nature, the establishment of relationships, and design – contributing to a paradigm of 'restoration design' (France 2008). Restoration practices not only provide society with

knowledge of ecosystems, but also provide an opportunity for the testing of such knowledge and understanding (Kane 1994).

Much of the pursuit of clarity reflects a desire to find a careful balance – a middle ground – for while environmental loss cannot be fully compensated, "more habitat creation is a better solution than less" (Cowell 1997:303). In some instances, restoration draws upon romanticised ideas of nature, and serves to 'keep it like it was':

> 'Dear old God,' he prayed, 'you know and I know what it was like here, before them bastards from Washington moved in and ruined it all. You remember the river, how fat and golden it was in June, when the big runoff come down from the Rockies? [...] There's somethin' you can do for me, God. How about a little old *pre*-cision-type earthquake right under this dam? Okay? Any time. Right now for instance would suit me fine'.
>
> (Abbey 1975 [2004]:33-34)

Motivations are also grounded in direct action, and the belief that 'Somebody had to do it' (Abbey 1975), and that if such an opportunity is ignored, development "strip-mines the mountains, dams all the rivers, paves over the desert and puts you in jail anyway" (Abbey 1975 [2004]:112). Environmental restoration can thus be read as a 'get out of jail free' card. It remains, however, that society must first be convinced of the necessity of restoration practices (Pfadenhauer 2001).

Moreover, experiences of shame and guilt, and thus redemption, are powerful drivers for environmental restoration (see particularly Jordan 2003; also Jordan and Turner 2008); with restoration serving to repay a debt of environmental damage, degradation and destruction – offering a 'gift' back to nature, as restitution (Rolston 1994). As Jordan (2003:96) questions, however, "does restoration represent a fair or reasonable repayment of our debt to nature?" For the reasons outlined thus far in this chapter, and throughout the remainder of this thesis, I would argue that it indeed does. Taking forward the idea of redemption, and introducing the idea of 'healing', Higgs (2003, 1997) suggests:

> Restoration offers a redemptive opportunity – we heal ourselves culturally, and perhaps spiritually, by healing nature (in redemption, to carry the biblical image further, there is also the possibility of absolution, which provides a strong incentive for action by those racked with guilt over environmental degradation). Thus restoration taps potent cultural values that may well accelerate both participation and commitment to its practice.
>
> (Higgs 2003:215)

Simply put, for most environmental managers the practice of environmental restoration is seeking to remove degrading influences and restore *biodiversity* (along with process and connectivity). For Hobbs and Norton (1996), restored environmental attributes should contribute to: composition, structure, pattern, heterogeneity, function, and dynamics and resilience (see also Aronson and Le Floc'h (1996) and Aronson *et al* (1993) for discussion of vital ecosystem and landscape attributes). The level of organisation at which goals are specified is reflective of processes perceived critical to the restoration effort – equated to major themes of the restoration of (i) species, (ii) whole ecosystems or landscapes, and (iii) ecosystem services (Ehrenfeld 2000). It can involve the reintroduction of species to an area, the elimination and eradication of exotic species, or large-scale landscape alteration.

Definition is often entangled with objectives, but restoration goals are difficult to quantify, for they are informed not only by the 'complex, heterogeneous lineage' (Ehrenfeld 2000) of restoration theory and practice, but also the dynamic nature of nature (rather than static attributes). As such, an adaptive approach is often sought. Restoration may involve the return of an ecosystem to an approximation of its structural and functional condition (Pfadenhauer 2001) prior to damage and degradation, but it can also include the creation of an entirely new ecosystem which has never before existed on the site (Light and Higgs 1996). While many authors, such as Jordan (2003), focus upon the restoration of existing degraded and damaged landscapes, Turner (1994) pushes the boundaries of 'environmental restoration' one step further; to the invention and construction of synthetic landscapes, even hypothesising the terraforming of other planets. Although Turner's (1994) ideas are extreme, they nevertheless serve to highlight the potential of a restoration remit. It is restoring a system to a state that is seen as healthier.

Approaches to restoration are guided not only by assumptions of society's place within nature, but also a sense of the past (Hall 2005) – by entwined nature myths and history myths. Nonetheless, restoration is not simply an act of nostalgia. Although undertaken with reference to the past, and society's role in that past, the practice of environmental restoration for Clewell and Aronson (2007:8) produces a future state of an ecosystem, as ecosystems are dynamic: "We invariably restore ecosystems 'to the future' within the contexts and constraints of the present" (compare

with Choi (2007, 2004) and future-oriented restoration). All restoration is a 'work in progress'; with an end state difficult to determine.

Environmental restoration is an 'acid test for ecology' (Bradshaw 1987), and for ecological understanding and practice. Restoration may restore *objects*, or *properties* (Hall 2005), thus there is no single context for setting restoration goals. It is also defined in terms of both a *process* and a *goal*. The suggestion that the *process* should be the *goal* of restoration (Pfadenhauer 2001; Higgs 1997) remains plausible when scrutinised from a social nature perspective, for it emphasises and prioritises the interplay between nature and society that is inherent in restoring nature. Considered along a spectrum of product, process, experience and performance, Jordan (2003) pays particular attention to the performative genre, with the practice of environmental restoration drawing insight from comedy and festival (celebration), initiation into community, rituals of world-renewal, and the art of the literary pastoral. The idea of world-renewal is particularly interesting for this research; but more than that, it is the idea that restoration can at one and the same time be both an art and a science. As Eden (2002:324) argues, desired elements are selected, "trying out examples from previous restorations and emphasizing a pragmatic and incremental approach to 'doing' restoration, rather than a clear or abstract orthodoxy". Higgs' (2003) idea of 'nature by design' may seem controversial, but it is unavoidable and axiomatic, given the interpretation and subsequent mobilisation of restoration discourses.

Styles of restoration, Hall (2005:5) suggests, can be viewed as depending on nature myths – the nature of nature – "on whether one saw either nature or culture as bringing serious earthly damage or as bringing earthly repair". Restoration is defined in terms of both *restoring ahistoric* conditions (placing nature over culture to achieve success), and *renaturing historic* conditions (placing culture over nature). Hall (2005) proposes three styles of restoration: (i) maintenance gardening, countering damaging (natural) processes; (ii) reparative gardening, countering damaging agents (ie. society) and (iii) reparative naturalizing, converting degraded states to wild states; with the final approach the most popular. 'Naturalizing' guides the creation of new landscapes; 'restoring' looks to past landscapes. With implications for this research, Hall (2005:233) notes, "Only by switching myths can one justify different ways to restore".

The complexity bound up in the practice of environmental restoration is such that it "may be less a process of remedying damaged natural systems than of

discovering our biases about environmental damage, less a process of re-creating past landscapes than of discovering our myths about idealized landscapes" (Hall 2005:238). These claims are integral to this research, particularly in understanding and rationalising restoration discourses and practices. Restoration goals must be dynamic, and reflective of the changing environmental condition. For Higgs (1997), 'good restoration' must take into account historical, social, cultural, political, aesthetic and moral aspects, and is grounded in ecological fidelity (in structural/compositional replication, functional success, and durability) and ecological humility, as well as ideas of effectiveness and efficiency. Restoration is about knowing to 'quit while ahead', it is "*mostly* stepping back, letting be, listening, waiting for the system to respond and go about its business" (Jordan 2003:77). It is allowing processes of natural regeneration to predominate, for as Jordan (2003:82) points out, "ecological systems, being alive, participate in their own restoration in ways that the restorationists may not even be aware of". The inclusion of such normative guidance here (Jordan 2003; Higgs 1997) is illustrative of the tendency of management discourses to pursue 'comprehensiveness'.

The idea of a reference ecosystem is a key debate, but becomes problematic when it alludes to a desired historical condition. A template of some sort for restoration (such as nearby existing system(s)) is essential, for it determines whether a site is indeed being restored, or remains in a state of degradation. As Hall (2005:194) observes, in the absence of a reference condition, "the target landscape can shift according to fashion. What appears healthy – or wild – today may seem unhealthy or unkempt tomorrow". The solution may be reference to a cultural landscape, which:

> Can and often should provide the best reference for actual restoration or rehabilitation projects. Of course, the relative value and naturalness of a cultural landscape depends a great deal on present-day perception and may underestimate the extent to which profound and perhaps irreversible degradation processes were initiated in the past in order to produce those cultural landscapes.
>
> (Aronson and Vallejo 2006:238)

Nevertheless, there is a contradictory nature to restoration goals, as environments undergoing restoration may follow alternative or (socially) undesirable trajectories, deviating from the target condition – the outcome of the combination of restorative

actions, alongside unforeseen influences. Restoration goals are also inevitably selective, with certain reference points chosen (or ignored) in favour of others.

Cultural landscapes are particularly relevant to this research, granted the physical process and product of environmental restoration, and the nature-society relations bound up therein. Naveh (1998:136) defines cultural landscape restoration as restoring "the historical and cultural values of ancient and traditional landscapes". For restoration to be successful, the discordance between natural and cultural biosphere landscapes must be overcome, if both are to counter or neutralise the effects of (and thus integrate) technosphere landscapes (Naveh 1998). A symbiotic relationship, drawing on the natural sciences and humanities (Higgs 2005), thus sees ecological function and structure restored alongside biological, ecological and cultural diversity. An holistic and transdisciplinary approach to both ecological and cultural landscape restoration (to total landscape ecodiversity) is fundamental, "broadening [...] the scope of restoration from the organismic to the evolutionary and functional" (Naveh 1998:142), exemplified within the Total Human Ecosystem. A 'cultural landscapes' framing complements and is sensitive to social nature perspectives, drawing upon and accentuating the synergy between society/culture and nature, and the bearing that each has on the other. Environmental restoration provides a backdrop against which 'cultural processes and ecological processes can be mutually reinforcing' (SER International 2004; also Higgs 2005). Restoration is equated with the culture-imbued acts of agriculture (Jordan 2003), and of gardening (Hall 2005; Jordan 2003; Cowell 1993; Turner 1985), with such associations further muddying the waters of restoration rationales.

The ultimate goal of restoration, for van Andel and Aronson (2006:x), is "to achieve sustainable, resilient and inter-connected ecosystems, and socio-ecological systems, providing goods and services to humans and habitat and well-being for non-humans as well". Or, phrased a different way, it is to complement socio-economic development; an "elixir to resolve socioeconomic problems and to institute sustainable economic development" (Clewell and Aronson 2007:5-6).

The practice of environmental restoration has been promoted and challenged by numerous lobbies and parties, with implications for the restoration debate. There are inherent theoretical and political objections: restoration is dependent upon public tolerance and political longevity (Pfadenhauer 2001); and yet while neither of these

factors is infinite, they are open-ended, and difficult to predict. There are also efforts to democratise practices. Consultation with, and the involvement of, local communities, and the use of local environmental narratives and knowledge, are increasingly advocated (Higgs 2005; Pfadenhauer 2001; Tapsell 1995; Naveh 1994), to strengthen nature-society relations and thus commitment to the restoration effort. Restoration practices should be bottom-up, rather than top-down; undertaken with the community, not for the community. Both expert and non-expert perceptions about environmental restoration should be incorporated into restoration decisions, highlighting the importance of different attributes. Restoration practices require much time and space, and input from people, yet they are "essentially local, in terms of the constraining physical and biological conditions, and especially in terms of local social and cultural linkages, or absence thereof" (Aronson and Vallejo 2006:240). There are questions, then, of how restoration knowledges travel.

Fundamental to knowledge dissemination and -networks (and policy transfer) are information exchanges, issues of validity and accuracy, and the capacity of lessons to 'jump scale' (Cox 1998), disembed themselves from their progenitor context, and be implemented elsewhere. There are also echoes between geographical thinking and the work of Rose (1993) here, with his concern for the 'fungibility' of policy lessons. Wolman and Page (2002) use information theory to explain the transfer of good practice in regeneration between local authority officers. This can be extended in this research context through applying insights from the production of environmental restoration discourses, examining how nature and restored nature are represented, and how these representations are interpreted by a range of other organisations, and those invited to act upon these 'lessons'.

Environmental restoration practices are not without their limits, however, and environmental management discourses often recognise that human concerns are centre stage: "Although ecological restoration is overtly directed at ecosystem improvement, it is ultimately conducted to fulfil people's values" (Clewell and Aronson 2007:170). For Jordan (2003:3), limitations of restoration are also grounded in anthropocentric concerns (though not necessarily human-instrumental), a measure of hegemony over nature, realised in "questions about our right to assume authority over other species, the feasibility of restoration on an environmentally significant scale, and the nature or authenticity of restored – or 'artificial' – natural ecosystems". A similar sentiment is

echoed in Katz (1998:56) arguing, "It operates at a smaller scale than that in which many environmental problems are generated; it can still be driven by deeply romantic notions of nature; and it has a tendency to privilege certain landscapes and land use practices". This feeds into concern that restoration may become a 'practice given over to human motivations alone' (Higgs 2005), to the detriment of ecocentric motivations. The practice of environmental restoration is seen as a threat to other environmental management and protection rationales, chiefly conservation and preservation (on the latter, see Kane 1994), although these can be complementary. Concern also surrounds the lack of data recording previous environmental conditions, and an uncertainty surrounding the outcome of the restoration effort.

2.5 Conclusions

This literature review attempts to contribute to the body of knowledge which interrogates the contested issue of nature and naturalness within discourses of environmental restoration, and the subsequent composition of 'restored nature'. Although reinforcing and adding depth to previous discussions, this review ventures to highlight the importance that a social science and human geography perspective can have for the theory and practice of environmental restoration. This review has brought into question the previous dominance of nature and naturalness in restoration debates, and has thus downplayed the construction of restoration as an artifact or fake. Wider relationships between nature and society have been identified, which in turn have allowed for discussion of a wider range of motives for restoration, such as those of redemption. There is little productive discussion between the 'theory' and practice of restoration, even though both elements feature prominently in restoration literatures (a point raised by Clewell and Rieger 1997). This research seeks to counter this 'dualistic' focus, through the tracing of theory through to practice, and isolating the environmental implications that may arise. It strives to identify and explicate perceptions and assumptions underpinning dominant restoration discourses, and how these are mobilised on the ground at specific sites. The result has been the advancement of a broader conception of 'environmental restoration'.

Complementing the five research questions proposed in Chapter One, several questions have emerged from this review of restoration literatures, and build on deficiencies identified in the literature to further inform the direction of this thesis:

- What are the implications of accepted or hegemonic definitions of restoration for practice? What other definitions are available?
- What kind of nature does society want, or demand?
- What is driving the production of restored nature? What effects are productions of nature likely to have on the wider environmental condition?
- Is it right to reconstruct nature?
- How can process- or outcome ethics complement restoration practices?

Drawing insight from Jordan's (2003) suggestion that the best way to manage a working description of restoration is to point to precedents, this research explores the uptake, interpretation and mobilisation of environmental restoration discourses within the context of three environmental projects – the Eden Project (Cornwall, UK), the National Forest Company (Derbyshire, UK) and the Walden Woods Project (Lincoln, MA). My approach is to look closely at these key instances of environmental restoration, and illuminate particular cultural contexts, to see what these might reveal about larger debates. The following chapter thus sets out the research methodology underpinning this research.

CHAPTER THREE

Research Design and Methodology

3.1 Detailing the Research Issue

3.1.1 Revisiting the Research Problem

The focus of this doctoral research is upon the multiple and contested discourses of environmental restoration, to determine the dominance of particular discourses, and the ensuing implications for the environment. As the literature review has shown, there is often little differentiation between understandings of restoration, with discourses employed interchangeably. In addition, no restoration scheme will interpret the meaning of environmental restoration in a similar fashion to another, with disputes an issue of values and objectives. Moreover, the rationale and lexicology of environmental restoration is guided by, and reflective of, changes in environmental policy and planning; with restoration discourses considered both an approach to environmental conservation, and working against the grain of protection and conservation. There also exists a gap in charting the development of social nature relations in 'restored' spaces, despite restoration discourses epitomising nature-society interactions, with society manipulating – and intervening in – a landscape (to varying degrees) to restore 'nature'. The research strives to uncover the intricacies bound up within restoration discourses, to reveal why particular themes are considered superior to others, and what this means for the mobilisation of discourses in particular places.

3.1.2 Relationship to Existing Research

Although the influence of existing research on the research questions is discussed in the review of relevant literatures (Chapter Two), there remain a number of points I wish to qualify. In conjunction with much research into environmental restoration, case studies are employed to address restoration issues, but here the similarity ends. This thesis is not about restoration efforts undertaken by the author, but is instead an assessment and examination of existing projects. The case studies examined within this research differ from the 'traditional' case studies cited, for they are not solely 'restoration projects', rather restoration practices are integrated within wider operations. In this instance, interest rests with *actions undertaken by project actors.* To my knowledge, no studies have addressed together the Eden Project, National Forest Company and Walden Woods Project; or examined (primarily) environmental restoration practices at these projects in detail.

This research favours a socio-cultural approach over one more technically- and scientifically-oriented, and uses social nature to ground the research in a theoretical context. What has been adopted is an overall focus on the operations of environmental projects, and their wider implications; rather than investigating the impact of (re)introducing a flora or fauna species, or a management technique. The environmental ethics bound up in restoration discourses can also be revealed through the actions of environmental organisations. Moreover, this research seeks to delineate different discourses of environmental restoration, but, notably, from a different perspective – namely, *why do particular discourses dominate, and with what implications for the environment?* The research strives to advance knowledge in the field of environmental restoration and associated environmental and sustainability concerns, integrating weaknesses raised within the literature review.

3.2 The Research Design

3.2.1 A Case Study Approach

This research examines the construction of restoration discourses, and their translation into specific practices and onto specific tracts of land; and through that, the influences of, and implications for, wider (landscape and socio-cultural-political) contexts. It is for this reason that a case study approach was adopted, for as Yin (2003:1-2) notes,

"The distinctive need for case studies arises out of the desire to understand complex social phenomena. In brief, the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events". Although counter-intuitive by Yin's (2003) definition, for the research questions posed are essentially 'what' questions, the case study was employed as an exploratory strategy (also incorporating elements of explanatory and descriptive strategies). The research did not require control over behavioural events, focusing instead upon contemporary events. The research design was a one-off snapshot study, allowing a systematic analysis of cases at a single point in time (with due attention to historical antecedents and the origins of the projects concerned). Problems arise if assumptions are made on causality based upon this type of design, although it can be useful to explore other phenomena or undertake an in-depth study of a particular case.

Within this research context, a multiple-case design was promoted, with the 'cases' three environmental projects: the Eden Project (Cornwall, UK), the National Forest Company (Derbyshire, UK), and the Walden Woods Project (Lincoln, MA)[19] (see also Chapter Four). As Yin (2003:52) argues of a two-case study, "the contexts of the two cases are likely to differ to some extent. If under these varied circumstances you still can arrive at common conclusions from both cases, they will have immeasurably expanded the external generalizability of your findings". Although this research is not seeking to provide scientific generalisation through the case studies, the findings may be "generalizable to theoretical propositions and not to populations or universes" (Yin 2003:10; also Mitchell 1983). A multiple-case study addressed issues of reliability, replicability and validity (be it construct, internal, or external) (see Yin 2003).

It is important here to briefly address the common factors connecting the projects. First, all are environmental projects, but the significance of this case study selection lies more specifically in the manifestations of *landscape change* realised across the project sites. The Eden Project, the National Forest Company, and the Walden Woods Project are all engaged in, and working towards, (re-)creating

[19] The environmental impacts and sustainable development philosophy of the Eden Project provided the focus for the author's undergraduate dissertation (Smith 2003). For the Masters dissertation, this was expanded: the National Forest Company appeared alongside the Eden Project to provide a comparative element to an examination of the implementation of discourses of environmental restoration (Smith 2005). During the course of the Masters studies, the author was introduced to Henry David Thoreau's *Walden* (1854), and later the Walden Woods Project, and thus a third case study was realised.

landscapes within their boundaries, and as such, present innovative approaches to restoration thinking and practices, whilst operating within varying contexts, and under numerous socio-cultural, political, economic and legal influences. Second, the three projects progress and promote a *socio-nature* mentality – specifically, the (re-) connections and interplay between society and nature. None of the case studies has a particularly long history through which to trace the evolution and development of environmental restoration discourses, but there is the opportunity to trace from the inception of ideas and discourses through to the present situation.

The projects can also be viewed as *demonstration or exemplar projects* (making them particularly useful for assessing 'dominant' discourses), with repercussions for wider environmental management and protection practices. The projects are exemplars in the sense that they highlight what restoration practices can achieve, even when restoration features as only one of several components of a project's operations. It is through various narratives and discourses that projects exercise power and authority in debates, and this is amplified (in both profundity and reach) when considered through exemplar projects.

I deliberately selected three rather different restoration schemes, with the intention of spotlighting the causal mechanisms that might be abstracted from these cases, and that might be more widely applicable (see Mitchell 1983). The key factors informing the selection of the case studies are presented in Table 3.1. The case studies provide a platform for an analysis of the evolution and mobilisation of restoration discourses, for while they provide the opportunity to explore ideas of landscape change and social nature, they also integrate understandings of landscape quality, and issues such as public participation and public access, cultural landscapes, and positionality (and dominance) in wider debates.

	LCh[1]	*SN*[2]	*BF*[3]	*Public*[4]	*ER*[5]	*Wider*[6]	*Global*[7]	*Cons*[8]	*Edu*[9]	*Res*[10]	*Cult*[11]	*Lit*[12]
EP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
NFC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WWP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

[1] Landscape change
[2] Integration of social nature ideas
[3] Located wholly or partly on a brownfield site; degraded/damaged land
[4] Public participation/public access
[5] Integration of environmental restoration practices
[6] Wider objectives – extending beyond environmental remit
[7] Known internationally; working towards, and supporting global concerns

[8] Conservation message
[9] Education message
[10] Research message
[11] Cultural landscape
[12] Influenced by environmental literatures

Table 3.1 | Justification of the case study selection.

Providing a framework for comparison, these selection criteria reflected my research interests, and emerged from both the research questions and the findings from the literature review. Moreover, the criteria served to validate and extend existing restoration literatures. Drawing on the dominant themes to come out of the literature review, the criteria promoted the interplay between society and nature (also supporting research question I), with a focus on cultural landscapes, and public participation and access. The criteria also located restoration discourses and practices as one of many features of environmental projects, to examine influences guiding restoration decisions, and how restoration responds to such influences (such as those addressing conservation, education, and research). Selecting projects with an international reach not only supports research into the influence wielded by projects in wider restoration discourses (research question IV), but also collaborations and partnership working (research question V).

Supplementing a first tier of projects (the Eden Project, the National Forest Company and the Walden Woods Project) was a second tier of collaborations and wider networks – organisations with a link to restoration practices at the three projects – to further explore the multiple and contested natures of restoration. For the Eden Project, organisations included the Atlantic Coast and Valleys Project, the HEATH Project, Landlife, Land Use Consultants, the Lost Gardens of Heligan, and WildWorks. Conkers Discovery Centre, the Forestry Commission, Forest Research, the Heart of the National Forest Foundation, Landlife, Leicestershire County Council, South Derbyshire District Council, Staffordshire Wildlife Trust, and the Woodland Trust strengthened exploration of restoration discourses within the National Forest Company. Within the context of the Walden Woods Project, the spotlight was upon the Caddo Lake Institute, the Department of Conservation and Recreation, the Estabrook Woods Alliance, Friends of Thoreau Country, Massachusetts Audubon Society, RESTORE The North Woods, the Sand County Foundation, Sasaki Associates Inc, the Thoreau Society, Walden Pond Board of Directors, and Walden

Pond State Reservation (for an overview of these projects and organisations, see Appendix 1).

The second-tier project selection was defined by joint working on 'restoration actions'; secondary projects located within the case study areas (relevant only in the National Forest and Walden Woods); and project representative cross-over. The inclusion of complementary case studies further supports the research questions, serving to highlight the extent of networks and collaborative working, and influences on wider restoration discourses, practices, and perhaps policy. The additional case studies also serve to corroborate or counter the use of particular restoration discourses, and understandings of wider environmental concepts.

A transatlantic comparison follows Hall (2005:6) who suggests it "allows one to better highlight the dependencies between nature, time, and the ideally restored condition". British and North American environmental knowledge can be utilised to expose environmental drivers behind restoration, and may enhance understanding of the processes present within (restored) spaces. Such a comparison may also in part prevent the internalisation of debates, for the research design (through the case study selection) is sympathetic to the transnational proliferation, and different understandings, of environmental restoration, and its cross-disciplinary nature.

3.2.2 Epistemology: Foundation and Perspective

As discussed in the literature review, the major theoretical framework underpinning this research draws on social constructionism. Such an approach prioritises and emphasises the significance awarded to the formulation of ideas/knowledges of (restored) nature, while also recognising the physical construction – that is, the production – of restored nature. A study by Marsden *et al* (2003) into the construction and understanding of forest natures, and ideas of community within social nature research, provides an appropriate foundation for discussion of social nature. Within Marsden *et al*'s (2003) paper, theories of social construction are combined with those of realism and ecological modernisation to provide a 'nuanced approach' to social nature – with this research taking forward the first two approaches. Marsden *et al* (2003:243) provide an account exploring "how natures are seen, used, practised and perceived by people in their places, and how both are fused together through

individual and community-based material activities and practices". There exist different social 'natures', defined by wider contexts and situations.

Irwin (2001:ix) raises an interesting issue with regard to the importance attached to environmental knowledge: "Since nature cannot speak to society without our active interpretation and understanding, environmental knowledge is central to the social-natural relationship". This is advanced by Dickens (1996 in Irwin 2001:166) who argues "No knowledge has fallen out of the sky with a label attached pronouncing 'absolute truth'" – yet while *knowledge of nature is a social construct, nature is* not only *a social construct*. There exists a material reality (the ontology of nature), but it is one which is also overlaid with societal constructions and understandings (the epistemology of nature).

For Demeritt (2001:26), "If nature is socially constructed, its existence is not independent of our knowledge of it [...] the idea that nature is a social construction also suggests that even if there were an ontologically dependent real world our empirical observations of it would still be biased by our socially constructed preconceptions of it". Nature is defined by both geographical and cultural contexts. As Smith (1990:18) explains, "nature separate from society has no meaning [...] The relation with nature is an historical product, and even to posit nature as external to society [...] is literally absurd since the very act of positing nature requires entering a certain relationship *with* nature". This is reinforced by Harvey (1996:189), who argues that 'every social project' is simultaneously "a project about nature, environment and ecosystem, and vice versa". Leading from this:

> Rather than taking claims about the social and natural world at face value, social constructivism emphasises the influence of different histories, traditions, social practices, power relations etc, on the conceptual models we produce and utilise. In this way, constructivism problematises any claims made by discourses to provide neutral or objective accounts, insisting that, to some extent, all accounts necessarily reflect the particularity of their origins in given circumstances.
>
> (Smith 1999:361)

Not neglecting the (external) material reality of nature, Castree (2001:17) argues, "We must live with this inability to know nature 'as it really is', while still remaining committed to the idea that some knowledges of, and practices on, nature are better or worse than others". Ideas of nature, and by proxy, those of restoration, are always going to be guided by cultural constructs.

Benton and Craib (2001:68) note a reflexive turn in constructing nature and society insofar as "sociologists were now not only to see nature as a socio-cultural construct, but also to 'problematise' the individual and collective actors, their interests and power relations, alliances and so on which had so far been drawn upon as explanatory variables". Castree and Braun (1998:5) argue that nature has become the epicentre for a "nexus of political-economic relations, social identities, cultural orderings, and political aspirations of all kinds". The concept of 'nature' should be examined in the plural, with universalism replaced by a more localised, context-specific approach to environmental concerns. As Marsden *et al* (2003:253) state, "nature is socialised just as community is naturalised. But this occurs in significantly different ways in different social and community spaces". What is interesting is the degree to which societal groups assemble power to control – or 'naturalise' – spaces in particular ways; social nature constructions transcend different spatial scales.

By way of introduction to a discussion of discourse analysis provided in Section 3.3.1, I wish to briefly touch upon the capacity of discourses to exert 'power' to suggest how this may inform methodologies for gathering 'discourse data'. It is through the very nature of *dominant* discourses that a degree of power is exerted, but such power can be realised in multiple ways. Consideration of the wider context, alongside unpacking the rationalisations and justifications behind particular discourses may reveal drivers of power and authority. Particular discourses also gain power through the downplaying or discounting of other discourses, or themes within discourses, but these lesser discourses also exert a power of their own. This acknowledgement was reflected in the research methodology, which sought to align informal discourses (such as the views of project actors) with more formal discourses (principally, documentary sources).

A more diverse and less dichotomous theoretical approach is needed to examine social nature. Thus, a repositioning of social construction as co-construction (with an associated concern for hybridity and actor-network theory (see also Murdoch 2001; Whatmore 1999; Haraway 1991)) would avoid the perils of social reductionism, for it "tries to develop a 'middle way' between the continuum of natural and social deductivism" (Marsden *et al* 2003:239). Despite my adoption of a social nature epistemology, I wish to address some of the issues rallied against such an approach. Realists have been critical of a constructionist epistemology, arguing that through

undermining the reality of environmental problems, an adequate analytical framework is not developed, thus ultimately denying the separate existence of the natural from the social. As such, a limited distinction is made between physicality and interpretation. Criticism is also directed towards social reductionism and a non-engagement with environmental concerns (environmental quietism). Moreover, social nature is sometimes accused of being hyper-constructionist, and of progressing relativist ideals. An appreciation of such concerns and criticisms, and of their implications for environmental restoration, has allowed a more reflexive application of social nature theory to this research.

3.2.3 The Research Methodology

The methodology utilised within this research drew upon that of Bishop *et al* (2002) – later modified within Kitchen *et al* (2005) – whose research of social forestry employed forest-wide research (organisation interviews, content analysis of local papers, local policy reviews); and locally-based research with study communities (focused discussion groups, in-depth individual interviews, and ethnographic work). I should qualify here that it was the *design* of *particular phases* of Bishop *et al*'s (2002) research methodology that was taken forward (see below), rather than the overall methodology.

Such a qualitative approach to data collection was adopted, for the research was concerned with "the analysis and understanding of the patterned conduct and social processes of society" (Denzin and Lincoln 2000:11). The research methodology, moulded by a social construction epistemology, was designed to investigate the construction (alongside the physical mobilisation) of discourses of environmental restoration. The research can be divided into two subsets – exploring at a micro level the particularities of space and place, and the socio-cultural (even political and legal) influences guiding restoration discourses; and at the macro level, the transferability of discourses through collaborations (and to a lesser extent, within policy). Such a combination provided a solid evidence base for the investigation of dominant environmental restoration discourses.

Executed through three inter-connected phases of research, the methodology encompassed participant observation, semi-structured interviewing, and visual ethnography; supplemented with secondary data collection. Each of these approaches

is addressed below. The research did not require strictly standardised (and thus more objective) methods and normative concepts – ruling out the option of questionnaires or structured interviews. It was instead concerned with the contexts and individual 'readings' of social life, processes and meanings, multiple versions of reality, the knowledge and skills of social actors, and actions and accounts. While the analysis has not followed networks (as would have been possible with actor-network theory (ANT)), the analysis has recorded the position of projects and project actors within wider networks. Methodologically, the analysis has followed actors.

Preliminary research to aid in refining the research topic and developing the methodology began in January 2006. Subsequently, a three-month research period was allocated to each case study, thus, November 2006 to January 2007 was spent conducting research at the Eden Project; February to April 2007 was spent with the National Forest Company; and June to August 2007 was spent with the Walden Woods Project. On average, two to three days a week were spent onsite at the projects during the period, allowing time to also conduct research with external groups and organisations. September to November 2007 was set aside to finish any research that was either not possible or feasible during the placements. The period October 2007 through to January 2008 was reserved for data analysis.

Participant Observation

Participant observation was particularly useful for this research as it allowed for the examination of processes operating in complex environmental networks, alongside the behaviour of actors and their links to organisations (that is, social processes and complex interdependencies in social systems, through social interaction). Selecting an unfamiliar setting was constructive: "because you do not know the rules for behaviour, you will fall naturally into the role of the participant observer" (Spradley 1980:53). As Becker and Geer (1969:324) note, "participant observation provides a situation in which the meanings of words can be learned with great precision through study of their use in context, exploration through continuous interviewing of their implications and nuances, and the use of them oneself under the scrutiny of capable speakers of the language". This was especially relevant to my research, with a focus on the (cultural) production and mobilisation of environmental meanings, created (un-) intentionally by the case studies, and by external organisations seeking to develop

similar approaches. Combining exploration with explanation, participant observation tested the validity of claims by project representatives.

Despite this, participant observation is not without opposition. As McCall and Simmons (1969:2) note, "critics deride participant observation as a romantic attempt to 'get close to the data'". Rossman and Rallis (2003) draw attention to issues that arise in the field, namely, preparations to gather data; getting comfortable in the field; defining the 'data'; turning sights, sounds and objects into data; the appropriate language to use; modifications to the research plan; reflecting on the field; and leaving the field. All of these concerns informed and guided my own research, but no implications arose from them. As participant observation necessitated immersion in the culture of the case study for prolonged periods, it was labour- and time-intensive.

I have had contacts at the Eden Project since my undergraduate studies, and at the National Forest Company since my Masters studies. My first visit to the Walden Woods Project was in Spring 2006, to introduce myself and my research to staff, accepting an invitation to attend the dedication ceremony for Thoreau's Path on Brister's Hill. These factors sought to cause as little disruption as possible to the research situation, with the participant observation conducted through a series of extended visits to the case study projects[20]. At all three sites, this involved desk space which served as a base from which to conduct my research. At the Eden Project, I was based with the Foundation Team under the supervision of the Foundation Director, at the National Forest Company, I was advised by the Chief Officer: Land and Project Development, and at the Walden Woods Project by the Land Conservation Coordinator.

Through participant observation, I was able to observe not only the day-to-day operations of the projects, but also the language used (and those approaches advocated and advanced) to represent various situations and events. I was thus a 'theoretical lens' in the research process (a vehicle for data collection) – presented as a non-expert, and thus not bound by pre-judgement. Attention was awarded to the level of rapport necessary to conduct the research, and issues of interdependence and reciprocal influences; as participant observation provided a 'context of interaction' (Angrosino and Mays de Pérez 2003; May 2001).

[20] Appointments for interviews with key project actors were arranged during the ethnographic research.

With the placements primarily a vehicle for observation and extended research, the ordering of the placements also worked in favour of the research, as it allowed for attendance and/or participation in various activities within the projects. At the Eden Project, I had the opportunity to join an Imerys–University of Reading tour through the claylands, examining landscape restoration after china clay extraction; alongside attending the Connecting Communities C2 conference (organised by the Peninsula Medical School and Devon and Cornwall Constabulary). Moreover, I had access to, and was listed on, the internal network; as well as being an Eden Volunteer (essentially for the purpose of allowing me full access to the site). During my research placement with the National Forest Company, I participated in one of the Business Benefit events, helping to plant trees in the Forest. At the Walden Woods Project, I took part in the Discovering Walden Woods outing series, and attended many of the lectures of the Approaching Walden professional development seminar for teachers and graduate students. The start of my placement also coincided with a Special Town Meeting in Concord, debating the siting of high school playing fields within Walden Woods – and this issue continued through my placement. All these events bolstered my research portfolio, addressing themes of environmental and cultural restoration.

Notes were made of conversations, observations, and events participated in; compiled in a field journal – "the descriptive data of what you observe and your comments on those data or the project itself [...] the running record [and] observer comments" (Rossman and Rallis 2003:198). When in the field, a journal enabled specific references to, and instances of, environmental restoration to be recorded, which could later be integrated into the research analysis. The fieldnotes were not a final form, but a tool to inform research. Research was conducted overtly, with project actors aware of my role; and, because information obtained was conditioned by the context, notes were made as and when required.

Semi-Structured Interviewing

There is a limited literature on the different discourses of environmental restoration, and their consequent mobilisation; and also on the accumulation and evaluation of social nature relations in 'restored' environments. The semi-structured interview provided a very effective tool for generating such understanding. Semi-structured interviewing was appropriate to this research, as, in line with Rubin and Rubin

(1995:51), "the purpose of the research is to unravel complicated relationships and slowly evolving events. It is also suitable when you want to learn how present situations resulted from past decisions or incidents". Semi-structured interviews are 'conversations with a purpose' (Burgess 1984), or as Mishler (1991) states, 'speech acts', which help "explain how and why culture is created, evolves, and is maintained [...] explore[s] specific topics, events or happenings [...] solicit[s] personal histories to examine social and political phenomena" (Rubin and Rubin 1995:3).

By reporting on a few themes in detail (rather than many superficially), the semi-structured interview had the potential to uncover rich data to answer the research questions, and examples of environmental restoration in practice. Interviews enabled project actors to express personal opinions and perceptions concerning the projects, the environment, and restoration: capturing the social construction of, and reactions to, ideas about restored nature.

There are, however, disadvantages to this approach[21] which must be considered. Interview data can be compromised through reactive effects of the interview situation, distortions in responses, and reportorial inabilities of the interviewees. Misleading or artificial responses may arise through intent – providing information believed useful. There are also issues of suggestibility with restoration discourses; of respondents using the terminology presented in the questions. Fontana and Frey (2000:645) point to "the spoken or written word has always a residue of ambiguity, no matter how carefully we word the questions and how carefully we report or code the answers". Moreover, as Maxwell (1997 in Wengraf 2001:57) suggests, "interviewing someone can only tell you what the person thinks or feels or values about what they think is real. It can never tell you what is actually real now or was actually real in the past".

An Interview Schedule, rather than an aide memoire, was employed, as this retained some control over the direction of the interview while allowing for clarification or elaboration (May 2001). Two Interview Schedules were designed – a Project-wide Interview Schedule (for staff at the Eden Project, National Forest Company and Walden Woods Project), and a Project Networks Interview Schedule (for projects and organisations with links to the three principle projects). The content remained the same across both Schedules, yet the phrasing differed, to take into

[21] With many also applicable to participant observation.

account the different situations. Not all the questions were asked during each interview; instead, the Interview Schedules were used primarily to guide the conversation. A sample of the Interview Schedules appears in Appendix 2A and 2B.

In acknowledgement that the types of questions employed will solicit different responses from the interviewees, the questions took the form of grand- and mini tour questions, for the research explores the everyday realities of those working within environmental (restoration) projects (compare with Section 3.3.1 on discourse analysis). Such descriptive questions, notes Spradley (1979:85) "aim to elicit a large sample of utterances in the informant's native language". The 'grand tour' (Spradley 1979) or 'content mapping' (Legard *et al* 2003) question utilised "widely framed questions designed to encourage spontaneity and allow the interviewee to raise the issues that are most relevant to them" (Legard *et al* 2003:148). A subset of the grand tour question – the typical grand tour question – was used to acquire a description of how things usually are. Typical grand tour questions were grounded in the research questions proposed in Section 1.3.2, and were used to introduce discussions themed around the background and development of the projects; project objectives and main activities; collaborations and networking with other projects; the influence and reach of the projects and external perceptions; ideas about environmental restoration; and the future development of the projects. The questions were worded such as to be both clear and understandable. A descriptive response was desired, and open-ended questions provided a loose frame of reference for informants' answers, and placed little restraint on responses and their expression. Put simply, the grand tour question did not presuppose an answer. Furthermore, the wording of the questions avoided emotive language. Such neutral wording removed the possibility of the interviewee feeling that the researcher was judging their opinion or understanding. The questions were flexible – in order to probe, resolve misunderstandings, explore limits of interviewees' knowledge, and encourage cooperation and rapport.

The 'mini tour' (Spradley 1979) or 'content mining' (Legard *et al* 2003) question was connected to, and moulded by, the response imparted for the grand tour question. These questions explored any emergent themes from the answers provided by the grand tour questions – the wording and structure of the questions were context-dependent. The mini tour questions also served as prompts under the typical grand tour questions, to further explore themes such as: approaches to environmental issues;

the balance between conservation, education and research; knowledge dissemination; ideas of symbolism; the influence of the global-local; growing environmental awareness amongst society; local planning issues; rationales behind, and practices of, restoration; environmental management techniques; and issues of nature and naturalness. The questions provided the opportunity to explore, clarify, explain, and amplify (Legard *et al* 2003) any statement proffered by the interviewee. The inclusion of such probing questions allowed interviewees to explain and elaborate upon their responses, and provide definitions of words that they use: 'native language'. Such meanings, or common-sense understandings of issues, could be taken for granted or misinterpreted if no further prompting or probing was offered. The mini tour question was fundamental to obtaining detailed understandings from the interviewees.

A non-probability sampling design was implemented – specifically that of purposive sampling – whereby the researcher's judgement replaced randomisation. Interviewees were selected for their direct relevancy to elements of the research. To a lesser extent, snowball sampling was employed, as interviewees recommended other project representatives to contribute to the research. In total, 61 interviews were conducted, with 29 across the principal case studies (13 at the Eden Project, nine at the National Forest Company, and seven at the Walden Woods Project). Interviews conducted at other projects and organisations were not so clustered, as respondents with knowledge in a particular field or on a particular issue were sought. Different departments within the projects were examined to widen the scope of environmental restoration concerns (see Appendix 3 for a list of interview respondents). The selection of respondents provided an extensive range of viewpoints and influences, and, to aid analysis, has been grouped under the categories of: community development (C), education (ED), finance (FI), history (H), land management (LM), landscape architecture (LA), planning (PL), project management (PM), science (SC) and senior management (M). Some project actors are not directly (or frequently) quoted in the following chapters, but the data collated from those interviews serves to provide a context and background for discussion.

With the majority of interviews conducted face-to-face, onsite (39), others were conducted by telephone (14), or through email communication (8), due to prior commitments. Email communication was used principally within the American case studies, with distance and the expense of out-of-state phone calls limiting factors.

Some of the interviews were integrated into walks around the sites, taking forward a 'walking and talking' approach advocated by Wylie (2005). Wylie's (2005) paper provides an account of a walk along a stretch of the South West Coast Path in North Devon, and engages with 'issues of landscape, subjectivity and corporeality'. As Wylie (2005:245) observes, "landscape might best be described in terms of the entwined materialities and sensibilities *with which* we act and sense". For this research, such an approach allowed for greater interaction with the landscape context, and through that, understanding and appreciation. Notes were taken throughout the interviews, supplemented with a recorded version, which was later transcribed. The intended interview length was prescribed as between 45 minutes to one hour, but in some cases it extended beyond this. No follow-up interviews were necessary, but respondents were invited to send further comments.

Visual Ethnography

A visual ethnography provided a medium through which to explore the 'nature' of the physical landscape, alongside environmental management techniques, and approaches to addressing environmental issues – particularly the mobilisation of environmental restoration discourses. Grounded in a social nature epistemology, it provided insight into how the socio-cultural construction of environmental concepts such as *nature*, *naturalness*, *wild*, *degraded*, and *restored* were played out on the ground.

A visual ethnography was important to this research, in light of verbal referents to images which appear in conversation: "People use verbal description to visualise particular moralities, activities and versions of social order (or disorder)" (Pink 2007:86). Through the interviews, reference could be made to particular places or actions undertaken, in order to reinforce or undermine a particular argument. A visual ethnography thus contributed authenticity (and a sense of authority), for it not only paired constructions with reality, but illustrated a reality beyond constructions. What is promoted is an ontological interest in the visual; representing what is visible.

This method of data collection is not without criticism, with contestation centring upon its ability to support the 'observational project of social science'; its 'subjective, unrepresentative and unsystematic' approach to data collection; and its validity with regard to 'subjectivity, bias and specificity' (Pink 2007). Many of the concerns surrounding the use of visual data – securing permission, issues of

anonymity, credibility – are not applicable to this research context, for the focus is upon the (cultural construction of the) physical landscape condition. There is a concern that visual ethnography loses out to the superiority attached to the written word within social science, but in this research context, it is fundamental, for it highlights the transfer of rationalisations of restoration into practice.

The visual data collated for this research comprised photographs taken by the author, at times supplemented by publicity literature from the case studies. During research placements at the Eden Project, the National Forest Company and the Walden Woods Project, numerous site visits were undertaken – sometimes accompanied by project representatives – with such visits providing the context for the visual ethnography. I was not 'out of place' taking photographs; instead appearing as simply another visitor to the sites. The collated material paralleled, and was representative of, the situation at the time of the research placements – providing a snapshot of the environmental condition. My approach echoed Schwartz (1989:152) who, through ethnographic photography, "attempted to construct 'a record about culture' (Worth 1980)"; and Pink's (2007) 'representations of *aspects* of culture' – with particular attention awarded to the relationship between context and content.

Within this research context, photographs were a medium through which to present social research (Schwartz 1989); and were subsumed within categories of both 'scientific-realism' and 'reflexive' (echoing Pink 2007) – that is, both *recording* and *interpreting* the landscape condition; highlighting different types of knowledge. Ethnographic photography presented a subjective representation, as the photographs were taken for research purposes. They represented a (the author's) point of view, and thus are not devoid of representation, ambiguity and bias, for they created subjective portrayals of nature, landscape and restoration.

The findings from the visual ethnography are presented through what Clewell and Aronson (2007) term Virtual Field Trips, photo-essays of various tracts of land within the case studies which illustrate arguments put forward by project actors, and which represent the physical, material mobilisation of restoration discourses.

Secondary Data Collection

Although not a major component of the research design, a range of secondary data sources was compiled over the course of the research placements. The material

comprised reports and literature produced both by and for the Eden Project, National Forest Company, and Walden Woods Project, alongside extracts from planning applications, and academic journal articles relating to the case studies. Internal development plans, policy documents and forward planning documents were critically examined to provide information on the backgrounds, developments to date, and future areas of development of each project. Moreover, the utilisation of a broad range of newspapers, television news and documentary programmes, and electronic media materials, allowed for analysis of external constructions of the projects. Documentary sources (especially plans, grant applications, bids, publicity) are more revealing of dominant discourses than interview data in many respects, as they formally put forward (or downplay) a project's position on (restoration) concerns. I also had the opportunity to draw upon and utilise resources from the Henley Library of the Thoreau Institute at Walden Woods, and the Concord Free Public Library, for further material relating to Thoreau, the (environmental and literary) history of Concord and Lincoln, and the development of conservation and restoration philosophies in the area.

Appendix 4 aligns the research questions and the findings and themes from the literature review (and thus the data required) with the methods discussed above, to highlight the purpose and intent of the research design.

3.2.4 Ethical Considerations

Prior to the commencement of any research in the field, it was a requirement of the School of City and Regional Planning that an Ethical Approval Form be submitted to the School's Ethical Research Committee. The form requested information on recruitment and consent procedures, possible harm to participants, and data protection; alongside an ethics statement, which noted that:

> The research poses challenges to anonymity to the extent that the case study projects (the Eden Project, the National Forest Company and the Walden Woods Project) are unique, site-specific, and easily identifiable; thus interviewees may be identifiable. Given this caveat, agreement will be sought to quote interviewees by name or position in the write-up.
> Although this data will be stored on a personal computer, it is password protected, thus safeguarding it as far as possible from access by an unauthorised party.

I wish to draw attention to some of those ethical considerations addressed within the form. As noted by the British Sociological Association (2002:3), there is a "responsibility on the sociologist to explain [to research participants ...] what the research is about, who is undertaking and financing it, why it is being undertaken, and how it is to be disseminated and used". I was fortunate during the research process not to encounter any ethical risks, but there were several issues that required consideration.

During the participant observation, the role of the researcher was specified to avoid deception or mistrust. However, as Howe (1953 in Vidich 1969:81) notes, "being both a participant and an observer is 'deceiving society to study it, and wooing the society to live in it'". Issues of access were also important, and through requesting access, advantage was not taken of the situation. Having previously undertaken research at the Eden Project and the National Forest Company, and a preliminary visit to the Walden Woods Project, I had already established my research role and presence, overcoming any concerns of access. The inherent secrecy of research also produced implications for informed consent – particularly in terms of how much information should initially be revealed. Furthermore, the research topic evolved during the placements: "in qualitative research the questions to be asked evolve during the course of the study and can differ from person to person. Further, with iterative design, who you are studying and the core topic of the research may emerge only after the work is well underway" (Rubin and Rubin 1995:95). Project actors had a minor role in shaping and refining the research focus, through suggesting other project actors and organisations to contact, as well as specific case studies to investigate.

In terms of the semi-structured interviewing, permission was sought to record the interview; there were no leading questions; and there was honesty about the intended use of the research. Research was based on trust, thus information was collected honestly and openly. There was continuous opportunity throughout the research for interviewees to withdraw, though this was never acted upon. To maintain anonymity, respondents are identified simply as [Project] representative ([Field]; [Project] Interview [number]).

With reference to the visual ethnography, concern surrounded the manipulation of data – in this instance, photographs. This is an increasing concern, given the proliferation of digital photography and associated software programmes.

While none of the photographs included in this research have been modified or altered, the claim made by Alexander (2001:345) remains valid, that "one image is picked from many. These acts affect what you see, as does the original choice of framing". The same concern is applicable to the interview texts, as the researcher selects those fragments of text to quote, to reinforce or counter particular claims. Linked to this issue is the content of the photographs. Any inclusion of people could be complicated by issues of informed consent. Subsequently, and perhaps to a degree deliberately, there is very little – if indeed any – human presence in the photographs. The main objective of the visual ethnography was to record the environmental condition at each of the case study sites, and thus the inclusion of people within the photographs was in most cases consciously avoided as an unnecessary addition. However, this may be interpreted as disconnecting nature from society, which was not the intent, and is a point I have argued against in the literature review.

3.2.5 Reflexivity

Issues of reflexivity will impact upon the research process and the creation of knowledge. For Alexander (2001:355), reflexivity "denotes a style of research whereby one addresses how the research process affects the results [...] it is research that looks back at itself". As Atkinson *et al* (2003:147) note, "the methods we use to describe the world are – to some degree – constitutive of the realities they describe". Social research is not detached from wider society, or the biography of the researcher (in this instance, particularly, my established connection with two of the case studies).

The theoretical focus – that of social nature – determined the trajectory of the research; and the research design and methodology were guided by the research problem. Data collection centred predominantly on semi-structured interviewing and participant observation, allowing the presentation of material from the (sole) perspective of project actors to highlight the construction and promotion of particular discourses of environmental restoration. Furthermore, the use of visual material – photographs – also required reflexive interpretation, as it is a *representation* and *reproduction* of a physical condition, with photographs constrained by the lens and framing by the researcher.

The research role assumed, and its subsequent portrayal, informed the quality of the research. As Rubin and Rubin (1995:116) suggest, "choosing between different

research roles does not mean you distort who you are, but rather you select those aspects of who you are that make sense in the world of the interviewee and that facilitate conversation". May (2001:154) points to a "'reflexive rationalization' of conduct: that is, the continual interpretation and application of new knowledge by people (including [researchers]) in their social environments as an ongoing process". It was important to acknowledge my positionality and relationship with project actors (as a researcher undertaking a research placement); and to allay fears over a 'crisis of representation' (Atkinson *et al* 2003) within this research. The 'crisis' refers to the questioning of the right and ability of ethnographers to represent the social world. Ethnographers can no longer be seen as directly capturing lived experiences, only different textual representations of different experiences. For this reason, a 'reflection theory' (Alexander 2001) was particularly relevant, mirroring social factors and ideas. The result has been to award greater awareness to the process of writing and particularly to the role of the self.

Reflexivity acknowledges the consequences of representing the words and practices of others, and has particular resonance for this research which has at its foundation the language used by projects actors in describing the rationales behind, and practices of, environmental restoration. As such, I aimed to be normative in my commitments – it was not possible to be neutral, distant, or emotionally uninvolved, due to the depth of understanding required to undertake qualitative research. Such positionality impacted on and informed the research process, for it required careful consideration of the phrasing of questions, comments, and arguments so as not to appear to readily support or refute any particular idea, or pre-determine a response.

3.3 Data Analysis and Interpretation

3.3.1 The Application of a Discourse (and Content) Analysis

The focus of this research is on the multiple and contested rationales of environmental restoration – the conditions, structures and processes informing terminology (and its subsequent application on the ground). That is, the (re)production and transformation of rationales into practice, and the meaning given to social and physical realities (Hajer 1995). As such, a discourse analysis is appropriate, and drawing upon the work of Hajer (1995:43), it is to determine "why a particular understanding of the

environmental problem at some point gains dominance and is seen as authoritative, while other understandings are discredited". Moreover, this research takes forward the strengths of discourse analysis identified by Hajer and Versteeg (2005:176): "the capacity to reveal the role of language in politics, to reveal the embeddedness of language in practice and to illuminate mechanisms and answer 'how questions'". As Rydin (2005: 77) argues, "Rather than calling for clarity of concepts, discourse studies saw how inherent ambiguities in concepts were fostered within the policy process to allow different discursive strategies to be adopted by different actors. [...] discourse studies saw the contested nature of multiple claims within policy".

The research interest lies with analysing 'different actors' perspectives and self-presentations' (Rydin 2005), linking individual use of language and discourses with wider socially-constructed discourses. In line with Hajer (1995), emphasis is placed upon 'discourse coalitions' or 'actor coalitions', that is, shared rationales enacted within particular domains. Analysis may also "[allow] one to see how a diversity of actors actively try to influence the definition of the problem" (Hajer and Versteeg 2005:177). As my research focuses on the interpretation and mobilisation of restoration discourses, it is apposite to focus on 'producers' of restoration, to marry definition with action on the ground. It is for this reason that particular attention is awarded to relatively elite discourses – those formulated within the case study projects, both for internal consumption and external audiences. It is 'linguistic regularities' and 'language-in-use' which is important – "it is not an environmental phenomenon in itself that is important, but the way in which society makes sense of this phenomenon" (Hajer and Versteeg 2005:176), granted the social construction of discourses. Linguistic, identity and knowledge base factors are thus considered (Feindt and Oels 2005). The research is concerned with the capacity of language to shape views and actions; "to make politics, to create signs and symbols that shift power balances, to render events harmless or, on the contrary, to create political conflict" (Hajer and Versteeg 2005:179). Moreover, as Rydin (2005:76) suggests, "the discursive ambiguity of concepts, etc can play an important role within policy processes. It can enable alliances to be built, shifts in policy to be justified, lack of action to pass without comment. [...] Policy processes actively use discourses of ambiguity to manage conflicts". As the literature review suggests, this may apply to the representation of restoration.

Analysis also focuses upon wider contexts, for as Milbourne *et al* (2008:617) argue, "meanings, practices and outcomes [...] are dependent on sets of local economic, socio-cultural, political and environmental systems"; with discourses explored through 'lay, local, experiential or embedded' knowledge(s) (Rydin 2005). Discourses are intertwined in social processes, and for Dingler (2005:212) "relations of power must play a crucial role in the formation of discourses". Dingler (2005:213) goes on to argue that "discourses are both the product of power and imbued with power. [...] social constructions generated in a discourse are the effect of power relations". As an element of power formations, discourses also incorporate bias (Feindt and Oels 2005). Thus, issues of *content* and *context* are fundamental. Murdoch's (2004:51) understanding of issues concerning discourse serve to inform this research, of "the means by which discourse achieves the *effective coordination* of actors distributed in time and space; the *materiality of discourse* or the way discursive repertoires become embedded in heterogeneous alignments of people and things; and the *geography of discourse* in which repertoires and their associated alignments develop in spatially uneven forms".

The scaling of discourse is also significant, for as Rydin (2005:74) argues, "The ability to understand the locally embedded but also see it in the multi-scalar and cross-territorial context is a strength of geographical policy studies". The work of Milbourne *et al* (2008) echoes such a claim, through analysis of the spatial complexity and unevenness inherent in the emergence (and indeed repositioning) of a new (post-industrial) forestry regime. Furthermore, Keil and Debbané (2005:262) point to the fact that "interscalar relationships are strategically important in articulating an alternative politics of socio-ecological change".

Discourse analysis is not without fault, however, and awareness must be awarded to the fact that it is an incredibly selective technique, guided by certain (research) questions. Particular contexts may be overlooked, and yet the significance of texts is acquired through their context. In addition, the exact meaning (content) of a statement, grounded in its wider context, is often indeterminate – complicating the capacity of discourse analysis. Problems also arise when the aim is to impute latent rather than manifest content.

In light of the above, albeit brief, discussion, and thus having set the context for the application of a discourse analysis within this research, attention now turns to

the discourse analysis itself. 'Discourse' was explored at both a micro and a macro level – not only is the interest *within* particular discourses, but also *across* multiple and contested discourses. As the focus was upon language, a discourse analysis was applied to the data collated through the field journals, interview transcripts and documents and reports. The purpose was to analyse, as Fairclough (2003:9-10) argues, "the effects of texts in inculcating and sustaining or changing ideologies [...] the interactive processes of meaning making". Attention was also awarded to issues of intertextuality and recontextualisation, alongside assumptions and presuppositions made throughout the texts (Fairclough 2003) – both social structures, practices, events and agents, and semantics, grammar and vocabulary.

* * *

It is important to note, however, that such an analytic approach was not transferable to the visual ethnography element of this research, where a content analysis was instead advanced (Pink 2007; Alexander 2001). The interest in the ethnographic photographs lay with what was represented, and through that, with what could be inferred and interpreted. In line with Pink (2007:119), "the purpose of the analysis is not to translate visual evidence into verbal knowledge, but to explore the relationship between visual and other (including verbal) knowledge"; and as such, "images and words contextualise each other, forming not a complete record of the research but a set of different representations and strands of it" (Pink 2007:120). Pink (2007:118) also notes the importance of "scrutinizing the relationship between meanings given to photographs and video during the fieldwork, and academic meanings later invested in the same images". Organised both chronologically and thematically, the analysis of the photographs drew upon the coding system discussed in the following section.

3.3.2 Qualitative Data Analysis and NVivo 7

Conducting computer-assisted qualitative data analysis (CAQDAS) was favoured over a manual approach, in large part due to the quantity of material collated. Importantly, though, such software was employed as it could, (*once* the coding was complete), provide a more rigorous analysis, by pulling together 'every coded instance of a concept' (Bazeley 2007). Such an analytic approach also allowed for the testing of various ideas, "maintain[ing] an easy contact between the ideas and those parts, while

allowing an overview of the whole" (Lewins 2001:303). As Bazeley (2007:3) also notes, "Perhaps using a computer simply ensures that the user is working more methodically, more thoroughly, more attentively". There are, however, criticisms rallied against CAQDAS, principally: "that computers can distance researchers from their data; the dominance of code and retrieve methods to the exclusion of other analytic activities; the fear that use of a computer will mechanize analysis, making it more akin to quantitative or 'positivist' approaches; and the misperception that computers support only grounded theory methodology, or worse, create their own approach to analysis" (Bazeley 2007:8).

The decision to use one particular programme – NVivo 7 – was largely determined by the fact that colleagues in the School had experience with an earlier version; in addition to the presence of the programme across the University network[22]. The use of software was dependent upon the data being analysed, and on the proposed analytic outcomes. The decision was made early on in the analysis to use NVivo for the sole purpose of analysing the interview transcripts, as this constituted the most important component of the research. The analysis of documents and reports; field journals from the participant observation; and material collated from the visual ethnography were instead analysed through a 'long table approach' (Krueger and Casey 2000). Although this may appear an odd distinction to make, perhaps detrimental even, it was appropriate for this author, as much of the material was not easily transferable to the NVivo software, and NVivo offered only limited functions for the analysis of visual material. The theoretical literature could also have been included within the NVivo analysis, but this was also rejected. The interview transcripts provided the foundation to the analysis, and as such, received detailed

[22] However, I had never before used a CAQDAS programme, and consequently had to delegate enough time to first learning the details of the software, and then put into practice the techniques learned. Much of this was done independently, for even though introductory courses for the programme existed, the scheduling of them clashed with my research placements. I was able to attend a workshop which provided a general overview to a range of software programmes, and proved valuable, but it was not scheduled until I was already two months into my analysis. The follow-up session, with an opportunity to use one's own data, was not scheduled until the end of the period I had delegated for data analysis. Consequently, these events reinforced the awareness and humility that was necessary in using the software: "human factors are very much involved, and computer software cannot make-good work that is sloppy, nor compensate for limited interpretive capacity. As much as 'a poor workman cannot blame his tools', good tools cannot make up for poor workmanship" (Bazeley 2007:3). However, granted the constraints put in place by my research timetable, I am confident in my implementation of the necessary techniques proffered by NVivo for this research.

analysis. That is not to say that any other research collected was not comprehensively analysed, instead, it required a different approach.

The coding system adopted for this research was grounded in the creation of *a priori* (theoretically-derived) codes, that is, developing a list of concepts from the research questions (and theoretical literatures) (for reference, see Appendix 4) and from the Interview Schedules (Appendix 2A and 2B). Following the transcription of each interview, hard copies of the transcripts were annotated, and this provided the foundation for the coding system when the transcripts were imported into NVivo. Bazeley (2007:76) notes the benefit of beginning the analysis with a pre-defined list of themes, concepts and categories, "knowing that you will need a node for each concept in order to gather (and then relate) data about them". As *a priori* coding can sometimes restrict and confine the reading of a text, an awareness of flexibility was required. Such flexibility was evident in the coding process, for *in vivo* (indigenous) codes were also created – those derived directly from the data (Strauss 1987), reflective of the language of the participant, thus overcoming the problem.

The NVivo software was utilised primarily to code (and retrieve) the data, allowing the data to be viewed, and subsequently analysed, by theme rather than by respondent. The software was also used to, as Coffey and Atkinson (1996:166) suggest, "examine textual and semantic features of [the] data, aiding in the construction of vocabularies, folk taxonomies, and narrative form and content". Sets were created within the data – grouping all Eden-relevant, NFC-relevant and WWP-relevant data, and data relating to definitions – to allow for further comparison and cross-examination. In addition, a series of queries were designed, to highlight any connections across the data (and avoid repetition). Two types of query were used: (i) a text search, to identify common language and terminology; and (ii) a coding query, to compare two nodes, or explore the prevalence of a node within a particular set. Such analysis contributes to 'explanation building' (Yin 2003); code-based theory building.

* * *

Relating the emergent nodes back to the pre-defined research questions facilitates the identification of preliminary connections and linkages between the nodes, and provides a foundation from which to begin further exploration and querying of the data. Appendix 5 presents the codes (nodes) that have been created, and how they

relate back to the individual research questions. Several nodes were generated, but flexibility was required: some were discarded, subsumed into other nodes, or modified. Three key themes materialised through the analysis, later providing a structure for the analysis chapters. As a consequence, Chapter Five addresses the social nature of restoration schemes (research question I); Chapter Six explores the interpretation and mobilisation of restoration discourses and wider environmental meanings (research questions II and III); and Chapter Seven explores the politics bound up in restoration schemes, and the intensity of networks and collaborations (research questions IV and V). However, preceding this, the following chapter – Chapter Four – provides an overview of the development of the case study projects, to establish a context for the subsequent analysis of restoration discourses.

CHAPTER FOUR

Context: A Massachusetts Pond, a Cornish China Clay Pit and an English Midlands Forest

4.1 Introduction

It may at first appear unusual that the case studies selected for this research encompass a Massachusetts pond, a Cornish china clay pit, and a forest in the English Midlands. None of the projects – the Walden Woods Project, the Eden Project, and the National Forest Company – are solely and explicitly concerned with 'restoring' the landscape, yet what they have done, and indeed are doing, is incorporating (to various degrees) rationalisations and practices of environmental restoration within their missions. With an ongoing and increasing global interest in the status and composition of environmental restoration projects and programmes, it is recognised, particularly within the UK, that these projects are leaders in their own right.

4.2 The Walden Woods Project | Lincoln, Massachusetts

What began as a two-year sojourn on the shores of a pond in rural Eastern Massachusetts in 1845, and ended in 1854 with the publication of a text of the endeavour, is credited with helping to garner respect for, and awareness of, the natural environment in North America. Henry David Thoreau's two years, two months and two days' residence at Walden Pond (July 1845 through September 1847) and his book *Walden* (1854) have become synonymous not only with this part of New

England, but also with environmentalism more generally. It is very hard – nigh on impossible, even – to talk about Walden Woods without some reference to Henry David Thoreau. His 1854 account has become one of the most influential books in American literature. An experiment in living simply, Thoreau stated "I went to the Woods because I wished to live deliberately, to front only the essential facts of life. And see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived" (Thoreau 1854 [2004]:90).

Walden Woods[23], (or to use the terminology of Schofield (1989), the 'Walden Ecosystem'), is defined as a "2,680-acre (1,000-hectare or ca. 4-square-mile) tract of woodland, wetland, and other habitats lying east of the Sudbury River in the contiguous towns of Lincoln and Concord, Middlesex County, Massachusetts…About 1,500 acres lie in Lincoln, 1,180 acres in Concord"[24] (Schofield 1989) (Figure 4.1).

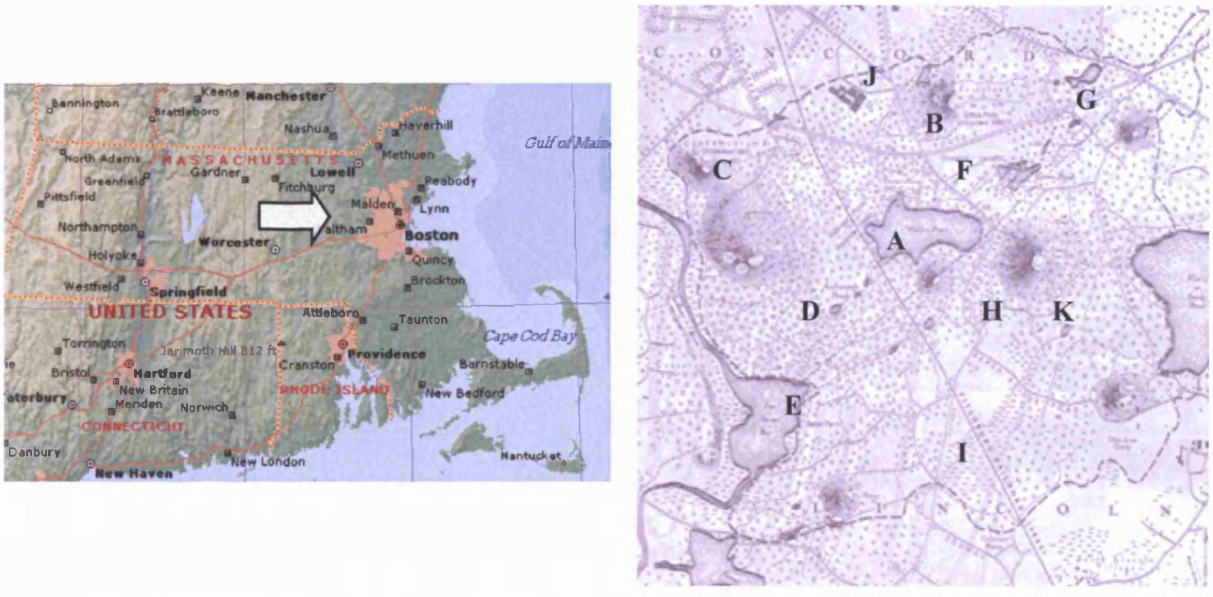

Figure 4.1 | The location and boundary of Walden Woods; A: Walden Pond, B: Brister's Hill, C: Bear Garden Hill, D: Andromeda Ponds, E: Fair Haven Bay, F: former Concord landfill, G:

[23] 'Walden Woods' was not an ecologically defined (and recognised) area until the late 1980s – the result of an effort to change the long-term view and equally ingrained attitude towards the Walden woodland, pond, and associated catchment as wasteland; based on geological and geomorphological features (Schofield 2002, 1989). The term previously favoured to describe the area was simply 'Walden Pond'. Despite this, "Walden Woods was a concept and term in common currency in Concord throughout the nineteenth century and in the first half of the twentieth century, and grew to be and remains today a familiar term among readers of the Concord authors and chroniclers of Concord history; Walden Woods stretches over a clearly identifiable area of the towns of Lincoln and Concord […] and numerous literary and historical references help to substantiate the boundaries of Walden Woods as determined by the geology and ecology of the area" (Blanding 1988:4). Walden Woods is an integrated literary and ecological unit; with natural and cultural resources observed and recorded by Thoreau.

[24] The entirety of Walden Pond lies within the Town of Concord boundary.

Route 2, H: Route 126, I: MBTA Fitchburg Line, J: Concord-Carlisle Regional High School, K: Walden Woods Project (Source: FOTC 2008; Encarta 2007).

A concern for the fate of the land fundamental to Thoreau's writing is not a new phenomenon. The significance of the land (and particularly that abutting Walden Pond) was formally recognised in 1922 with the Deed of Gift from the Emerson, Forbes, and Heywood families, leading to the formation of the 411-acre Walden Pond State Reservation. The land deeded to the Commonwealth of Massachusetts (and later assigned to Middlesex County) was:

> "...to aid the Commonwealth in preserving the Walden of Emerson and Thoreau, its shores and nearby woodlands, for the public who wish to enjoy the pond, the woods [and] nature..." [In the deed of gift, this sentence went on to say: "...including bathing, boating, fishing and picnicking"] (*Concord Journal*, 18 July 1957).
>
> (Wheeler 2005:197)

In the late 1980s, developers proposed to construct an office building and a condominium complex on two sites of historic and ecological significance in Walden Woods, threatening the integrity of the landscape which had inspired Thoreau. The area known as Bear Garden Hill was to be the site for the Concord Commons Apartment Complex, whilst Brister's Hill was designated for the Concord Office Park. The Walden Woods Project was spearheaded in 1990 by recording artist Don Henley in response to the proposed development of the land. In the years preceding the establishment of the WWP, many other groups were striving to preserve this historic literary landscape, and laid the foundation for the Walden Woods Project – each with different narratives of 'threat' and 'conservation'. Chief amongst them were the Save Walden Committee (an extension of the Thoreau Society, campaigning against the Middlesex County Commissioners' 1957 expansion program to accommodate more swimmers), Walden Forever Wild (seeking, in the 1980s, to close Walden to recreational use and preserve it as a literary shrine), and the Thoreau Country Conservation Alliance (primarily opposing the proposed development of Bear Garden Hill and Brister's Hill in the late 1980s). As one respondent[25] (H/SC, FOTC Interview 1) notes, "The big breakthrough for those who wanted to preserve Walden in the

[25] Previously a member of TCCA, and credited with creating the term 'the Walden Ecosystem' through research into the history and ecology of the Walden Woods area.

wider sense – Walden Pond, Walden Woods, the symbol of Walden – came with the realisation that both developments were in *Walden Woods*".

Whilst the Walden Woods Project is not the first project to attempt this challenge, it is certainly the most successful. A conservation project aiming to protect the landscapes of Walden Woods, it recognises their global literary, historical and environmental significance, and their capacity to motivate others to identify, study and restore/protect landscapes. Its mission states: "the Walden Woods Project preserves the land, literature and legacy of Henry David Thoreau to foster an ethic of environmental stewardship and social responsibility. The Project achieves this mission through the integration of conservation, education and research" (WWP 2007d).

The Walden Woods Project acquired the two sites endangered by development – Bear Garden Hill in December 1990 and Brister's Hill in July 1993 – thereby ensuring their permanent protection. The Project has protected nearly 140 acres of land surrounding Walden Pond. Figure 4.2 illustrates the ownership of conservation land within Walden Woods and the surrounding area.

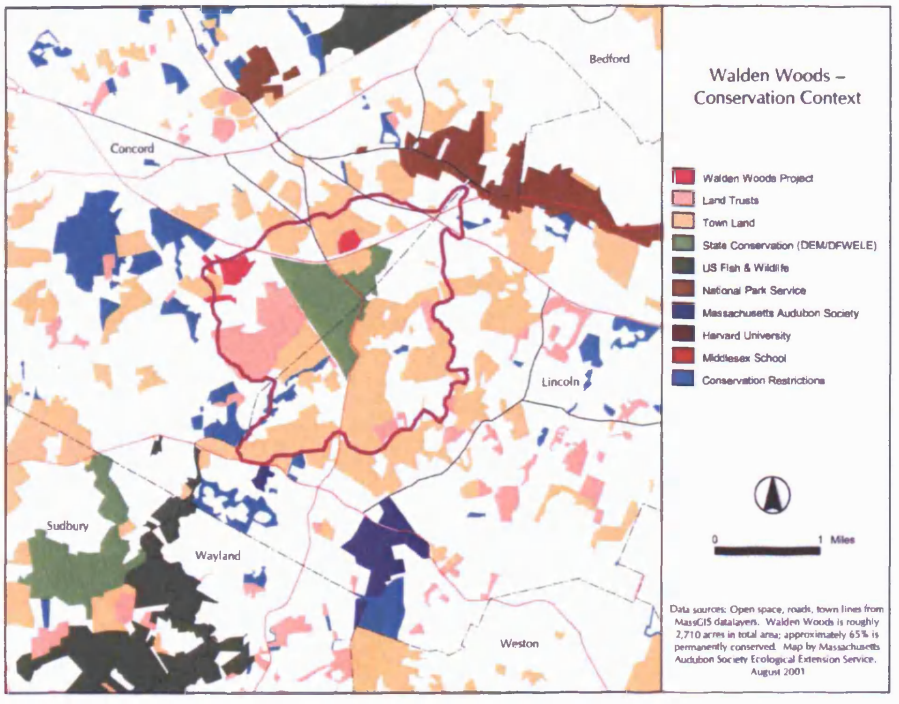

Figure 4.2 | The Walden Woods conservation context (Source: Burne/WWP).

However, whilst 65 to 70 per cent of Walden Woods is now set aside for conservation (largely through the Walden Pond State Reservation designation), environmental threats remain, exemplified through incompatible commercial development, the

expansion of a nearby airport, and the long term use of a 35-acre former landfill site in the heart of Walden Woods; parallel to the continuing acquisition of sites. The Walden Woods Project is a non-profit organisation (with 501(c)3 status), and whilst funding for the Project has primarily been achieved through fundraising efforts, donations are also a major constituent.

The challenge facing the Walden Woods Project is also its biggest opportunity:

> And so, if we can do it here, that gives people in other communities hope that they can do it as well. But we must do it here, because if we can't preserve the original place that inspired the American environmental movement, how can we expect to preserve all the other places around the country and around the world?
>
> (Henley 2003 on WWP 2003)

One can argue that there is nothing unusual or spectacular about this segment of New England's landscape, so why should it continue to attract so much attention over 150 years later? The significance of Walden Woods is best summed up thus:

> *That Walden is a humble place – an ordinary pond, a plain New England wood – is exactly the point.* Thoreau made himself an Everyman, and chose Walden for his Everywhere.
> [...] We need both Waldens, the book and the place. We're not all spirit any more than we are all clay; we are both, and so we need both – as in: You've read the book, now see the place.
> You have to be able to take the children there, and to say "This is it, this is the wood Henry wrote about. You see?" You give them what is rightfully theirs, just as you give them Gettysburg because it is theirs.
> But in fact you don't even have to see the place as long as you know it's there and it looks much as it looked when he was cutting the young white pines for his house. Then it is truly meaningful in spirit and in clay – like us, and like the world invisibly charged with our idea of it.
>
> (Doctorow 1991:38; emphasis added)

4.3 The Eden Project | St Austell, Cornwall

Located near St Austell, Cornwall, the Eden Project is situated within the former Bodelva china clay pit. The pit was bought in 1998, when it had reached the end of its working life; and opened as the Eden Project in March 2001. The Project is an amalgam of several different ideas, all playing out against the backdrop of a former china clay pit. In its most objective sense, Eden strives to address, through innovative landscape and structural forms, man's dependence on plants. Yet that does not begin to explain the multitude of arenas in which Eden now engages.

The Eden Project is a post mining regeneration scheme, and is presented as a symbol of regeneration and of a pioneering forum for the explanation of possible futures. It highlights the reuse of land in an environmental capacity after it has outrun its commercial viability through mining.

There were two primary drivers to the development of the Eden Project: (i) an interest in education about the natural world and people's dependency on it, and (ii) the economic challenges facing the region – the declining china clay industry, and Cornwall's status as an Objective One area. The china clay pit location was fundamental to the Project's mission – a major component of Eden is concerned with reusing (and thus *restoring* a function to) a disused landscape. The pit provides the opportunity to develop new built and 'natural' environments on a site disguised in the wider landscape, and promote sustainable development. Land Use Consultants (2003: 103) identifies the site as an "ideal opportunity for new and built development to incorporate innovative design and the use of non-traditional materials". Smit (2002: 170) goes on to note, "We wanted them first to be awestruck at the sheer bravura of the architecture and landscape design, and then, all cynicism put aside for a moment, wonder why we did it"; offering a contrast to the 'humble place' of Walden Woods.

The landscape of Eden is composed of a Humid Tropics (Rainforest) Biome, a Warm Temperate (Mediterranean) Biome, and an Outdoor Biome; alongside the Core, Eden's exhibition and learning centre (Figure 4.3).

Figure 4.3 | The location and landscape of the Eden Project (Source: Eden Project 2007; Encarta 2007).

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The Eden Project (owned by the Eden Trust) is a charity, and is run as a not-for-profit educational trust. The Project is operated on behalf of the Trust by Eden Project Ltd (EPL), a wholly owned subsidiary of the Eden Trust. What was initially marketed as a 'living theatre of plants and people' has morphed and evolved into a project aiming to "become the world's leading environmental forum for environment and social change as well as being a pioneer in the field of public education and engagement" (M, Eden Project Interview 9).

In March 2009, the Eden Project celebrated its eighth birthday; but its development extends to nearly a decade earlier. Inspiration for the Eden Project grew out of another Cornish endeavour – the Lost Gardens of Heligan. It was during the restoration of the Victorian gardens of the Heligan Estate that the idea evolved for what would later become Eden. Upon realisation that the confines of Heligan's gardens were too tight to exhibit all the plants envisaged, and tell all the stories associated with them, the search began for a site where this could be realised.

The Eden Project, in its eight years since opening, has welcomed in excess of eight million visitors, attracted over £700 million into the local economy, employs over 450 staff, and boasts the tallest rainforest 'in captivity'. Although the Eden Project evolved out of the work undertaken at the Lost Gardens of Heligan, at the same time, the 'fallout' from the 1992 Rio Earth Summit also had a part to play, particularly with regard to sustainable development. The early formulation of an 'Eden Project' also coincided with the launch of the Millennium Fund in 1994 – an initiative designed to part-fund innovative projects to mark the Millennium. Eden is one of the Millennium Commission Lottery-funded projects, as Smit (2002) notes:

> The Millennium Commission was charged with choosing twelve Landmark Projects with a maximum MC contribution of £50 million per project, or 50 per cent of total costs, whichever was the lower. This appeared generous, but the stipulation that each project had to find half its costs from elsewhere would have serious consequences, as a feverish competition to find the matched funding would leave managements concentrating on fund-raising rather than developing their plans. [...] the Millennium Fund was an ideal target. What could be more millennial than a project dedicated to the portrayal of human dependence on plants?
>
> (Smit 2002:65-66)

Eden received a conditional grant from the Millennium Commission (£37.5 million, and subsequent contributions bringing the total to £55 million) (Eden Project

2006c), dependent upon securing matched funding. Funding was a ratio of 50 per cent Millennium Commission funding, 30 per cent European and regional regeneration funding, and 20 per cent bank loan (the last something no other Millennium Project received). To date, the Eden Project build has cost £133 million. It is important to note that during the initial stages of the Project's development, organisations were working for the Project at risk until funding was secured. As Smit (2002:102) notes, "bearing in mind that no one had ever done anything like this before, the act of faith that enabled so many people to sign up to Tinkerbell Theory was a testament to the spirit of Eden taking hold".

4.4 The National Forest Company | Moira, Derbyshire

The development of the National Forest can be viewed as the material outcome of a rethinking on forestry in the UK. The conception of the Forest can not only be traced back to the 1987 policy document *Forestry in the Countryside* (Countryside Commission 1987), but also to broader issues: the over-production of food, set-aside of agricultural land, biodiversity loss from the countryside, and a major push for more countryside recreation close to urban areas. Another key influence was the 1992 Earth Summit, where the Government made a commitment to improving the environment.

The Forest was conceived in 1987 by the then Countryside Commission; and the National Forest Company was established by Government in 1995. The idea of the National Forest was born in a programme with sister projects the Community Forests[26] – there was a view that there should be a national exemplar of multi-purpose forestry in the heart of the country. The National Forest extends over 200 square miles, and spans three counties – Staffordshire, Derbyshire and Leicestershire. It encompasses towns and villages, farmland, a former coalfield, and connects the ancient woodlands of Needwood and Charnwood (Figure 4.4).

[26] There are twelve Community Forests within England, developed in 1990 through the England Community Forest Programme (a partnership between the Forestry Commission, the Countryside Commission and local and national organisations). Located in and around major urban areas, the Community Forests were to demonstrate the potential contribution environmental change could make to socio-economic regeneration.

Figure 4.4 | The location and boundary of the National Forest; A: National Forest Company, B: Conkers Discovery Centre, C: Sence Valley Forest Park, D: Ashby Canal, E: Poppy Wood (Source: NFC 2008i; Encarta 2007).

Initially, five areas competed to host the National Forest, and the final site selection was the result of several factors. Primarily, it was due to a low percentage of tree cover (six per cent, compared to a national average of eight or nine per cent), and land uses in the area (there were over 500 ha of derelict land, and 2500 ha of mineral workings). Three lesser factors can also be identified. The first concerns centrality and accessibility – it is a suitable location for a 'national demonstration project'. Additionally, there is a large population within, and surrounding, the Forest 'boundary': there are 10 million people within one hours' drive, and 29 million people within two and a half hours' drive. The second factor relates to physical, and thus socio-economic, need. There was extensive dereliction present in the heart of the Forest area; in the former Derbyshire-Leicestershire coalfield. 25 per cent of all derelict land in Leicestershire is concentrated in two or three square miles in the Forest. There is a legacy of deep mining, and more recently opencast mining. Socio-economic problems were instigated through the parallel decline, from the 1970s onwards, in traditional extractive activities, and the associated manufacturing industry. The final factor encompasses the degree of community support for, and involvement in the Forest, especially in Leicestershire.

The National Forest Company, sponsored by the Department for the Environment, Farming and Rural Affairs (Defra), is a company limited by guarantee and a non-departmental public body. The Company receives grant aid from Defra of about £3.7

million per annum, of which £2.7 million is spent directly on forest creation. The NFC was also eligible for Rechar funding between 1995 and 2001, alongside landfill and aggregates taxes, and Lottery funding. The Company is now entering a phase where it is beginning to attract funding from outside sources to replace mainstream grants.

The Company is responsible for implementing the (Government-approved) National Forest Strategy (NFC 2004b), a document outlining the development of the Forest (currently, for the period 2004-2014). The Strategy sets out the proposed development of the National Forest over a 10-year period, with particular regard to forestry; landscape; biodiversity; access, recreation and sport; historic environment; community participation; regeneration and the economy; agriculture; tourism; mineral workings, landfill sites and derelict land; planning; transport and traffic; and research and monitoring. Underlining these issues are the broader themes of social inclusion, community engagement, sustainable development, maintaining quality and marketing.

However, the National Forest is not a statutory designation (nor is the Strategy). When the National Forest site was designated, woodland cover was at six per cent. At present, the figure stands at a little over 17.5 per cent (with more than seven million trees planted), with an eventual target of 33 per cent. A 'forest in the making', the NFC attempts to convert 400 to 500 ha a year, and this underpins the rest of the work undertaken by the Company:

> The Forest will create a major new wooded environment with new trees and woodlands ultimately covering around a third of the area. The strategic importance of forestry cannot be overstated. It is important in its own right as a means of creating rich new landscape and wildlife habitats; stimulating a new woodland-related economy; being a focus for recreation, tourism and community involvement; and in contributing to global environmental objectives, such as reducing carbon dioxide in the atmosphere.
> Forestry is also creating a major new structural framework for all the other land use activities in the area. This is resulting in a vastly improved environment for people living in the area, for business investment and visitors spending their leisure time here.
>
> (NFC 2004b:7)

Thus far, over 5,000 ha of land have been brought forward for *Forest-related uses*. Some of the woodland schemes have as little as 50 per cent tree cover, and individual sites can be a mosaic of habitats.

CHAPTER FIVE

The Socio-Natural Constituents of Restoration

5.1 Introduction

Well, virtually nowhere in the UK is wild; it is all constructed.
(PM, Eden Project Interview 10)

We are not talking about pristine landscapes, but people as part of the landscape.
(LA, Eden Project Interview 5)

By their very nature, rationales and practices of environmental restoration are context-embedded: restoration efforts (and indeed successes) are characterised by, and defined within, site specificities and scalar (as well as temporal) interactions. As one respondent (LA, LUC Interview) acknowledges, restoration has 'a purpose at a particular time in a particular place'. As such, the nature-society relations bound up in the development of restoration schemes are issues which come to the fore in determining the uptake, interpretation and mobilisation of restoration discourses by environmental projects. This chapter explores the wider context of the case studies, particularly, the degree to which restoration practices are embedded in localities, as well as issues of landscape quality and the integrity of the landscape. The contribution made by land use planning issues, and the politics of conservation in guiding restoration practices are also considered. In light of these factors, particular attention

is awarded to how rationalisations of restoration integrate and promote nature-society interactions.

The nature(s) of restoration discourses is perhaps now more relevant than ever before. Through land use planning discourses and associated restorative actions, we learn that the so-called myth of superabundance is just that, a myth (see especially Udall 1963). What is required is a reduction in demand for ecosystem goods and services, paralleled with an increase in supply through the restoration of natural capital. Environmental restoration discourses are rationalised as not only easing environmental degradation, but also strengthening the connection between nature and society; and through that, we understand nature as a socio-cultural construct. It is this political (and politicised) argument which features prominently throughout this thesis.

5.2 The Context-Embeddedness Inherent in Restoration

Granted that the wider environmental context underpins and informs environmental restoration endeavours, it is unsurprising that "*site* will be one of those overarching themes" (ED/LM, Eden Project Interview 12), with regard to understanding, and subsequently implementing, restorative practices. However, sometimes simply being able to conceptualise space and place is the issue. Each of the case study sites introduces a different level of scale into the debate (see Milbourne *et al* 2008): the National Forest Company operates within 128,000 acres (51,840 ha), the Walden Woods Project within 2,680 acres (1,085.4 ha), and Eden Project land encompasses 224 acres (89.6 ha). The potential of restoration will be impeded if first the ecological reality is not realised. Within the National Forest, a NFC representative explains:

> As an example, we had one group of children out here who didn't understand 'view' as a concept; they had never come across it before. They didn't know what an 'open vista' was. And we had another woman with us translating Punjabi for a group, and she didn't know the meaning of 'woodland'. Believe it or not, we've even had kids thinking they may see tigers in the Forest. Some children just could not place other places – they arrived in Burton-on-Trent and thought they had arrived in London.
>
> (C, NFC Interview 9)

A similar situation is affecting RESTORE The North Woods, in Maine:

> Maine, for people in Massachusetts, is a long way away. So they are not really directly connected. The Maine Woods are a sort of forgotten land; a private domain for the timber companies, almost. Most people have never

> been. And yet Yellowstone – everyone has at least seen pictures of it. Many people in New England even have not been to the Maine Woods.
> (M, RESTORE Interview)

Although the practice of environmental restoration draws upon its immediate context for direction, it is equally important to look beyond the locale, for as one respondent (PL, Sasaki Interview) notes of Walden Pond: "It was never Katahdin"[27]. The social construction of ideas of space and place is fundamental to restoration: cultural constructions are acutely site-specific, applying dominant meanings to areas, but are not necessarily *proportional*. They may often appear so, or be represented as such, and materially are embedded in localities, but *their rationalities might be less confined*. Rationalisations of practice may combine the local and the abstract in varying ways. Taking the National Forest as an example, a NFC representative[28] (PL/LM, NFC Interview 4) points out, "You can take attractive photographs in the National Forest about places to go, but they are contrivances; and they have to be fairly intimate photographs" – based on the infancy of the Forest and thus the absence as yet of a strong, consistent landscape. Places are not only experienced at the local, micro level, but also at a landscape, macro level. Setting aside the literary significance, Walden Pond is a popular location for recreation – located only 25 miles from Boston, it is the deepest natural body of water in Massachusetts.

In terms of reading the landscape, and acting on such taxonomy, Thoreau penned the phrase 'Easterbrook county', which later led to the name Estabrook Woods, with the Easterbrook designation appearing in his journals. More recently, the construct 'Thoreau Country' describes those areas visited and written about by Thoreau: Concord, Lincoln, Walden Woods, Estabrook Woods, Mount Wachusett, the Maine Woods, and Cape Cod. Indeed, an academic recognition of 'Walden Woods' later lead to the establishment of the Walden Woods Project.

Discourses of environmental restoration inevitably mediate between different attachments to, and perceptions of, space and place; fostering and reinforcing some, downplaying others. As evidence of this, one respondent (LA, WPBOD Interview)

[27] For Thoreau, the wildness and naturalness of Walden Pond was re-assessed in light of an excursion to Mount Katahdin, Maine, in 1846, recounted in *The Maine Woods* (1864). Drawing a comparison between Concord and the Maine Woods, Thoreau (1864 [2004]:152) notes of Maine, "There you are never reminded that the wilderness which you are threading is, after all, some villager's familiar woodlot, some widow's thirds, from which her ancestors have sledded their fuel for generations".

[28] Overseeing the grants programme within the National Forest, in addition to land acquisition, site development, external funding bids, and partnership working.

notes that while Walden Woods is a literary phenomenon, "it's not an island of landscape distinct from the community that it's part of". As Blanding (2002 in Maynard 2005:333) also acknowledges, "if Walden is disappointing, that is because Walden is true. It shows where our society stands in relation to nature. Walden Woods is a symbol of equilibrium between nature and society".

The issue of (perceived) land ownership also has repercussions for the geography of space and place, and thus the latter's influence on restoration. Once a specific (minority) interpretation of the landscape materialises, applying any form of environmental management seen to contradict that view becomes much more difficult. This is borne out by an example at Walden Pond. Erosion around a segment of the shore created an area known as Sandy Point, which was informally adopted by a group of regular visitors. When shoreline restoration began, the group opposed the work, ignoring changes in access to the water, and in some instances even uprooting new planting. For one Walden Pond State Reservation representative (LM, WPSR Interview 1), "they were trying to make it into a beach again, but it was destroying the very area that you want to use". Particularly where there is daily use of a landscape, restoration practices strive to be an ongoing, malleable process, linking past and present (even future) demands of the site. Practices are framed by specific issues or perspectives of the community using the land in question.

Numerous demands on the landscape will define the context for environmental restoration. As another WPSR representative (LM, WPSR Interview 2) notes of Walden Pond, "It's all the demands that are on this place; from the passive recreator to someone who wants to take scuba gear out there and look for artifacts. It's incredible the number of people that are here; that pretty much have kind of their own agendas". In a similar vein, changing land uses in the National Forest pose a challenge for the NFC – a knock-on effect of the creation of the Forest is that the area is now wealthier, with increased pressures on the land, be it through development or lifestyle changes. Land is at much more of a premium in the Forest: where once land may have been transferred from agriculture into woodland, it is now presented for development. As the percentage of available land shrinks, it may become harder for the NFC to achieve the remaining woodland cover proposed in the National Forest Strategy (NFC 2004b).

Linked to land use is the issue of marginal land. Walden Woods was oft constructed as a marginal landscape; a refuge for marginalised people[29]. Marginality is a theme also explored through the Eden Project: "It's actually *huge* for something like this to be down here [in Cornwall]; it's massive, considering how remote we are, how peripheral" (SC, Eden Project Interview 3). Location can be a blessing in disguise, but also a limitation, when the problems associated with rurality (particularly for these case studies) are factored in. Affected marginal lands could be considered as a prime test bed for restoration efforts, granted their previous exploitation. Yet what emerges is an interesting paradox in the metabolism of restoration, to the extent that it often begins by utilising marginal land and incorporates a restoration rationale but, if successful, rising land values undercut the cheaper land on which it depends (see Cowell 1997).

The significance and influence of a landscape on society should not be underestimated (as explored in Braun 2002; Cronon 1996a). Although one may immediately look to Thoreau and his influence, via Walden Woods, on forest succession and environmentalism, the National Forest is demonstrating sustainable forestry, and through that, socio-economic (re)development of an area affected by a decline in extractive industries. The Eden Project highlights man's dependence on plants, combining art and science to explore environmental issues, in a landscape type previously overlooked as a potential development site.

5.3 Landscape Quality and the Integrity of the Landscape

Landscape Quality

Through the establishment of a baseline environmental condition (as Aronson and Le Floc'h 1996) – the *physical landscape* context of the three case study projects – it will be possible to explore more extensively not only the integrity (and compatibility) of the case study sites within the wider landscape, but also to ground social constructs of the landscape condition. The English landscape is not a fixed entity, having been shaped by society over thousands of years (see especially Parry (2006) with regard to the National Forest area). This is exemplified in the National Forest, which promotes six landscape types: wooded parklands, enclosed farmlands, floodplain farmlands,

[29] A theme revisited in Section 6.3.2. The Valuation of Nature in Restoration Efforts.

coalfield village farmlands, urban/urban fringe, and historic settlements and enclosures (NFC 2004b). For one NFC representative (PL/LM, NFC Interview 4), the landscape quality of the National Forest is guided not only by geology and existing woodland, but also the impacts of extractive industries, agriculture, the development of transportation and communications routes, and country estates and parklands. The landscape is planned, created and managed.

In line with the above connection with geology, the geomorphology of Walden Woods is key to explaining why much of it remains in conservation today: "If it was a highly desirable area for agriculture, I don't think we'd be in a position where 77 per cent of Walden Woods is protected. I think it would have been lost long ago; developed long ago" (M, WWP Interview 5). Walden Woods largely remained as a northern pine oak forest, unable to sustain un-irrigated agriculture, due to sandy, droughty soil – linking back to the idea of marginal land. However, Walden Woods was historically cut over as woodlots.

The Eden Project provides a stark contrast to both the National Forest and Walden Woods, as the latter two are operating within if not an existing landscape, then certainly an area with recognised ecological features; with a parallel understanding that those areas could be restored. Eden does however build upon facets of marginality on degraded land (that of 'spare' land). The notion of a destroyed landscape has been inverted, with a scar now an opportunity for innovative restoration. There are images around the site not so much to illustrate the change which has taken place, but as a reminder that the Eden landscape was not always present. As an Eden respondent (ED, Eden Project Interview 11) notes, "It is interesting that people do not always connect Eden with a china clay pit". The slopes were devoid of any vegetation (although some was evident along the pit rim), requiring the original quarry to be completely landscaped. As the case studies show, ideas of landscape quality are particularly relevant to this research, as beliefs (and values) about the pre-existing condition are vital in legitimising change, realised in this instance through restoration practices.

Integrity of the Landscape

Cornwall was a place of white pyramids, left from the mining – but now it's becoming slightly lumpy heathland. For the people who 'made' them, that's not a good thing. It is another disconnect between people and the landscape.

(ED, Eden Project Interview 11)

Although the 'white pyramids' have come to characterise Cornwall's china clay lands, the traditional (read: pre-mining, managed) vegetation would have been heathland and scrubby grassland, and rough grazing. Efforts are underway to restore heathland to some areas (through the HEATH Project, and the Atlantic Coast and Valleys Project, amongst others), and although this provides ecological value (and limited economic return), one Eden representative (SC, Eden Project Interview 2) argues, "there's no reason why you couldn't use that landscape to grow other things as well, of more value – timber. Why not create the world's biggest araucaria forest outside of South America? There're 86 sq km of devastated land; it's a blank canvas". There is thus a value judgement in establishing the integrity of the landscape. In the context of this research, 'integrity' of a landscape refers to its quality of being complete or undivided – that is, (ecological) continuity across a landscape, not fragmentation. Landscape integrity is further defined in terms of value, aesthetics and function. Ideas of 'integrity' are used by practitioners to make particular claims of restoration practices – of restoring structure and function that is 'fit for either its original or a new purpose' (M, Eden Project Interview 9; LM, Eden Project Interview 7; H/SC, FOTC Interview 1), and that 'looks at the whole' (PL, Sasaki Interview).

The concept of a reference point will also have a part to play in determining the integrity of the landscape:

> It depends where your reference point is – so if you went back 10 years, [Eden] would be a working china clay pit. If you went back 160 years, they would have just started taking china clay out. If you went back 200 years, it'd probably be a mixture of fields and woodland and a bit of marshland, peat bog. If you went back 5,000 years – or longer, 10,000 years – before humans really had a massive impact on this place, it would have probably been arctic tundra and dwarf birch and things like that. So the problem with ecological restoration, particularly in this country, is who decides where the reference point is? And even when they say where the reference point is, the starting conditions that you've got are completely different physically and chemically to what was there at that reference point.
>
> (SC, Eden Project Interview 2)

Subsequently, reaching agreement on the integrity of a landscape is highly problematic, and subjective. For the HEATH Project, landscape integrity is upheld by "bringing the heathland back. It is a fundamental part of agriculture – gorse is used for roofing, and so on" (PM, HEATH Project Interview). For the Atlantic Coast and Valleys Project, integrity is defined slightly differently. It is still seeking to restore maritime grasslands and heaths, but also the pre-1945 landscape, prior to agricultural intensification; the historic landscape character (Chapman 2006; Attwell 2006).

Landscapes, by their very nature, are constantly changing – making it difficult to pinpoint previous landscape conditions. Smith's (1990) idea of 'second nature' is fundamental here; that of the appropriation of nature by capital. Furthermore, Kitchen *et al* (2006) point to Escobar (1996) as advancing and extending the notion of second nature to produce a more positive 'third nature'. Within the context of environmental restoration, 'second nature' encompasses anthropologically-altered landscapes, with 'third nature' incorporating the restoration (improvement) of the landscape condition.

The National Forest is the most contemporary manifestation of the landscape within its boundary – "It's a landscape that has been moved and shunted and put back together again – reformed and moulded. The Forest is just another layer on top of that; the next layer" (LM, NFC Interview 3). Eden is another example of a 'next layer', with Smit (2002:19) pointing to a "need to balance the conservation of the past with an evaluation of the spirit which brought it into being". As a representative of Mass Audubon[30] (PL/LA, Mass Audubon Interview 1) notes of Walden, "we don't really know exactly what it looked like, back then. Although we can imagine" – *but is a good imagination good enough?* Restoration can only ever be representative (in accord with Elliot 1982; Katz 1992), so perhaps in this instance, it is. Exact restoration is not possible, and thus the best restoration can do is represent a required condition – or simply restore natural capital. However, one can accept the view of a Heligan representative, that "Unless you know what you're supposed to be finding, you've no idea what you're taking away or destroying in the process" (SC, Heligan Interview).

[30] Previously worked for the Department of Environmental Management (now the Department of Conservation and Recreation) throughout the 1980s and 1990s on the restoration efforts at Walden Pond (especially the removal of leisure and recreation measures put in place by the Middlesex County Commissioners in the 1950s and 1960s). Worked with respondents represented in *DCR Interview* and *WPBOD Interview.*

Fundamental to any restoration is understanding the landscape conditions that are present, otherwise the risk is implementing something that fails, or is inappropriate.

What makes Walden such a fascinating case study is that landscape integrity is linked with and defined by the era of Thoreau (with restoration assuming an historical dimension, contrasting the SER International 2004 definition). An historical context determines the construction (or denial) of the integrity of the landscape (echoing Hall (2005) and the idea of history myths). 'Walden' is much more than Walden Pond, with conservation (and restoration) efforts seeking to connect Walden Pond with the Hapgood Wright Town Forest in the north, and Mount Misery Acquisition in the south. Contrasting the above view of 'imagination', a WWP representative (M, WWP Interview 5) notes, "You can come here, to Walden Woods, a good deal of it is very much like it was. You can go to so many places that Thoreau wrote about, and studied, and they're still there". Attempts to maintain the landscape integrity are grounded in what Thoreau may have experienced. As one respondent from WPSR (LM, WPSR Interview 2) argues, "Our goal is to maintain this place in the state *that it should be in*" – a sentiment echoed throughout Abbey (1975). Despite this, there are several plants in the Thoreau Institute grounds today which Thoreau would not have recognised. Largely it is a result of gardening; the beautification of gardens and private land (Field Journal: WWP).

There is less open space today within Walden Woods – if it was to be restored to a state similar to the 1840s, it would require the felling of trees, to mirror Walden's previous 'use' as a woodlot (Field Journal: WWP). A reference point is fundamental in this context, yet it is always negotiable, dependent upon who has the authority to negotiate/define it, and on what basis. The rocks introduced around the Pond to stabilise the slopes raise some concerns from visitors, but as noted by one respondent (LM, WPSR Interview 1), "in *Walden* when Thoreau describes the path around the Pond, he talks about it being 'regularly paved' with stones, almost as if someone had put them there. [...] if we were going to be real purists, we could take the trail out completely but Thoreau talked about there being an Indian path, which means that people were using it; but it could have been a foot or two wide, rather than four". None of the case studies wish to damage what is inherently present onsite – values integral to the restoration (and management) of the landscape.

Any discussion of landscape integrity is presented in terms of appropriateness. For one representative of Land Use Consultants[31], the firm responsible for the landscape architecture at Eden, "Every site is unique, and it's grounded in its own context; and you cannot change or move that context" (LA, LUC Interview). Within Walden Woods, 'appropriateness' may be in keeping with the Walden character, or with Thoreau's writings (PL, DCR Interview[32]) – that is, the 'right look'; with planting based on observations and recordings made by Thoreau (Schofield and Bush-Brown, undated). The proposed Brister's Hill development posed implications for the Woods' integrity, as "To build an office park on Brister's Hill is to assault the historic integrity of Walden Woods. [...] On Thoreau's own ground his wishes should not be contradicted by some notion of progress. Thoreau's opinion, not Boston Properties', should prevail" (Concord Historical Commission 1988 cited in TCCA 1988:5).

There is also a degree of selectivity involved in maintaining the integrity of the landscape. In the National Forest, the planting of trees of local provenance (as defined by Herbert *et al* 1999) is favoured if natural regeneration or direct seeding is not possible (NFC 2007b). The Lost Gardens of Heligan, (the Eden developers' previous project), endeavours to keep the gardening techniques – and plants – representative of the initial Victorian garden, yet it no longer uses some of the chemicals, such as arsenic and nicotine. For the most part, the crop varieties present are of a period no later than circa 1914; as a Heligan representative points out: "I think that's where we differ from other walled gardens, because we try and keep the crop varieties within a certain period in time, and don't go for aesthetics" (SC, Heligan Interview). Parallels can be drawn with the Hampton Court Privy Garden, where two 'versions' of the garden were excavated (and thus destroyed) to restore a sixteenth-century garden, with an acknowledgement that there is one more incarnation of the garden underneath (Field Journal: Eden Project).

Two restoration philosophies were advanced at Heligan, governing (i) the productive gardens (and their return to a working condition); and (ii) the pleasure grounds (protecting the designed landscape and 'lost' aura) – with both maintaining

[31] Part of the design team, working not only on the landscaping in the biomes and the outdoor landscape, but also on the hydrology of the site and soil specifications.

[32] Previously a project manager for Walden Pond, involved in implementing restoration practices at Walden Pond in the 1970s and 1980s, as well as the phasing out of the Walden Breezes trailer park, the proposed re-aligning of Route 126, and the closure of the Concord landfill. Worked with respondents represented in *Mass Audubon Interview 1* and *WPBOD Interview*.

the 'spirit of place' (Smit 2000). Heligan combines restoration with recreation – with certain compromises – for "if we had slavishly restored every part of the garden to the period of its original design, we would have ended up with a series of unconnected period pieces, with no cultural glue to hold them together" (Smit 2000:210). Moreover, the socio-nature interactions guiding restoration are exemplified thus: "We saw no need to reproduce what had originally been intended, when we felt that those intentions had been much improved upon by nature" (Smit 2000:210). There is no demand for intervention for the sake of intervention.

Consideration must be granted to the wider landscape context, and indeed to issues of scale (Milbourne *et al* 2008), for as Maynard (H, pers comm.) notes, "it shouldn't be a small insular site. That one spot doesn't mean much really"; nor, as acknowledged by one NFC representative responsible for monitoring sites within the Forest, can one "plant poplar trees everywhere" (LM, NFC Interview 3). Within the Atlantic Coast and Valleys Project, farming and restoration programmes appear in parallel, with the latter complementing and supporting Higher Level Stewardship schemes (ACVP 2006). 'Integrity of the landscape' does not just refer to the physical environment, but includes the social and economic environment, for as one respondent (LM, LCC Interview 2) suggests of the NFC, "They also wanted to show part of the industrial archaeology, so they show the railway sidings. It is not just virgin forest; it has had a history".

In the early days of the National Forest, there was criticism of '*Forest? What Forest?*', and although there will never be 100 per cent forest cover (instead, a target of 33 per cent cover), one NFC representative notes, "in 100 years' time, I'd like to think the National Forest landscape would be a network of mature woodland, linked and connected. It would be a living, working Forest, not a museum piece" (LM, NFC Interview 7). What is sought is a cohesive, mosaic of landscapes, with woodland providing a 'context' for agriculture, wildlife habitats, urban areas, and additional land uses. As echoed by another NFC representative (LM, NFC Interview 3), "I'd like to get to a point where if there was no more planting, people could not deny that it was already a forest. In whatever way a forest might be defined, you couldn't argue that it wasn't a forest".

It is interesting (and indeed analytically invaluable) to contrast how different perceptions of disturbance in a landscape inform and affect its overall integrity, as this will determine what is part of a landscape, and what is separate from it. A case in point is the introduction of the Boston-Fitchburg railroad through Walden Woods in 1844 (the year before Thoreau took up residence at the Pond), which today is accepted as a part of Walden Woods (Figure 5.1). Thoreau wrote about the railroad in *Walden* (1854) and his journals, often walking along it to Concord, integrating it into the Walden Woods psyche. He also cut down a small area of the Woods for a beanfield.

Figure 5.1 | The siting of the MBTA Fitchburg Line through Walden Woods.

However, contemporary interventions in the landscape are considered detrimental to sustaining the integrity of Walden Woods, chief amongst them: the development of the Walden Breezes trailer park (now being phased out), the landfill, Route 2 (Figure 5.2) and Route 126 (Figure 5.4), and, in summer 2007, the proposed Concord-Carlisle Regional High School playing fields. During the 1930s, there was even a proposal to construct the Route 2 highway over Walden Pond, as it could not be sited through the Town.

Figure 5.2 | The siting of Route 2 through Walden Woods.

From a material viewpoint, the disturbance caused to the environment by the railroad does not significantly differ from any other form of intervention that Walden Woods has borne. It is, simply, its connection with Thoreau which sets it apart. As such, what is advocated is not so much no disturbance, but rather the right kind of

(read: acceptable) disturbance. Yet, of Walden Woods today, a WPSR representative points out that, "It is less disturbed than it was in the 1800s; back then, you were dealing with cutting and felling every day" (LM, WPSR Interview 1). Furthermore, the Fitchburg Railroad built an excursion park at Ice Fort Cove in 1866 – 'Lake Walden' (see Maynard 2005). The park included "concessions, swings, bathhouses, boats, baseball diamond, a hall for dining, dancing and public speaking, and a cinder track for runners and bicyclists" (WPSR 2003). Burned down in 1902, it was never rebuilt. The National Park Service (2002:16) points out a reduction in the integrity of Walden Woods due to multiple and varied land uses, yet "its integrity remains remarkably high. One can still see and understand the landscape encountered by Thoreau, even with the losses and changes. Present land use continues to reflect the historic pattern".

Developed sites can also be subsumed within the wider landscape, in an attempt to negate their impact on landscape integrity. This is evident within the National Forest (PL, NFC Interview 1), and, at the Eden Project, the pit rim is landscaped with indigenous Cornish species to screen the development, and established woodlands are retained, supplemented with new planting (Ove Arup and Partners 1996a). A different approach to landscape integrity is evident inside the pit, as "The landform design reflected its original use as a quarry" (Land Use Consultants 2006).

It only requires one event to open the floodgates, or set a precedent, and threaten a landscape system. The development of Estabrook Woods is no exception:

> I think that Middlesex School's development of the Estabrook Woods sets a dangerous precedent that will enable other development projects that threaten forest and open space in this region. In fact, soon after the development of the Estabrook Woods, CCHS got approval to develop a parcel of the Walden Woods for athletic fields; and Concord Academy recently acquired farmland to convert to athletic fields. The legacy of Thoreau is fundamentally threatened as Concord's ecological legacy and revolutionary identity is diminished by the loss of natural space and the land that contains this history.
>
> (PM, EWA Interview)

5.4 The Politics of Local Planning

Planning considerations further promote society-nature interactions, and can affect the extent, extension and content of restoration projects. Planning issues highlight (the sometimes large-scale) external influences on restoration decisions and efforts; and

the implications which follow. Restoration also has a role to play in land use planning, particularly with regard to derelict and brownfield sites and restoring natural capital.

Issues of scale (and context) inform any analysis of planning concerns. The Eden Project is located within the jurisdiction of Restormel Borough Council, and Walden Woods spans the Towns of Concord and Lincoln. The National Forest, due to its scale, is much more administratively complex. Situated within both the East and West Midlands, the Forest extends across three counties – Staffordshire, Derbyshire and Leicestershire – and encompasses six districts. In each case, the Forest area is relatively peripheral (geographically, and to some extent, politically). People live within the National Forest area (and to a lesser extent, within Walden Woods), and are thus constantly interacting with the landscape and the regulatory environment. Despite variations in scale, some planning concerns are common (and shared) across the case study sites – land use, transport, and socio-economic development – with subsequent implications for restoration in terms of demands on the landscape.

Land Use

Land use planning decisions and recommendations will inform any restoration efforts within the context of both the National Forest and Walden Woods, granted the scale of the projects. Planning discussions speak to social constructs of 'nature' and 'value' that, in turn, shape rationales (and priorities) for restoration, alongside the identity of the places concerned. The two examples analysed here were 'of the moment' during my placement with the Walden Woods Project. The proposed Concord-Carlisle Regional High School playing fields were considered to undermine efforts to conserve and restore Walden Woods. Friends of Thoreau Country, established in 2006, sought to conserve Deep Cut Woods, the intended site[33], but 11 acres have been cleared for two multi-purpose playing fields, two baseball fields, a multi-purpose grass field and conversion of an existing baseball field for softball (Friends of Concord-Carlisle Playing Fields 2007).

[33] Having been the subject of a Town Meeting, and later a Special Town Meeting (which took place during my placement) to vote on articles, the proposal proved highly controversial, with FOTC filing a request for a Massachusetts Environmental Policy Act review (which was deemed unnecessary). FOTC did file a lawsuit which was denied, and win an injunction to halt tree felling, but lost later cases.

Opposition to the development of the Deep Cut Woods area essentially centred on whether the site for the playing fields fell within the boundary of Walden Woods – the need for the fields was not disputed, simply the location:

> The Town – especially those pushing this project – said that this was not part of Walden Woods. The reason they say it's not part of Walden Woods, among other reasons, is that this area is north of Route 2. Now Route 2 was built through Walden Woods – so if you had a bridge built over a lake, one side doesn't suddenly not become part of that lake; but both sides of the bridge or highway are still part of that lake. Everything tells us – the glaciology, the ecology, everything – that this area, which is owned by the school district, nonetheless is in Walden Woods.
>
> (H/SC, FOTC Interview 1)

Attitudes to, and the treatment of, nature are thus shaped by planning concerns.

Deep Cut Woods served as a wildlife corridor linking the main part of Walden Woods with Brister's Hill and the Town Forest – "Constructing the athletic fields would virtually [blot] out a significant component of what is left of Walden Woods on the north side of Route 2" (Brain 2007). Contrary to this, though, the Concord Historical Commission (2007) states prior interventions such as modern, intensive development and 'discrepancies as to the actual location of valued landscape features' as reasons why Deep Cut Woods' historic integrity as a part of Walden Woods had already been compromised. For the Town of Concord (2007), landscape integrity will be maintained despite the development, as "The design preserves most of the woodlands around the fields, retains the cross country trail and provides a 100' wide 'wildlife corridor' between the fields and the property line. Small earthen berms, along with landscaping, will help mitigate [...] impacts from vehicular traffic".

The concept of land bridges and wildlife overpasses also features within the context of Walden Woods (and is mirrored in National Forest planning concerns). A feasibility study produced by UMass Amherst (2007) proposes three locations (and a no-build option) for a combined pedestrian and wildlife highway overpass for the area – with the proposal near Goose Pond 'show[ing] the most merit'. Spanning Route 2, the Goose Pond site would link the Town Forest and Brister's Hill with the Reservation (but it would also raise issues of access control). The report notes of the Goose Pond location: it "includes a number of landscape features directly associated with nineteenth-century intellectual life of Concord. [...] this location has the highest number of nearby features with historical associations and with a good degree of

integrity. It therefore offers the most potential for conveying the significance of the cultural landscape" (UMass Amherst 2007:66). Thus, even a wildlife overpass is attempting to ground itself in the literary and historical significance of the area, to advance social nature interactions, and maintain landscape integrity (perhaps, in some respects, even fostering or restoring integrity). Planning concerns have the capacity to reconstruct spaces, and connections to spaces, anew.

Transport

Transport is an issue which has particular implications for the Eden Project, the NFC, and the WWP, in terms of supporting and advancing restorative activity. Infrastructure development is generally considered detrimental to the landscape, and may challenge claims of benefits achieved through restoration. Yet the public benefit dimension of restoration usually implies increased visitor numbers. The biggest planning issue associated with the development of the Eden Project concerned traffic – particularly that it would bring more cars to an already car-dependent county. Eden's development involved the creation of a new length of road, yet this connected with the existing infrastructure and network of roads created by the china clay industry (Figure 5.3).

Figure 5.3 | A section of the new length of road created by the Eden Project, on a former china clay haul road and new land.

The issue is advanced by an Eden respondent (SC, Eden Project Interview 2), for Eden has highlighted the difficulty in building a twenty-first century visitor attraction and workplace in an area with a nineteenth century transport infrastructure: "You've got 400 people coming to work every day driving through little villages that were made for horses and carts. Eden got a lot of criticism for the effect it had on local transport, but transport in Cornwall has been crap for years, before Eden even came along".

The National Forest Company has been involved in the case for reopening the railway line which runs from Burton-on-Trent to Leicester for passenger traffic. East-

west communications are fundamental to the cohesion of the Forest, and as such, are an option that the Company would like to see kept open – particularly in light of the growth of Leicester, and overall Forest creation and development (PL/LM, NFC Interview 4). There are other transport issues which the NFC is not directly involved with within the Forest boundary, but which may inform future Forest creation (and any associated restoration), namely: the proposed A38 third crossing of the River Trent, the widening of the M1, and the development of the East Midlands Airport.

The present siting of Route 126 through Walden Woods requires the use of an unsignaled crossing (Figure 5.4) to move between the parking areas and visitor facilities, and the Pond and trails. Moreover, no stormwater management system exists to prevent run-off or spills from the road flowing into Walden Pond.

Figure 5.4 | The present siting of Route 126 through Walden Woods.

Drawing upon the restoration study produced by Gardiner and Associates (1974), Epsilon Associates, Inc *et al* (2001) advance two approaches: (i) road improvements and creation of a pedestrian bridge/tunnel; and (ii) relocation of Route 126, linking park facilities with the Pond. If relocation were advocated, it would "resolve existing safety and environmental issues, improve the environmental integrity of the area, enhance the aesthetic appearance of the park, and enrich the visitor's experience" (Epsilon Associates, Inc *et al* 2001:(2)3) – landscape connectivity would be restored. It is worth commenting on the 'improvements to environmental integrity' suggested in the above quote, for relocation would, while reducing fragmentation of Walden Woods, cause a reduction in landscape connectivity and integrity elsewhere. This brings to mind the concerns raised by Robertson (2000) through the 'no net loss' of wetlands; and associated concerns of the value(s) attached to nature and the selective appropriation of contextual features. At present, however, the decision remains unresolved. Planning decisions highlight the contexts in which nature-society interactions are mediated, as well as what needs to be mitigated, and how.

Socio-Economic Development

Although issues of socio-economic development do not apply within Walden Woods (granted the mission of the WWP and other organisations before it), they are indirectly relevant to the Eden Project, and fundamental to the National Forest. Job cuts in the china clay industry have created further pressure for Eden to create more employment and become closely involved in restoration and regeneration of other local sites (M, Eden Project Interview 9). Given the shifts in the clay industry, one Eden representative (PM, Eden Project Interview 10) states, "it would be hard for us to sit here at Eden and talk about our interest in mining communities and their legacy and what happens when they don't have mining jobs anymore; and not to take an interest in what is happening on our doorstep. Quite frankly, we haven't yet come up with a model of a really big difference that we can make"[34]. Eden is also involved in strategic partnerships with (and has a Memorandum of Understanding with) the South West Regional Development Agency and Restormel Borough Council.

The work of the National Forest Company is influenced at present by a range of agendas, but particularly the possible growth areas around Burton-on-Trent and Swadlincote, alongside development of the Drakelow power station, an opencast mining application in Ravenstone, and opposition to a residential development in Ashby-de-la-Zouch (PL/LM, NFC Interview 4). The NFC is also looking towards green infrastructure to aid Forest creation. A long-term aim of the Forest is to become a 'destination area' – attracting visitors and holidaymakers, alongside facilitating a rise in the level of in-migration to the area (M, Conkers Interview). There is, however, a slight dichotomy in the practice of restoration – the need for further degradation – for as Cloke *et al* (1996b:173) note, "the National Forest is claiming rehabilitation of mining landscapes as a key part of its rationale, yet at the same time it is dependent on the exploitation of the local landscape through new or expanded opencast production as 'gain' from more stringent regeneration clauses".

[34] Granted the significance of the Bodelva china clay pit to the ethos of Eden (and of the mining history associated with the National Forest, and to a lesser extent, Walden Woods), the issue of liability with regard to mine closure and mining legacy is fundamental to the practice of environmental restoration (PM, Eden Project Interview 10). One question to arise from such issues is whether responsibility for dealing with historically created risks and damage should then be transferred to 'new restorers' or remain with the initial executor. As the issues of liability and legacy can also be applied to other land uses, they have immense relevancy to restoration discourses, not least because restoration of such sites can serve to reconnect nature-society relations (although dependent upon the methods employed).

5.5 The Integration of Social Nature into Project Practices

A social nature frame of reference is evident within all three case studies, due to the character of the projects, which necessitate, (or draw upon), an explicit interaction between society and nature (with comparisons to Wilson's (1992) culture of nature). The names of two of the projects – the National Forest Company and the Eden Project – infer societal interaction, with the former developed to benefit the nation, and the latter echoing biblical connotations to represent the paradisal existence of man and nature. All three projects contribute to Jordan's (2003) 'new communion with nature', of land as a community to which we belong (Leopold 1949), reinforcing the idea of cultural landscapes and their restoration (Naveh 1998; Higgs 2005). The naming of projects demarcates territory and asserts the importance of particular society-nature relations – with such naming critical in framing the objectives and justifications for what follows. A theme repeated across the sites prioritises sustainable landscapes, as "that way [...] we're way ahead of the game" (PL, DCR Interview).

In identifying the interplay between nature and society across the case study sites, one can begin to tease out some of the dominant themes in environmental restoration discourses. Illustrative of the (intensity of the) nature-society interaction within Walden Woods, and with implications for restoration practices, one need only look to a comparison between visits to US National Parks and visits to Walden compiled by an FOTC respondent (H/SC, FOTC Interview 1). Taking into account the total acreage of the National Parks (2.5 million acres) and of Walden Pond State Reservation (410 acres), the outcome is thus:

US National Parks | *83 people per acre per year*
Walden Pond State Reservation | *1,893 people per acre per year*

As Walden Forever Wild (1987) also notes, "If Yellowstone NP, the nation's largest, had experienced the same rate of visitation in 1984 that Walden Pond State Reservation did, 3,900,000,000 (3 billion, 900 million) people would have visited Yellowstone!" In addition, visitors are not using all of the Reservation; much of the use is centred on the Pond area, as evidenced in Figure 5.5.

Figure 5.5 | Visitors at Main Beach during summer 2007.

Within the context of Walden Woods, one key theme evident in discourses of environmental restoration concerns *balancing and regulating the 'demand' for, and 'supply' of,* nature. The popularity of Walden as a site of literary and historical significance, alongside recreation, informed the perceived need for a carrying capacity study. A report compiled by Gardiner and Associates (1974) proposed limiting the number of people in the Reservation at any one time to one thousand people. As such, car parking facilities were designed to compliment this, with 350 spaces provided[35]. Prior to this, cars would pull off Routes 2 and 126 and park on the edge of the Woods (with the wooden posts now placed along Route 126 a counter-measure), or in the High School grounds. However, whilst the establishment of a carrying capacity is beneficial (with additional cars turned away), it does not mediate or control variations in use of the Woods. As one respondent (LA, WPBOD Interview) argues, "The problem being that on a hot summer day, all 1,000 people may be there to swim; on an autumn afternoon, it may be 1,000 people there, but they're all walking around looking at foliage. You get this tremendous swing in what people's interests are".

A balancing act is evident in the DEM/DCR[36] restoration programme of the 1980s and 1990s for Walden Pond, as it paralleled management decisions to limit the number of visitors, thus preventing restoration efforts being negated by over-use. This is advanced by one respondent[37], a member of the Walden Pond Board of Directors, and also a landscape architect with Sasaki Associates thus: "the Pond edge restoration that went on moved it back to kind of its natural state, but it didn't ignore the fact that accessibility, and the ability for the general public to use it, had to be accommodated"

[35] Based on an average of three people per car.
[36] Within Massachusetts, what was the Department for Environmental Management is now the Department of Conservation and Recreation, with the title of the latter exemplifying the interaction of landscape and society.
[37] Previously involved in implementing restoration practices at Walden Pond in the 1970s and 1980s. Worked alongside respondents represented in *Mass Audubon Interview 1* and *DCR Interview.*

(LA, WPBOD Interview). A tension exists here surrounding the necessity of a public benefit dimension of restoration, which almost always in practice means more visitors, with their own consequences in terms of services (see Thayer (1994) on the conflict that leads to the hiding away of essential services). A telling statement from a WPSR representative (LM, WPSR Interview 2) summarises the nature-society interactions at the Reservation today: "we have tried to make it as natural as possible, but so that people can still use it" – implying perhaps that if it were 'natural', it may inhibit use. While organisations may not seek to actively dominate and control nature through environmental restoration practices, ideas of nature are nevertheless framed by, and constructed within, societal choices and expectations.

With Walden Pond a site for recreation, the 1940s witnessed the establishment of a bathhouse, changing rooms and a concrete swimming dock. As a consequence, conservation was thus downplayed, such that: "Middlesex County saw their role as providing the recreation piece and supporting recreation, and so that was their idea of how to do that" (PL/LA, Mass Audubon Interview 1). Today, only the bathhouse remains.

Another theme to emerge in restoration discourses at Walden focuses on the *importance of social and cultural history.* The Walden Woods Project serves to safeguard the landscapes written about and experienced by Thoreau. Much of Thoreau's writing links social responsibility and environmental stewardship; and it was at Brister's Hill that Thoreau formed his theory of the ecological succession of plant species through seed dispersal – *The Succession of Forest Trees* (Thoreau 1860) and *The Dispersion of Seeds* (in Thoreau 1993). Thoreau's Path on Brister's Hill sites quotes from Thoreau throughout the landscape (Figure 5.6), to highlight and bring attention to the landscape condition, and re-connect communities with the land. For the Walden Woods Project (2007a), "Directly or indirectly, social history is inevitably tied to the surrounding landscape that is home. When words and landscape come together, they bring to life the connections between the social and natural histories of home place". As a WWP representative (LM, WWP Interview 6) notes, the Path "brings Thoreau's words to the landscape and uses them in a metaphorical way on the site that he did so frequently in his own writing".

Figure 5.6 | Examples of quotations along Thoreau's Path on Brister's Hill, left: 'What though the woods be cut down...', right: 'No wonder then, that the white birch is so prevalent...'.

A principal theme evident in restoration discourses within the National Forest Company is that of *a catalyst for socio-economic change*. Alongside the Forestry Commission and Forest Research, the NFC is striving to deliver social benefits through forestry – post-productive forestry (a paradigm shift from the FC's previous focus on productive forestry). With both woodlands and communities developing in the National Forest, the area is emerging as a new social space (see Kitchen *et al* 2005; Cloke *et al* 1996a), to the extent that:

> Social interactions are the dominant feature of Forest experiences. There are strong linkages between landscape change and a developing Forest 'sociality', with forested places providing the setting for the reconfiguration of social networks and new forms of 'connectedness'. It seems, furthermore, that forested places are themselves playing a part in these processes of reconfiguration by influencing discussions about the behaviour of Forest users.
>
> (Morris and Urry 2006:6)

The National Forest Company is interested in using forestry as a way of propelling social and economic development (PM, FR Interview 2). This is echoed in Kitchen *et al* (2006:835): "through an association with forests, woods and trees, nature is being drawn into broader economic and social regeneration policy processes". The environment is only one part of the equation; community and economic development are also fundamental (M, HNFF Interview).

Communities can contribute to Forest creation through the design, planting and management of new Forest sites; and the NFC supports community projects exploring the cultural heritage of the area and a 'sense of place' (NFC 2004b:53). The LANDshapes project exemplifies society-nature interactions, increasing community engagement with the National Forest's history and landscape. As the National Forest Company (2004b:51) notes, the LANDshapes project, operating between 2003 and

2006, "aims to draw together and record the history of the Forest area. [...] Its focus is based upon community involvement, with the aim of developing locally-based heritage projects, oral and written histories about the area and education initiatives".

Discourses of *sustainable development, and particularly the economics therein*, are a further feature in rationalising restoration discourses within the National Forest Company. Numerous businesses (and individuals) are contacting the NFC as they wish to plant trees to offset their carbon footprint (see Milne 2004). As such, many woodlands are valued not only by those who use them, but also by those who own them. Forest creation takes place in the context of sustainability and the economic profitability of woodlands (as explored in Aronson *et al* 2007a; Daly and Farley 2004), with benefits of nature conservation and appreciation. Environmental enhancement and community interaction can support economic development.

The National Forest is recognised as a working landscape, and as one NFC representative notes, "we don't want to stop farming. We want a working economy; and we will continue digging up parts of the landscape, and planting trees. We don't want to preserve the landscape in aspic" (LM, NFC Interview 7). The idea of preserving a tract of land in aspic serves only to detach and distance it from the wider ecological, cultural and socio-economic contexts guiding its condition. On this point, Smit (2000:96) adds, "Putting the past in aspic can lead to cultural atrophy" – reinforcing the significance of a dynamic landscape. Alongside Forest creation, the NFC is also developing and promoting a woodland economy, evident through the National Forest Wood Fair and the Woodland Economy Business Support (WEBS) programme.

The economic element of woodland creation and management is illustrated through the development of a NFC-owned site near Melbourne – Poppy Wood – where 27 ha of agricultural land are being transformed, and a 2 km surface trail created (Figure 5.7). Through the restoration of natural capital, the site is being used to plant up six 'woodland economic demonstration plots' (PM, NFC Interview 6) to show how different species (planted at differing densities) are – and can be – grown and managed for economic gain. Such gain may be through production of high quality veneers or wood fuel (NFC 2008a). Examples include high density planting, productive hardwoods, and coppicing.

Figure 5.7 | Woodland demonstration plots at Poppy Wood, near Melbourne.

The overarching theme to emerge from rationalisations of restoration within the Eden Project is the *inter-dependence, and inter-relationship, between people and plants*, and, as with the NFC, *sustainability*. Eden retains 'plants and people' at its foundation, but it is extending its remit to encompass the sustainability rhetoric, particularly the social element – applying such understanding to issues such as biofuels and climate change (LA, LUC Interview). An Eden respondent (ED/SC, Eden Project Interview 6) offers a new perspective, stating: "in the end, the environment can look after itself. It'll kick humans off the planet if we carry on like we are. The only way to do something about it is to have these social values. The messaging onsite which started off quite environmental is becoming more socially-based". The socio-nature of Eden is expressed thus:

> It's very, very explicit in our positioning that we see people as part of nature, and not distinct from it. And in some sense, that's the key note for the whole thing. It's all about the world that you are part of – and that's not at all to imply that we wouldn't reclaim/restore places that were best left alone or something like that, it's not like a license to just go trampling. [...] our positioning implies that what damage is done to nature really is done to you.
>
> (ED/SC, Eden Project Interview 1)

Eden aims to connect people with their environment – but its (public) ambition is not a Deep Ecology ethic, instead grounded in daily life: "our starting premise is that we work out from the things that people are daily dependent on. And first of all, you have to even point that out to them, because most people don't think much about what they do consume on a daily basis" (ED/SC, Eden Project Interview 1). As another Eden representative (ED/SC, Eden Project Interview 6) suggests, "We use plants because they connect us to our basic survival needs: you're reconnected to your world". There is an acknowledgement that if people are disconnected from the environment, they are not in a position to engage in decisions about sustainability; about a more positive future (Field Journal: Eden Project). Eden is raising awareness

of the diversity of nature, and making issues personally relevant to people – to build a 'constituency of support' (ED/SC, Eden Project Interview 1). As an Eden respondent further qualifies, "It is vital that those visitors who are visiting Eden for the first time appreciate human influence, human intervention, and application" (ED/SC, Eden Project Interview 4).

Another theme bound up in rationalisations of environmental restoration at Eden focuses on *lessons to be learned from 'manufactured' and cultural landscapes.* The Eden Project landscape draws from both the 'natural environment' and the 'cropped landscape' in order to work towards a sustainable future (ED/SC, Eden Project Interview 6). Two proposed developments at Eden – the Edge and the Fertile Crescent – will serve to further advance the Eden Project as a 'social landscape', highlighting society's roles (cultural associations, and indeed impacts) in different ecosystems. The Edge, a third covered biome, advances the dual themes of (i) transformation (using experiences from the past to guide the future), and (ii) living within limits – with a focus on arid and semi-arid regions to exemplify these issues. It will explore famine and poverty; population; and water and energy use, supply, and security; under the theme of climate change (Kendle 2006). The Fertile Crescent, with a proposed location above the pit rim on land owned by the Project, will endeavour to "sensitively restore the buildings to provide accommodation and meeting places for visiting student parties and dignitaries, a field study centre, and convert some of the underused farmland into a showcase experimental farm where visitors will interact with sustainable farming practices" (Whitbread-Abrutat 2006:20-21).

Socio-nature is evident onsite not only through the combination of the landscape and built architecture, but also through the landscape *design*: "Eden's horticulturalists ensure that plants are seen within their cultural context and relationship to people, thus both inspiring and challenging the visitors' perception of gardening" (Eden Project 2006b:25). Interestingly, one Eden respondent (LA, Eden Project Interview 5) views Eden as a green space, with the architecture as incidental.

One cross-cutting rationalisation of environmental restoration at all three case studies is that of *community involvement.* As one respondent (ED, Eden Project Interview 11) suggests, "I'm much more interested in community relationships to the landscape".

Restoration can restore faith and confidence in an area, and highlights possibilities and opportunities:

> The most interesting and important agenda is how the restored places relate to people. [...] the whole sort of loss of habitat is a reflection of a loss of social pattern. It is a loss of need for that habitat. It is a loss of actual sort of interest in that habitat. And restoration, if all it does is put back more heathland that nobody wants, and nobody understands why it's there, and things like that, then it's not going to be a real achievement. [...] I think that at quite a deep level in people, restoration offers the chance that conservation sometimes doesn't do – of people being allowed to be involved in a transformation. So they can go home and they can say today the world is better because of me. It is a transformative thing for people.
>
> (ED/SC, Eden Project Interview 1)

Through restoration practices, (either participation in, or recreation thereafter) communities are reconnected with nature and the environment (Light 2008, 2000; Burke and Mitchell 2007). Restoration practices also allow for a sense of restitution (Rolston 1994) or redemption (Jordan and Turner 2008; Jordan 2003; Higgs 2003, 1997). The actions of practitioners echo dominant themes in the literature.

WildWorks, a Cornish theatre company which has collaborated with the Eden Project on the New Ground project (see Section 7.3.1), highlights the connection between community and nature through landscape theatre. The result is "performances and artworks that grow out of their locations: quarries, cliffs, harbours, derelict industrial sites, castles, empty department stores..." (WildWorks 2008). As Carnegie UK Trust (2006) notes, "The setting for the work is usually places that have great historical resonance for the communities, but are currently seen as without use". Productions have included *A Very Old Man With Enormous Wings*, reflecting the host landscapes and communities; and *Souterrain*, interpreting the story of Orpheus and Eurydice. *Souterrain* explores "the way that loss and grief also can apply to loss of identity and connections with the environment, with themes of dissolution and chaos, grief and renewal explored relative to cultural-led regeneration" (Carnegie UK Trust 2006). Communities are involved in both the development and the performance, with the latter in particular strengthening societal interaction with nature. By (re-)using neglected sites, such landscape-based work has the potential to restore use (temporarily), and bring to the fore the environmental and cultural histories of the site – which may in turn contribute to longer-term (and newly-perceived) use.

Drawing attention to the *social* component of social nature, one respondent notes of Heligan, "I think that is the thing that sets us apart from a lot of places, because you can feel previous footsteps around the place. I think partly knowing that most of the staff ended up dying in the war, that brings that element close" (SC, Heligan Interview). Taking further a focus on the social, a respondent from Forest Research suggests, "restoration is defined by the stakeholders involved. Decision-making about any land management intervention should be participatory – with discussion and deliberation" (PM, FR Interview 2). This idea is further supported and contextualised within the work of the Sand County Foundation (and particularly its Community Based Conservation Network), a project included in this research for its connections with nature- and conservation essayist Aldo Leopold, (and thus literary parallels with the Walden Woods Project and Henry David Thoreau):

> Rural people are an integral part of the environment, and that when fully empowered with rights and know-how are the best custodians of land and natural resources. [...] The [CBCN] programme aims to conserve biological diversity by improving the livelihoods of rural people based on their use of natural resources.
>
> (PM, SCF Interview)

A similar situation is reflected in the Caddo Lake Institute, (an environmental organisation which shares the same founder as the Walden Woods Project), insofar as it does not take on projects unless communities fully support the work and will partner with the Institute (M, CLI Interview).

The theme of *collaboration* – with organisations, communities and individuals – is prominent across the case studies (see Section 7.3.1). To use the National Forest Company as one example, a NFC representative involved with woodland creation and development notes that while the Company "acts to create the Forest, it's being created by people – it's a lot of private individuals, rather than the state" (LM, NFC Interview 5). The scale of the Forest also means that it is read as a local and national landscape. The NFC is not a big landowner within the Forest, but rather an enabling organisation. Commitment to restoration practices is strengthened through consultation with, and the involvement of local communities, and associated knowledges and experiences (in line with Higgs 2005; Pfadenhauer 2001; Tapsell 1995; Naveh 1994).

5.6 Conclusions

In evaluating the interactive relationships between nature and society (and consequent idea(l)s of socio-nature) which bind together and lay the groundwork for restoration practices, it is clear that such interaction can be constructed and re-worked in markedly different ways, with varying intent and for a wide range of purposes. Thus far, analysis has highlighted (but by no means exhausted) the complex connections, challenges, and tensions between nature and society which inform environmental restoration discourses. As a consequence, it has thus started to tease out some of the dominant themes within restoration discourses.

Key findings to emerge from the research have centred on the salience of context in discourses and practices, and particularly the degree to which discourses and practices are context-embedded. The significance of this research also lies in noting the emergence of discourses of appropriateness, and of compromise. Framed by the idea of cultural landscapes, an awareness of the historical landscape context is balanced with more contemporary uses of the land, paying particular regard to ideas of community and community participation in the landscape. The extent and intensity of scalar interactions will inform claims of landscape integrity, and perhaps, identity.

Through identifying the ways that nature-society interactions are utilised and manifested across the case studies, the foundations are in place to explore the positionality of environmental restoration within such interactions. The following chapter analyses rationalisations of environmental restoration by project actors (restoration 'producers'), and traces these rationales through to the mobilisation of material restoration practices on the ground, and the implications which inevitably follow for the environment and society.

CHAPTER SIX

Interpreting the Landscape Aesthetic: The Lexicology of Environmental Restoration

6.1 Introduction

The following chapter expands upon the interpretation and mobilisation of environmental restoration discourses within the case study projects – that is, what the case studies have, in their own right, defined as *environmental restoration.* As has already been mentioned in previous chapters, environmental restoration as a practice is very much surrounded by claims and anxieties about what is appropriate to a given context, and the wider environmental condition – a context which confers material and regulatory constraints upon ecological ideals.

A somewhat atypical case is the former Town of Concord landfill, which despite being situated in Walden Woods – an area of northern pine oak forest – has been 'restored' to a grassland habitat. Grassland is arguably just as incongruous (aesthetically) as the previous landfill, but the decision to introduce a grassland habitat was twofold: "the law won't allow a lot of trees on a landfill unless you have sufficient soil depth, [and] a grassland habitat was highly coveted by the Audubon because that habitat is one that we are losing" (PL, Sasaki Interview). In a restorative context, this may simply seem to be making the best of a bad situation:

> I'm grateful that it's closed, but I think that capping it the way it was done was not ecological restoration – because it's grassland; it's open habitat,

> mainly for birds. But it's not Walden Woods. It's surrounded by Walden Woods, but it can't be Walden Woods because the substrate is not correct. It's not the glacial deposits, and it's not a replacement of those glacial deposits.
> (H/SC, FOTC Interview 1)

Native progeny is crucial, yet it is also a matter of scale and context: the vegetation of the landfill is native to Massachusetts and New England, and not to Walden Woods.

The above example of the juxtaposition of the Concord landfill and Walden Woods provides the backdrop against which to explore throughout this chapter the contexts in which projects employ multiple discourses of environmental restoration (and the subsequent justifications and consequences). In addition, it also allows for an examination of the types of environmental meanings produced by these projects, and how these meanings are consumed.

6.2 The Lexicology of Environmental Restoration

6.2.1 Understanding Internal Constructions of Dominant Discourses

There is no technical or aspirational reason why degraded land should remain so. The value of environmental restoration is its capacity to aid in understanding ecosystems, and the ability of systems to recover – aided or unaided. Restoration often highlights the conflict between how we think environments should develop, and how they actually develop. As such, it is important to address how discourses of environmental restoration are interpreted by the case studies, as this will inform the mobilisation of restoration practices within the project landscapes. As previously noted in the literature review, there is much interchangeability and cross-contamination of discourses. This is carried forward and mirrored in this analysis, with discourses of regeneration and rehabilitation located in a wider restoration framework, as set out in the discussion below.

The eclectic nature of environmental restoration is reinforced by the spectrum of definitions and insights proffered by the case study projects. The mere existence of multiple constructions is not automatically interesting, but the consequences – or what is revealed by this – might be. Understanding of the interchanging (and overlapping) discourses of restoration is fundamental, as it serves to inform the kinds of spaces and places produced, the way in which material changes to the landscape are rationalised, and the representations through which the public are invited to relate to the projects.

Restoration

The construction and promotion of dominant discourses of restoration centres upon the question: *what is it that is being restored?* It is, notes one respondent (LA, WPBOD Interview), a "kind of theoretical construct as to what your basis is for restoration". A statement by a NFC representative (PL/LM, NFC Interview 4), which prioritises restoration as a process (as suggested by Pfadenhauer 2001; Higgs 1997), provides the foundation upon which this analysis is constructed: "Restoration by itself is a process. So unless you qualify it with what you're restoring, it doesn't really mean anything". Restoration requires a clear set of parameters and recognised objectives. In practitioner debates, such recognition is, in its own right, a necessary requirement for all stakeholders involved to sign up to, for a successful end result to be achieved.

By way of reinforcement of restoration as a 'metaphorical concept' (Clewell and Aronson 2007), the following definitions identified by project actors are grounded in, and draw upon, five differing yet inter-related discourses: replication, reparation, removal of anthropogenic influences, restoration of natural capital, and sustainability:

(i) *Restoration as replication*:

> Take back to 'how things used to be'.
>
> (M, SWT Interview)

> Restoration would be trying to replicate what was there before.
>
> (PL, DCR Interview)

> Restoration, in an ecological sense, seeks to artificially accelerate the processes of natural succession by putting back the original ecosystem's function and form.
>
> (Post-Mining Alliance 2007)

> [It] implies that you're going to make something exactly the way it was.
>
> (PL/LA, Mass Audubon Interview 1)

Linked with replication is the issue of *return*:

> I would like to see it at a time when we could help bring back plants to a time when they didn't have the invasive species.
>
> (ED, WWP Interview 2)

> You restore the original conditions, or you approach them as closely as you possibly can.
>
> (H/SC, FOTC Interview 1)

> Returning something to its original state or maybe even to a state beyond that.
> (SC, Eden Project Interview 8)

(ii) *Restoration as reparation*:

> It is the opportunity to replace or repair damage that past industry has done to areas of the countryside.
> (LM, FC Interview 2)

> Taking restoration in its literal sense, it is about repair, renewal, replacement.
> (LM, LCC Interview 1)

> Fixing up what's stuffed, basically; making good what's previously damaged. And a lot of the damage we didn't really know, it wasn't a priority.
> (LM, Eden Project Interview 7)

> I see restoration as 'making good'. It is not necessarily about going back. It's more a case of making the most of the assets we've got.
> (LM, LCC Interview 2)

(iii) *Restoration as removing anthropogenic influences*:

> What it evokes for me is a sense that you're trying to undo some of man's impact, and restoring it back to a natural condition.
> (LA, WPBOD Interview)

> Turning the Earth back to nature, rather than us manipulating it for human purposes. Where we have done some damage, it should be about bringing species back, removing roads, planting trees... But there is a misconception that restoration is about going back in time; that it is trying to create a museum. Really, it is about natural processes and natural systems – operating in a natural way. It is about the importance of protecting biodiversity.
> (M, RESTORE Interview)

(iv) *Restoration as restoring natural capital*:

> I like to think of it as good husbandry, and of repatriating land to land. It is restoring to a good use, and also having healthy soil.
> (LA, LUC Interview)

> It means bringing land that doesn't have a beneficial use – through physical means, community engagement, long-term sustainable management – into being land that does have a viable use. And that doesn't mean economically viable; it doesn't necessarily mean it has to be heavily reclaimed, but it's creating a position for it in the landscape or in the locality such that it contributes to that landscape and locality and it's looked after.
> (PL/LM, NFC Interview 4)

> It's all about habitat and landscape creation.
> (LM, NFC Interview 7)

(v) *Restoration as promoting sustainability*:

> Restoration is bringing something back to (more of) a state within which the definition of sustainability applies – considering the future generations, and the consequences of what you do today.
>
> (PL, Sasaki Interview)

> Putting things back into a healthy, sustainable, natural environment.
>
> (PL, DCR Interview)

> Moving the conditions toward long-term sustainability, even if actual physical restoration to earlier conditions can no longer be achieved.
>
> (M, CLI Interview)

> It involves restoring something back to a given time, and which allows an audience to reflect on that time. Whilst looking back to the past, it also incorporates today – it is inherently about people and nature, and future(s).
>
> (ED/SC, Eden Project Interview 4)

The fivefold typology of restoration discourses outlined above – of *replication* (and *return*); *reparation*; *removing anthropogenic influences*; *restoring natural capital*; and *promoting sustainability* – echoes a wider literature on environmental restoration. The typology has particular resonance with the SER International (2004) definition which underpins this thesis. To paraphrase SERI (2004; emphasis added), restoration practices assist 'the *recovery* of an ecosystem', with recovery further qualified in terms of '*health*, *integrity* and *sustainability*'. Immediate parallels can be drawn between *recovery* and both *return* and *reparation*; while *sustainability* also features prominently across both conceptualisations.

Some of the discourses that make up the typology connect back to theoretical discussions on restoration, particularly classical and romantic discussions (*replication* and *removing anthropogenic influences*; as Abbey 1975), while other discourses put forward a much more practical and operational approach (*reparation*, *restoring natural capital* and *promoting sustainability*; as Aronson *et al* 2007a; Hall 2005; Jordan 2003; and Higgs 2003, 1997; amongst others). Further to this, the typology has reinforced particular aspects of restoration discourses, with discourses of *reparation* drawing on the work of Hall (2005), and connecting with ideas of 'healing' suggested by Higgs (2003, 1997) and Packard (1990). The same is true for *restoring natural capital*, which typically connects with environmental economics (see especially Daly and Farley 2004) and the commodification of nature for economic gain, but here is realigned with 're-greening' and replacing natural stocks.

Equally interesting is what is cast into shadow by the fivefold typology. Further discourses of restoration as found in the wider literature are not represented in the typology, and principal amongst them are ideas of restoration as *fraud*, be it faking nature (Elliot 1997, 1982) or creating an artifact (Katz 1992); as *legitimation* (a justification for damage); as the *commodification and production of nature for economic gain*; and as asserting *superiority over nature* (through dominance and control). Such rationalisations view environmental restoration as an inherently 'bad act', while the typology takes forward 'good acts' of restoration. However, the dominance of 'good' discourses in the typology may reflect the research focus on *proponents* of restoration.

Evident across the above definitions is a recognition amongst respondents of the fluidity of terminology which can be applied to 'environmental restoration'. One Eden representative (PM, Eden Project Interview 10) points to a 'whole theory of environmental restoration terms', amongst them, remediation, rehabilitation, revegetation, restoration, where "all of those are about returning the landscape to some other use". Discourses of *regeneration* and *rehabilitation* are also subsumed within the above restoration typology, and their positionality is discussed below, to further investigate the interchangeability and dominance of particular discourses. An observation by a NFC representative (PL/LM, NFC Interview 4) may complicate matters, for he notes, "Issues like environmental restoration seem to be affected by buzzwords and trends. [...] It is also cyclical in that it can come and go in and out of fashion; other terms come in and replace it". However, despite the complexity of the restoration concept, one respondent (H/SC, FOTC Interview 1) argues simply, "But to restore is to restore" – highlighting the weighting awarded to particular terms, and perceived nuances. It is an apt sentiment, particularly when the choice of term (be it a buzzword or merely cyclical) can maintain a momentum of its own. Actions can often be initiated through an appreciation that the physical, material practice of environmental restoration does not require as much description as does discussion on the theoretical and conceptual underpinnings of the discipline. As a result, weighting is assigned to the *justification and rationalisation of restoration practices*.

Such fluidity of discourse can also be explained through the different professional and personal backgrounds of project actors. A range of professional

groups were included within this research (as identified in Appendix 3), with an accompanying range of experiences, understanding, and perceptions of restoration and wider environmental concerns. The view of land managers differs from that of, say, landscape architects or scientists, which in turn allows for both specificity and generalisability in rationalisations of environmental restoration. It is for this reason that the above typologies of restoration ((i) to (v)) appear as they are, reflective of both environment-specific rationalisations of restoration (replication, return, reparation), and more societal-framed rationalisations (sustainability, removal of anthropogenic influences, restoration of natural capital). The former are promoted by historians, landscape architects, land managers, planners, and scientists; with the latter taken forward by those working in education, finance, senior management, and, again, land management and planning.

As illustrated by the above quotes, *restoration* as a concept is extremely difficult to determine (and agree upon) – not least because individual respondents put forward numerous readings. Yet as one respondent (SC, Mass Audubon Interview 3) argues, "Having a goal I think is the most important thing". What is interesting is that some definitions draw their authority or rationality for restoration as a process from economic/functional discourses, whereas others are more moral-, or duty-based. Such economic and functional discourses are realised in rationalising restoration as an approach to sustainability, or as restoring natural capital (taking forward economic, social and environmental concerns), while discourses of morality and duty are realised through environmental reparation (and return); to improve and 'put back'. As to the substance of what is restored, conceptions vary in terms of how far they are disciplined by the materiality or human significance of what is on a site at present. There is little advocacy of restoring to an original state, with interest instead focused on the removal of anthropogenic influences. Debates that dominate environmental ethics are thus downplayed in restoration practices. 'Original' nature is simply raised in a theoretical context, amidst a range of discourses of appropriateness and indeed compromise (H, Maynard, pers comm.), to rationalise the interventions being made.

Another common feature of restoration discourses is compatibility with the wider landscape context, for as one respondent (SC, Eden Project Interview 3) notes, "You always have to try and fit with what is appropriate, without limiting yourself to what's possible". Similarly, a sympathy towards and empathy with the landscape

condition is sought: "what has gone before may not necessarily be the things that go with now. Having said that, that doesn't give you free rein" (SC, Heligan Interview).

Regeneration

Discourses of regeneration are subsumed within the wider typology of restoration discourses, and are manifested in two ways. First, regeneration is interchangeable with *reparation* in the sense of *natural regeneration by 'the natural'*, as evidenced by the quotes below:

> Regeneration would be to try to get the plant materials that were there (or the general plant community) to take hold.
>
> (PL, DCR Interview)

> Regeneration I see as something relating to forests, or natural environments, or living entities, and allowing it to come back. It doesn't feel like manipulation.
>
> (LM, WPSR Interview 1)

> Regeneration to me suggests that it happens on its own, without human agency. And that's what I prefer above all. And an ecosystem can regenerate – let's think about Walden Woods: a lot of the areas have been cut over, and then if they are just left alone, it will regenerate on its own.
>
> (H/SC, FOTC Interview 1)

> What regeneration means is that you're going to take some action that is going to allow that landscape to rebuild itself. In other words, you're going to eliminate the forces that are creating that degradation – eliminate some invasives – and plant some appropriate species, and then walk away.
>
> (PL/LA, Mass Audubon Interview 1)

Interestingly, whilst the above quotes are grounded in an American context, Maynard (H, pers comm.) also notes, "I guess in American usage, 'regeneration' is a term I've never heard before. I would say 'restoration'". What emerges is regeneration as harnessing the 'natural powers' of plants to re-grow; but there is also regeneration as a conventionalised, UK economic development discourse. In many cases, the former is, in part, being harnessed to the latter (see especially Kitchen *et al* 2006). This latter understanding of regeneration also features within the restoration typology, and thus, second, regeneration is interchangeable with discourses promoting *sustainability*, in the sense of *social regeneration by 'the social' and 'the natural'*. Indeed, regeneration might 'naturalise' economic regeneration, for as an Eden respondent (SC, Eden Project Interview 2) argues, "when we talk about regeneration,

we normally mean about not just environmental, but we're talking about social and economic as well". Regeneration is thus subsumed within a sustainability dialogue. This is mirrored in a definition put forward by the Post-Mining Alliance (2007a):

> Increasingly, society is demanding more from post-mining landscapes so that they can return economic as well as ecological benefits to offset negative closure impacts. Regeneration implies that a broad socio-economic (and environmental) perspective is being taken, including the mine site but also the environment and communities beyond the mine site itself.
>
> (Post-Mining Alliance 2007a)

Natural regeneration discourses are taken forward predominantly by project actors involved with land management, while social regeneration discourses are advocated by those involved with education, finance, land management and senior management. Such segregation is a reflection of the operational priorities of different groups of project actors.

Connections between regeneration and restoration are further evident in the claim that "Post-mining landscape regeneration is occurring through large-scale ecological restoration" (Whitbread-Abrutat 2003). As one respondent notes, "Restoration and regeneration suggest making something as it was before a certain time, or threshold of change was crossed" (PM, SCF Interview). Restoration ties in with regeneration; with social and economic aspects: "Regeneration is more about what comes out of that restoration process – jobs and livelihoods and strengthening communities" (LM, NFC Interview 3).

Furthermore, *regeneration* is viewed as an umbrella term, with restoration as one aspect of it. As argued by one respondent (SC, Eden Project Interview 2), "there's restoration, rehabilitation, reclamation, regeneration, all those things, and they're all subsets of what regeneration is. There are different kinds of regeneration for different circumstances". This is echoed by another respondent (LM, NFC Interview 5), who notes, "Regeneration involves restoration, but a whole lot of other things, besides".

Rehabilitation

Although the use of rehabilitation discourses is neither advocated nor advanced by any of the case study projects (which might say something in itself as to the connotations associated with such terminology) several constructs are proffered as to its meaning and potential application. Discourses of rehabilitation are closely aligned with the idea

of repair and healing, and as such, feature within wider restoration discourses prioritising *reparation* (and thus are also interchangeable with *natural regeneration* discourses). Similarities can be drawn with the SER International definition of rehabilitation, emphasising the "reparation of ecosystem processes, productivity and services" (SER 2004:12), for as one respondent (SC, Eden Project Interview 2) notes, "Rehabilitation and reclamation I think are more about the physical/chemical". Further definitions are supportive of this claim thus:

> It might be putting something back together again; re-enlivening again.
> (LA, Eden Project Interview 5)

> Some ecosystems may have been changed so dramatically that a return to the original landscape is no longer possible and rehabilitation – a partial return to a previous state – could be the only option.
> (Post-Mining Alliance 2007a)

> Rehabilitation [...] you do have an ecosystem, it's functioning, but it needs a little help. [...] everything's pretty much intact, but there are certain things about the ecosystem that you realise are not as they should be. [...] you just replace certain critical key components of the ecosystem [...] mainly living components (biotic components).
> (H/SC, FOTC Interview 1)

> Rehabilitation is resonant of putting back into good heart; to a condition of operation that previously existed without adaption or function.
> (M, Eden Project Interview 9)

> Rehabilitation says it's in a degraded state, and you're going to put it back into some type of a functioning state. It may be it's in a non-functional state and you're going to make it functional again.
> (PL/LA, Mass Audubon Interview 1)

Rehabilitation thus concerns the reinstallation of ecosystem goods and services; of functionality (in line with Tapsell 1995). It is about recovery and readaption – tackling specific harm – to 'speed up the process' of succession (M, FOTC Interview 2). For one respondent (SC, Eden Project Interview 8), rehabilitation suggests that "it starts off at quite a low point so there's something about it that got much better. [...] it doesn't have to return to its natural state, just something new, essentially; new but better". Taking quite a scientific approach towards improving the landscape condition, rehabilitation discourses are represented in the views of historians, landscape architects, land managers, planners, and scientists.

As the SER International definition goes on to note, "Nonetheless, restoration as broadly conceived herein, probably encompasses a large majority of project work that has previously been identified as rehabilitation". (SER 2004:12). The close association between the two concepts (as Tapsell 1995) is highlighted by one respondent (M, NFC Interview 2) who notes, "I think that rehabilitation is probably like restoration, but refers to particular damage; low value land". The association is also evident in the statement: "they do know how to re-contour the land, and rehabilitate it, and revegetate it, and restore it" (PM, Eden Project Interview 10). Despite this, rehabilitation is also viewed as synonymous with regeneration, and in contrast to restoration, for as another respondent (LM, WPSR Interview 2) argues, "Regeneration is hands-off; let nature take its course and rehabilitate". It is also defined within a social context – drawing upon the meaning of rehabilitation in terms of those recovering from illness, or offenders (LM, WPSR Interview 1) – to suggest the return of landscapes to a healthy state, in parallel with Higgs' (2003, 1997) idea of 'healing', or to bring the 'deviant' back to some kind of useful social role. A theme running across varying discourses of restoration and regeneration, and in the above rationalisations of rehabilitation, is these slippages between environmental and social markers. Restoration is very much an environmental and a social process; with benefits to both.

* * *

From this, one can argue: *is there any evidence of a 'paradigm shift' within the lexicology of environmental restoration?* What is evident is that despite similarities in definitions, restoration is a field in which 'constructive ambiguity' reigns supreme. Subtleties within the terminology produce implications for the uptake, interpretation and mobilisation of restoration discourses. Critical to the thesis, the meanings associated with different terminology will inform not only how dominant discourses rise to the fore and are played out on the ground, but will also inform perceptions of the purpose and intent of environmental restoration.

Instances arose during the research where respondents adjusted their use of terminology to better reflect the context it was applied to: "that's one form of regeneration, er, restoration" (PL/LM, NFC Interview 4), and "The restoration, actually recreation, of Spectacle Island out in Boston Harbour, where they put 12

million yards of blue clay excavate from the tunnel; and then had to restore it and recreate landscape out there" (PL, DCR Interview). What is suggested and reflected in the above quotes is some degree of experience, and solidity of meaning. At the same time, it is an attempt to overlay a particular reading to a landscape, to explain, but also distinguish and rationalise, the action undertaken.

Several other concepts are used in parallel by respondents, namely: (bio-)remediation; ecological amelioration (H/SC, FOTC Interview 1); landscape rescue (LA, LUC Interview); reclamation and reworking (PL/LM, NFC Interview 4); and transformation. For one Landlife representative (PM, Landlife Interview; Scott 2003), though, "We prefer *creative conservation* to all these terms – it suits us better". The significance of different discourses, and associated concerns of confusion or silence, lies in providing an appropriate term (and associated understanding) for any audience. However, a plethora of discourses (synonyms, even) is also equally divisive and exclusionary, for the range of terminology can prove overwhelming, with understanding inevitably lost. With implications for geography as well as social (and natural) science, restoration rationales and practices are anything but consistent, arguably breeding their own terminology. It is a terminology defined by instability and fluidity, and one which is informed by, and draws upon, a wide range of geo-political, socio-cultural and economic influences.

The complexity of environmental restoration discourses is such that it 'means many different things to many different people' (PL, DCR Interview). The question thus arises: *in what contexts – if any – does it matter what word is used?* and leading from this: *are there circumstances where the emotional, persuasive use of certain words is important, and others where it is not?* This complexity is exemplified in the following statement:

> I'm quite conscious of the huge debate about all the definitions, and that there are nuances in terminology; but I think it is also true that different words carry different emotional weight in general public usage. In a situation like that, I'm more inclined to care about their nuances of interpretation than maybe what the scientific agreed distinction between restoration and rehabilitation and reclamation, and all of these things. It does matter in a scientific paper, but it doesn't matter in a conversation in the pub. You have to pick the best word for the moment.
>
> (ED/SC, Eden Project Interview 1)

To play devil's advocate, it can be argued, therefore, that there may be some organisations which simply want to (be seen to) *do* restoration, yet not necessarily want to *reflect* on what it involves. Precision in terminology does, however, contribute to a universal recognition of 'restored spaces', even if the underlying rationales are site-specific, for it allows one to generalise and thus transfer discourses.

One respondent at the Eden Project (LM, Eden Project Interview 7) draws upon the triple bottom line of sustainable development to synthesise practices: "rehabilitation as the social, regeneration as the financial, and restoration as the environmental. Restoration has the stronger environmental theme". This is echoed in a claim by a NFC representative (PL/LM, NFC Interview 4), that, "restoration is more a physical process, whereas transformation, renewal and regeneration can be more human processes".

Several implications arise from the fluid definitions of discourses of environmental restoration (and regeneration and rehabilitation), not least because "We move on to using terms without a proper grounding of what they mean" (ED/LM, Eden Project Interview 12). For another respondent (C, NFC Interview 9), "People hear particular words, and they have a vision in their minds as to what it means. And that's not always helpful". This point is taken one step further, in arguing of the volume of terms in circulation: "people take a term and run with it, and then actually 'degrade' it in a sense, to the point that it almost doesn't mean anything anymore. So you have to know exactly what your definition of restoration is" (H/SC, FOTC Interview 1). Yet the fluidity of meaning may also be permissive, or persuasive.

That terms are often used interchangeably is problematic in itself, for as one respondent acknowledges, "All are emotive and inexact" (M, Eden Project Interview 9). The Post-Mining Alliance (2007a) also draws attention to this, noting, "terms are often used interchangeably, but there are many formal definitions of each which apply in different circumstances", with reference to restoration, rehabilitation, remediation, reclamation and regeneration. All the concepts are calling on the idea that there is something more suited – an 'ecological truth' – with a distinction emerging thus:

> If you have decided that restoration *has* to be about putting it back how it was, then regeneration and rehabilitation come as something else. But if you've decided that restoration means that you can put it back to lots of different things, then regeneration and rehabilitation are all kind of one and

> the same thing anyway. I don't think they are that different, it just depends where your standing point is on the term restoration.
>
> (SC, Eden Project Interview 3)

In support of this, another respondent argues, "The differences are very subtle, but physically they're very different" (SC, Heligan Interview). By way of example, one respondent (LM, LCC Interview 2) suggests "There are differences between them if only because a reclamation grant has meant a different thing to a restoration grant". Interestingly, only one US respondent (LA, WPBOD Interview) draws upon National Park Service definitions of restoration, rehabilitation, preservation and reconstruction[38] to inform discussion of environmental restoration discourses. One can argue from this, then, that there can be a wider institutional context reproducing certain norms. Linking back to the literature, there is a tension where: (i) there are some 'objectivist' intellectual projects which seek – for scientific or legal purposes – to specify what restoration should mean (as demonstrated by Robertson (2000) and 'no net loss'), and (ii) there is the study of language in other contexts, where it is the attachment of terms to specific activities, and the reasons for that, that is of interest (see especially Hall 2005; Jordan 2003). Both claims are taken forward in this analysis, to explore the rationalisations and justifications underpinning restoration discourses, and the subsequent interplay between (dominant) discourses and practices at the case study sites.

The *relevancy* of discourses of environmental restoration is also questioned:

> I think 'restoration' is a sloppy, general, overall term. It is okay if you are talking about restoration of damaged ground to a healthy state. But in terms of historic landscapes, the term has become meaningless – restoration can refer to preservation, recreation... It is far too general to be used. But as a term, it is necessary. You just need to be careful what context it is used in.
>
> (LA, LUC Interview)

Despite all these subtleties and complications, there is consensus that discourses of environmental restoration do provide "a new lease of life to something that might otherwise deteriorate" (LA, Eden Project Interview 5), as "They are all to do with reversing or slowing change" (PM, SCF Interview).

[38] NPS Technical Preservation Services (TPS) definitions: *Restoration* "depicts a property at a particular period of time in its history, while removing evidence of other periods". *Rehabilitation* "acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character" (NPS 2007).

6.2.2 Approaching Environmental Issues

Using wider environmental issues identified by project actors as a backdrop, this section analyses those approaches that have emerged to tackle or overcome environmental issues. In analysing differing approaches, it is possible to identify whether some approaches are favoured over others (and the justifications and rationalisations behind such decisions), to set down a foundation and context for the mobilisation of particular restoration discourses.

At the Eden Project, issues are considered through a *sustainability* filter (a triple bottom line protocol known as Pants), with a focus upon soil manufacture; waste management; pest management; sustainable energy; sustainable construction; and the hydrology of the site and water (re-)use; alongside sustainably-sourced food. Posed as a hypothetical question, *what if Eden's Waste Neutral management system – that of reduce, reuse, recycle, reinvest – was applied to a broader environmental restoration context, with a particular focus on reinvestment?* (Field Journal: Eden Project). Such an approach could contribute to restoration debates, and offer insights into approaches for reinvigorating and reclaiming degraded sites. Table 6.1 illustrates environmental management techniques which promote and advance restoration discourses at the Eden Project, providing an insight into the diverse practices contributing to the early restoration of the site.

Requirement	*Technique Employed*
Stabilisation of a 22 ha irregularly shaped pit, of 30m to 70m depth; laying of foundations for the biomes.	• Hard engineering methods included: grading, buttressing, rockbolting, soil mailing, and the use of granite and geotextiles • 2,000 rock anchors up to 12m long sunk into the sides. • Foundations of 2m wide, 1.5m deep, and 858m long.
Installation of a modern, high performance drainage and pumping system to reduce hard surfaces, and planning for slow run-off.	• Surface drains (swales) along the pit perimeter. • Geotextile membranes at various depths of fill to form a drainage blanket – to act as a horizontal channel to direct sub-surface water to six collection shafts.
Creation of 80,000 tonnes to 90,000 tonnes of artificial soils from recycled materials for planting schemes.	• For environmental ends, decided against the import or export of material – large-scale destruction and redevelopment of the site followed. 1.5 million tonnes of fill material were used to raise the pit floor by 20m and develop the present terraced landscape. • The manufacture of the Eden Project's own soil to allow soil mix recipes to be customised to satisfy specific planting requirements.

Development of the basic landscape.	• The use of vegetation, and a combination of vegetation and geofabric – stabilisers were grown into the landscape. • Hydroseeding: a grass-gorse-clover-birch seed mix sprayed on the slopes to bind the soil. • The incorporation of mushroom compost during cultivation. • Plant selection to highlight man's dependence on plants.

Table 6.1 | The key requirements and action taken in terms of environmental management at the Eden Project (Source: Eden Project Interviews; Whitbread-Abrutat 2003; Cole 2003)

As the above Table 6.1 shows, in this instance, restoration practices prioritised discourses of *repair* and the *restoration of natural capital.*

I wish to draw attention to the soil manufacture at Eden, not least because soil has never been manufactured to this scale or complexity, and the practice has the potential to aid restoration of other degraded sites. As Whitbread-Abrutat (2003) notes, "The project is successfully growing all the world's major crops in artificial soils, in artificial climates in a worked-out quarry". Waste materials are reclaimed and reused, with no topsoil imported to the site – compost is combined with the by-products of china clay extraction. As the Eden Project (2006d) acknowledges, "Our soils make an important point: that environmental regeneration is possible. It is also something that now has an application in the wider environment and that we hope will assist regeneration projects far beyond Bodelva".

Environmental issues at the Eden Project are also framed by the *inter-dependency between plants and people.* Through environmental management techniques, the Eden Project strives to "have as light a footprint as possible, while not implementing technology unaffordable by the general public as this would send false messages" (M, Eden Project Interview 9). Eden is a medium for highlighting a 'cross-section of voices', for one Eden Project respondent (ED/SC, Eden Project Interview 1) argues, "What we're not going to do is refuse to let people have a voice to explain what they think" – it is a living *theatre* of plants and people. Moreover, it is a representation of realities, adopting a positive reading of environmental issues, as "the message is that things are possible, rather than it's all doom and gloom [...] it's a celebration of our environment, and diversity; and how much we use [it]" (SC, Eden Project Interview 3).

The Walden Woods Project has a distinctive approach to tackling environmental issues, not least because the *influence of Thoreau* is ingrained into any consideration

of environmental issues: "It is going to hook people with this idea that they've been inspired by the writings of Thoreau or others who associated with him and this landscape; and that the landscape is worth protecting and recognising and understanding from that perspective" (SC, Mass Audubon Interview 3). Such a focus provides an alternative and uncommon perspective on nature-society interactions, but also for the production (and consumption) of environmental meanings, which in turn will feed into rationalisations of restoration discourses. Protection of Walden Woods is bolstered by both literary and environmental concerns: "Thoreau invested in the landscape a kind of aura. He has a reputation which is powerful, and that has increased in recent decades" (H/SC, FOTC Interview 1). In support of this, a representative of the Thoreau Society (M, Thoreau Society Interview) argues, "I think people could, and will, look to his writings for inspiration for tackling issues today. There may well be statistics on climate change and species extinction, but Thoreau wrote about issues in a way that I think people are more able to relate to".

For the Walden Woods Project, environmental management incorporates *land management, access*, and to a lesser extent, *land use* – with a firm focus on connectivity and ecological function. However, as acknowledged by a WWP representative[39] (LM/SC, WWP Interview 1), the Walden Woods Project does not have a strong procedure or set of criteria against which to evaluate (and prioritise) potential sites for conservation action or acquisition, although this is being reviewed.

Maintenance of conservation and restoration sites is complicated by the intricacies of literature and the natural environment bound up in the sites – as such, "you can't hire a lawn service to go out there" (PL, Sasaki Interview). Clearly, not all the narratives woven into the site are concerned with restoration: wider aesthetics are relevant too (as Eden 2002; Eden *et al* 1999 and river restoration). The landscape of Walden Woods is defined by cultural and historical markers, rooted in both the era and the writing of Thoreau. Restoration practices sit alongside conservation and preservation efforts, particularly conservation restrictions (CR).

Much of the environmental management that Walden Pond and Woods has witnessed is entwined with restoration practices (see Section 6.2.3 for further discussion). Somewhat unusually, trees were planted into Main Beach in an effort to

[39] Responsible for land management planning across Walden Woods Project sites, particularly acquisition planning to support the Project's conservation mission.

not only continue the tree line around the Pond, but also to provide some shade on the beach (Figure 6.1), but the practice has not proved as successful as anticipated (PL/LA, Mass Audubon Interview 1).

Figure 6.1 | An example of environmental management at Walden Pond: trees planted into Main Beach.

As at the Eden Project, restoration practices throughout Walden Woods are bound up within a wider *sustainability* ethos. Sustainability is promoted at the Reservation, with the site a test-bed for new practices – BigBelly solar-powered trash compacters, Clivus composting toilets, and improvements to stormwater drainage and infiltration. However, this is not always appreciated: "A lot of times you assume people have the values that you do, and of course they're going to want it to be like this, and this is going to make it better. Then you realise no, they just want it to be convenient" (LM, WPSR Interview 1).

Environmental management within the National Forest Company again addresses the three pillars of *sustainability*, as "We need to see the spaces between the trees as much as the trees" (LM, LCC Interview 2); it 'can't just be trees' (M, Conkers Interview). The foundation to such management is grounded in Forest creation. The annual target is typically between 400 ha and 500 ha for the period 2004 to 2014[40]. Table 6.2 highlights how Forest creation has been achieved from the inception of the National Forest to summer 2008; and Figures 6.2a and 6.2b highlight changes in woodland cover. 87 per cent of tree planting has been broadleaf and 13 per cent conifer; and at new sites, a minimum of 20 per cent remains as open ground (NFC 2008h). As one NFC representative (PL, NFC Interview 1) notes, "there is a great sensitivity [in bringing about large-scale landscape change], in terms of wanting to add to the stock

[40] Due primarily to changes in the Tender Scheme (below), the figure decreased to between 380 ha and 400 ha (2006/2007) and again to 200 ha to 275 ha (2007/2008). Targets are determined by grant in aid available, securing land opportunities, and additional external funds (see NFC 2004b).

of ecological and environmental resources". Such sensitivity feeds into wider discourses of appropriateness and compatibility.

NF Planting	*TS*[1]	*M/D R*[2]	*L Acq*[3]	*Dev*[4]	*LA*[5]	*NF P*[6]	*Other*	***Total***
1995 – 2008	3,301 ha	716 ha	745 ha	124 ha	40 ha	90 ha	288 ha	**5,304 ha**

[1] Tender Scheme
[2] Mineral/derelict land restoration
[3] Land acquisition
[4] Development-related
[5] Local Authorities
[6] National Forest Premium

Table 6.2 | NFC planting achievements: 1995-2008 composite (Source: NFC 2008g).

Figure 6.2a | Woodland cover as of 1991, prior to the National Forest designation (Source: NFC 2008f).

Figure 6.2b | National Forest woodland cover as of mid-2008 (Source: NFC 2008e).

Forest creation is advanced chiefly through land acquisitions; grants programmes, such as the Tender Scheme; the Changing Landscapes Scheme; Plant a

Tree and Business Benefit; urban forestry; mineral land restoration and development-related planting; and green infrastructure (see Figure 6.3).

Figure 6.3 | Examples of landscape creation; left: Willesley Wood (managed by the Woodland Trust and the NFC), centre: Billa Barra Hill Local Nature Reserve, right: heathland restoration (with longhorn cattle grazing) at Beacon Hill Country Park (managed by LCC).

The *Tender Scheme* is the NFC's main mechanism for Forest creation, creating large areas of new habitat for wildlife. It has proved particularly successful with private landowners interested in rural diversification, and allows the applicant to determine the woodland type to be created and managed. The Tender Scheme "enables landowners to diversify their landholding and business interests, create commercial and/or amenity woodland and can be linked with work that enhances or creates opportunities for recreation, access and tourism" (NFC 2007c). Due to delays in the approval of the Rural Development Programme for England in the European Parliament, the Tender Scheme did not operate in 2007/2008 (Field Journal: NFC). An alternative has been introduced, the *Changing Landscapes Scheme*, for parcels of land greater than one hectare in size. Encouraging Forest creation, the CLS pays for the creation of new landscapes (of at least 50 per cent woodland creation), 'that include woodland, encourage wildlife, and create areas for people to walk and enjoy' – with landowners retaining full ownership of the land (NFC 2008d).

Linked to the CLS, the *500 – 2,000 Trees Scheme* applies to sites less than one hectare in size. As the NFC (2008c) notes, it "covers the planting of between 500 and 2,000 trees; sufficient to create a woodland of up to one hectare (2.5 acres) in size. The scheme is ideal for creating small copses or to establish shelterbelts that link natural habitats". The NFC has also launched a woodland creation scheme titled *One Acre Woods* – to establish one hundred one-acre woods. As the larger woodland creation schemes can exclude some landowners, the One Acre Woods are an attractive proposition for a wide range of organisations and individuals, including farmers, businesses, schools, local councils, and community groups (NFC 2008b).

The NFC's *Plant a Tree* and *Business Benefit* events allow for individual and business engagement respectively, in Forest creation, and as with the grants programme, echo restoration discourses that prioritise the *restoration of natural capital*. During my placement with the National Forest Company, I was involved with a Business Benefit planting event, when the TR Register classic sports car club planted 50 trees. At that time, I planted a tree to mark my research with the NFC (Figure 6.4).

Figure 6.4 | One of the National Forest Company's Business Benefit events; left and centre: planting in March 2007, right: the site – now Mill Hill Wood – in September 2008.

The Forest is also a test site for new environmental management techniques – as a case in point, Landlife (2008, 2006; Scott 2003) is working with the NFC on trials of inversion ploughing. Essentially, the weed seed bank is buried, with topsoil only accessible to trees; promoting the establishment and extension of declining wildflower species associated with low fertility habitats. The potential exists to increase, and restore, connectivity between sites (Landlife 2006).

There is also the complication of a *legislative framework* – particularly within the National Forest and Walden Woods – for this shapes *how* restoration can take place. Areas of land within the Forest are subject to restrictions imposed by their designation as Sites of Special Scientific Interest, or Areas of Outstanding Natural Beauty, amongst others. For the Walden Woods Project, attention must be awarded to Massachusetts Conservation Restrictions – legally binding agreements "between a landowner (grantor) and a holder (grantee) – usually a public agency or a private land trust; whereby the grantor agrees to limit the use of his/her property for the purpose of protecting certain conservation values" (Mass Audubon 2006). The Walden Woods Project is both a landowner and a holder of various sites within Walden Woods.

With different techniques and approaches to environmental management advocated and advanced, the ability of the projects to translate this information to a wider audience is essential – for it provides an understanding of how the landscape is interpreted, and shows that particular actions are possible. Subsequently, it is important to assess the extent to which the case studies have succeeded in *balancing conservation, education, and research* within their operations. Echoed across the projects is the belief that "They are all important, but priorities have to shift in response to threats or opportunities" (M, CLI Interview). A general discourse of interconnectedness exists, reflected in formal and informal discourse, and in material practices – this relationship not only attempts to improve the environmental condition, but also to raise awareness of it.

At Eden, a project representative (M, Eden Project Interview 9) notes, "They are so integrated that the perception that we undertake to represent any form of conscious balance would be a false one". Conservation and education are not distinct, with another representative (ED/SC, Eden Project Interview 4) arguing, "The education is to complement the conservation, and vice versa". Education is fundamental at the Eden Project: "our tradition as an education project rather than a lobby project is important. [...] we are actually able to sit at the table and talk to both sides of the argument, and that gives us a sort of brokering possibility" (ED/SC, Eden Project Interview 1).

For the National Forest Company, the synergy between conservation, education and research is grounded in the National Forest Strategy (NFC 2004b) – as it underpins any activity within the Forest. As a NFC respondent[41] (PL, NFC Interview 1) notes, "I think that they are balanced in as much as we have got a very wide remit to cover; we've got wide-ranging objectives". The aim of the NFC is to inform people about, and involve them in, the development of the Forest and Forest activities. In contrast to Eden and the Walden Woods Project, any action in the National Forest is driven by the Strategy and the recommendations therein.

Although conservation, education and research are fundamental to the Walden Woods Project (highlighted in its mission statement, see Section 4.2), they are not equally weighted. Land is expensive in the area, and where the Project may spend $1

[41] Principally involved with policy aspects of planning and land use within the National Forest, and the development of the National Forest Strategy (NFC 2004b).

million on a piece of land, the equivalent is not spent in the education department or on research and collections during the course of a year (PM, WWP Interview 4). The initial aim of the Project focused upon land acquisition and conservation, with the education and research (and advocacy) elements developing as the Project has developed. As at Eden, conservation and education are inter-dependent:

> The education department really has a great resource in the conservation of land that we hold and so forth. [...] the people that come here to take advantage of the research collection, I'm not really sure that they're invited to go out to Brister's Hill or Bear Garden Hill. I think that we could make our land the bigger part of that research collection, and actually consider them part of the collection in a sense.
>
> (LM/SC, WWP Interview 1)

The synergy between conservation and education builds upon and further reinforces the idea of restoration-as-ecological-learning (with parallels in Light 2008; Hall 2005; Jordan 2003; Turner 1988), and through that, participation and stewardship in restoration practices.

Research is integral to both the Eden Project and the Walden Woods Project, evident through the work of the Eden Foundation[42] and the Thoreau Institute[43]. Furthermore, there are five environmental education programmes across the case studies – *Approaching Walden*, *World Wide Waldens*, *Gardens for Life*, *Mud*, and *Tree For All* – which have the potential to inform restoration discourses. While not directly advocating restoration practices, these programmes (further detailed in Appendix 6) nevertheless highlight the interplay between restoration and other environmental processes (and how such interplay is manifested), alongside approaches to knowledge dissemination. Restoration discourses (and the significance assigned to them) are thus located and examined in relation to wider environmental concerns.

6.2.3 Mobilising Environmental Restoration Discourses

As identified above, certain rationales within discourses of environmental restoration may be taken to be synonymous and interchangeable. However, there are subtle differences amongst them, with implications for their subsequent mobilisation. As

[42] The Eden Foundation underpins the work of the Eden Project, focusing upon the development of projects, educational programmes, and creative interpretation programmes.
[43] The Thoreau Institute at Walden Woods collects and houses research materials which relate to Henry David Thoreau, his historical context, and his relevance to environmental and human rights issues.

such, whilst it is important to understand definitions of use, it is also essential to see how, in speaking for nature (Braun 2002; Thoreau 1862), those definitions have translated into action on the ground, and indeed whether the two are consistent – otherwise it negates the use of the terminology.

Drawing upon the practice of Clewell and Aronson (2007), Virtual Field Trips are employed to explore the mobilisation of dominant environmental restoration discourses within the case study sites (and thus the production of restored nature (Smith 1990)). Landscapes are remade both materially and semiotically. Each project illustrates a key feature of the geographies of restoration: to date, the tendency to inhabit and transform environmentally degraded spaces. This geography not only has straightforward economic dimensions (eg. cheaper land), but also gives an openendedness to the practice and representation of restoration (and its benefits) that might be less available in obviously valued spaces.

Virtual Field Trip 1 | *Environmental Restoration and the Walden Woods Project*

Although restoration discourses pale in comparison to an established 'conservation' philosophy within the context of Walden Woods, the former nevertheless remain as an important practice for this tract of Thoreau Country. There are three main cases I wish to draw upon to explore the use of restoration discourses: the former Town of Concord landfill (also discussed in the Introduction to this chapter), Thoreau's Path on Brister's Hill, and Walden Pond. Restoration at Walden Pond (and to a lesser extent Brister's Hill) incorporates an historical element through its connection with Thoreau.

The Town of Concord landfill opened in 1954, and was closed to landfill activity in 1994. The Walden Woods Project has been working with Mass Audubon, Sasaki Associates and the Town to 'restore' a native grassland on the 30-acre capped portion; and hand it over to DCR as a part of Walden Woods (VFT Figure 1.1). The decision was grounded in Collins *et al* (2000), who put forward three Vision Plans for the site: (i) maintain the capped area as an open grassland; (ii) establish rotating succession areas; and (iii) allow parts of cap to reforest – with Vision 1 advanced. The landfill remains the single outstanding piece of unprotected land surrounding Walden Pond, with the Landfill Study Committee (2001:4) commenting, "The Landfill Site would be an important and significant asset to the Walden Pond State Reservation". The site is a prime example of restoring natural capital to an area, and of promoting a

landscape type compatible with the wider landscape, within the constraints of a polluted site[44]. Suggestive of Naveh's (1998) idea of cultural landscapes, Collins *et al* (2000:23) note, "The vegetation on Brister's Hill and the landfill can all be classified as cultural; that is, all of the current vegetation has been fundamentally shaped by recent human land use".

VFT Figure 1.1 | Panoramic view of the former Town of Concord landfill, illustrating the grassland planting on top of the capped site.

Of the Town's proposal for capping the site, a representative from Sasaki Associates (PL, Sasaki Interview) notes, "It was landscape architecture practiced by a civil engineering firm hired to be landscape architects – stick some trees along it. It had nothing to do with restoration of a grassland habitat". Taking this one step further, Mass Audubon drew upon its Grassland Conservation Program (established in 1993; see Mass Audubon 2001) to promote a mix of grass species for the landfill which would provide a compatible grassland habitat for the area, with a Mass Audubon representative[45] (SC, Mass Audubon Interview 3) noting "So it was cheaper to make the type of soil that we were recommending, and cheap enough that they could pay for the seed to put it on the landfill". Linking back to the fivefold restoration typology established earlier, the restoration of the landfill has drawn upon, and prioritises discourses of *reparation*, alongside the *removal of anthropogenic influences*.

Interestingly, amongst WWP representatives, Thoreau's Path on Brister's Hill is the only site within Walden Woods to be considered explicitly an example of environmental restoration, with restoration practices guided by discourses of *natural*

[44] However, a portion of the site is still used by CPW for activities such as storage of ploughed snow and street sweepings; and composting and wood chipping operations.

[45] Manages the Ecological Extension Service, a technical assistance program which supports landowners, land trusts and towns, amongst others, with ecological inventories, conservation and management planning, restoration, mapping, trail design, research, and interpretation. For the Walden Woods Project, has produced ecological inventories for the former Concord landfill and Brister's Hill, and consulted (alongside Sasaki Associates, Inc) on the restoration of the landfill, and the design and planning of Thoreau's Path on Brister's Hill. Worked alongside respondent represented in *Sasaki Interview*.

regeneration, *repair*, and the *removal of anthropogenic influences*. A contrast is drawn between the restoration of the landfill, and the restoration of Brister's Hill, and of the former:

> That is ecological restoration, but it's a different end point than the restoration that Brister's Hill is going to undergo over time [...] – that site was heavily altered and its restoration (essentially through benign neglect, but with a little bit of help from us) is going to go back to mature native forest (over time). So that will actually be restored to a landscape that looks more or less like it did before all that gravel extraction happened.
>
> (LM/SC, WWP Interview 1)

Brister's Hill provides an important opportunity to contribute to larger messages about "the land, landscape, restoration, landscape restoration, preservation – all of those values which are growing in importance in this country" (PL, Sasaki Interview). As the respondent of the above claim[46] (PL, Sasaki Interview) adds, "The expectation coming into this was a restoration". Brister's Hill as a 'restored space' is also evident in the language of the Walden Woods Project (2006c): "Like the capped landfill across Route 2, the Walden Woods Project has restored this small section of Brister's Hill with native grasses to provide habitat for some of those species and to enhance overall diversity of the site". A (natural) regeneration rhetoric is also apparent, insofar as: "The land here, degraded by sand and gravel mining in the mid-twentieth century, is slowly regenerating, again offering an excellent opportunity to observe forest succession first hand" (WWP 2006c). Discourses of restoration and natural regeneration appear as interchangeable when reading the restoration efforts at Brister's Hill:

> If you leave it alone, it will sort of take care of itself and come back. Because that is what truly has occurred in some areas of Brister's Hill [...] And what we did was just sort of encourage a couple of the areas to restore itself more quickly – you know, with planting some of the grasses again, and adding the apple trees and bringing those back, because those had been lost after the years of the gravel mining and the sand mining they had done in the area.
>
> (FI, WWP Interview 7)

Although the plant community was to remain relatively unaltered, damage to the site from off-road vehicles and fly-tipping required restoration. Thoreau's Path on Brister's Hill (VFT Figure 1.2) encompasses a loop path and 'reflection circle', the

[46] Involved with the planning, design, permitting, and construction of Thoreau's Path on Brister's Hill (working in collaboration with Mass Audubon). Worked alongside respondent represented in *Mass Audubon Interview 2.*

latter a "ring of granite, incised with quotations, [which] brings together a diverse group of leaders and thinkers whose words echo and extend Thoreau's, and whose wisdom, like his, is timeless" (WWP 2006b:9). Restoration practices serve to restore a connection with the land, through the writings of Thoreau. The Path highlights five important contributions made by Thoreau and his writings: conservation (Entry Meadow); social reform and commentary (Brister's Orchard); teaching and observing (Sand Plain); science (Forest Succession); and Thoreau's philosophy and influence on others (Reflection Circle) (WWP 2006a:4).

VFT Figure 1.2 | Thoreau's Path on Brister's Hill; top left: Restoration Area marker, top right: landscape installation, bottom left: Reflection Circle, bottom right: Thoreau's Path.

Even though restoration discourses are applied to the work of the Walden Woods Project, there is almost a reluctance to it, with one WWP representative (ED, WWP Interview 3) noting "when I think of the various things we're involved in, a lot of the time it seems to be protecting as opposed to restoring or altering the land, even if it's altering for a good way. [...] so depending on the land that we're working with or thinking about, there may be more restoration involved". This is supported by another representative (PM, WWP Interview 4) who argues "for land, we would say conservation or preservation or protection, more than we would say restoration". Despite this demarcation, *restoration* still features, as evident in the 'Restoration Area' marker in VFT Figure 1.2. Such reluctance may be grounded in a recognition – or fear – that the term will give the wrong impression. It is a matter of perception, and understanding and image. However, the Walden Woods Project (2001:2) does

acknowledge that: "Successful ecological restoration in the heart of Walden Woods, in the very place where Thoreau argued for the preservation of land and its value for 'recreation and instruction', will act as a powerful model of stewardship". The idea of stewardship (and maintenance) is prominent across lands owned by the Walden Woods Project: "Most of the other properties (for which we are stewards) are properties that are *basically in the state that they were in when we bought them*" (M, WWP Interview 5)[47].

Although the restoration work at Walden Pond has been undertaken by DEM/DCR and Walden Pond State Reservation, and not the Walden Woods Project, it is still important to draw attention to additional restoration efforts within the Walden ecosystem. Such analysis has the potential to highlight subtleties in the uptake and interpretation of such discourses, and its implications for the wider Walden landscape (VFT Figure 1.3). While every other case examined through the Virtual Field Trips illustrates restoration senso lato, restoration practices at Walden Pond are illustrative of restoration senso stricto (Aronson *et al* 1993), for they prioritise discourses of *replication* (and *return*), and, to a lesser extent, the *removal of anthropogenic influences*.

Restoration efforts at Walden Pond commenced in the late-1950s, with the restoration of Red Cross Beach (Maynard 2005; Wheeler 2005). In 1957, Middlesex County began work to create a new beach area – and were taken to court by the Save Walden Committee (formed within the Thoreau Society) for destroying 'the Walden of Emerson and Thoreau' (a social construct with much emotional weighting) as set down in the 1922 Deed of Gift[48]. Part of the bank was cut away and moved into the Pond, and trees were felled. As a consequence, in 1960 the Commissioners were required to:

> Restore 'the Walden of Emerson and Thoreau', to the extent that restoration is practicable [...] 'to restore much of the sylvan charm of the denuded area' by proper replanting of trees and shrubbery, and that such replanting and

[47] Walden Woods Project properties include: Bear Garden Hill (1991, 25 acres); Boiling Spring (1992, 25 acres); Brister's Hill (1993, 18.6 acres); the Thoreau Institute (1994, 18 acres); Fairhaven Hill (1996, 10.36 acres); Goose Pond land (2002; 26 acres); Bilodeau land (2005, 6 acres); Pine Tree Farm (2007, 8.9 acres); and Baker Farm Road (2007) (Tonneson & Company 2007; Thoreau Institute and WWP 1998).

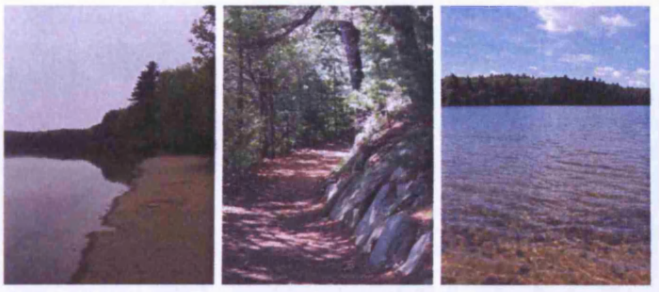
[48] Yet somewhat paradoxically, the Town had agreed three years earlier to site a municipal landfill within Walden Woods, without opposition.

> reforestation could be accomplished more effectively by removing the roadway and building new contours with additional fill [...]; that it would be practical to restore the demolished section of the ancient foot-path encircling the pond [...]; and that the proposed new bathhouse would 'mar the beauty of the shore'. [...] steps should be taken to prevent erosion in the area and to restore the foot-path.
>
> (Commonwealth of Massachusetts 1958:12)

Despite this, one telling remark from the County Commissioners of Middlesex County (1958) was: "After 115 years, who knows what was 'the Walden of Emerson and Thoreau'", linking back to issues of landscape integrity. For one respondent (H/SC, FOTC Interview 1), neither Brister's Hill nor the landfill is a true example of restoration (due to the removal of substrate and glacial deposits), yet of Red Cross Beach: "They brought in deposits, restored the original contours, and then planted trees, so that now you can hardly tell where that was. That in my opinion is ecological restoration".

In the 1960s, Middlesex County[49] applied a particular reading of restoration to the Pond area, and introduced timber cribbing at multiple sites – representative of stadium seating (PL/LA, Mass Audubon Interview 1) – due to the County's explicit focus on recreation. Other efforts to stabilise (and restore) the shoreline have involved the use of rip-rap, paving sections of the trail, and a boardwalk – none of which remain today. By the 1980s, the interpretation of restoration had shifted towards a need to "de-emphasise the recreation and re-emphasise the historical aspects" (PL/LA, Mass Audubon Interview 1); in effect to restore 'the right kind of connection' with a particular, preferred past.

[49] It was during the mid-1970s that management of Walden Pond State Reservation was transferred from the Middlesex County Commissioners to the Department for Environmental Management (later the Department of Conservation and Recreation).



VFT Figure 1.3 | Walden Pond; top left: WPSR Restoration Schedule 1996-1997/1997-1998, top right: DCR trail request, bottom left: an early example of restoration at Walden Pond: the restoration of Red Cross Beach and its slopes, bottom centre: field stones as slope stabilisation along the trail, bottom right: shoreline stabilisation.

The term *restoration* is used explicitly by Walden Pond State Reservation, as evidenced on a panel at the entrance to Walden Pond on Route 126, outlining the restoration schedule for the Pond. It cites: "Walden Pond is undergoing a major trail improvement and bank restoration project. [...] Once completed, the shoreline will be restored to its native condition, not seen in 75 years" (onsite interpretation 2007). Furthermore, the restoration schedule of 1996-1997/1997-1998 proposed a bio-engineering approach, primarily through brush layering, bundled fascines, and live stakings; as well as restricting access to the shoreline. In addition, the concrete pier and two concrete changing rooms were removed, and the beach restored.

At a micro scale, the Walden Woods Project is working in partnership with a private landowner on an invasive species removal project – the removal of glossy buckthorn (VFT Figure 1.4). The removal of invasive species is subsumed under wider restoration discourses of *replication* (and *return*), and is a distinction made only by WWP representatives, hence its minor focus here as a specific interpretation of environmental restoration (see also SER International 2004; Throop 2000b). This example is illustrative of a less dominant discourse of environmental restoration across the case studies (with fluidity in definition accommodating multiple discursive strategies (Rydin 2005)), and one which again has different implications for the environmental condition. The removal of exotic or invasive species raises concerns over the value and disvalue attached to particular species, but is also grounded in maintaining the integrity of the landscape. Framed within a discourse of 'appropriateness' (and to some degree, even 'naturalness'), it remains consistent with the landscape (and writings) of Thoreau.

VFT Figure 1.4 | WWP Invasive Species Removal Project, Sudbury Road, Concord.

Begun in 2006 with four test plots – each employing a different management technique: (i) manual, (ii) and (iii) cut and herbicide, and (iv) control (Field Journal: WWP) – the project was extended in 2007. In this instance, restoration serves to ensure the 'local' provenance of plants onsite, with numerous methods trialled to test this. This practice may provide a protocol for use by other organisations, and as Burne (2007:4) also acknowledges, "This project has the strong potential to serve as a model of citizen participation in land management efforts that address a significant threat to the ecological integrity of many landscapes, including Walden Woods".

Virtual Field Trip 2 | *Environmental Restoration and the Eden Project*

Is the site restored? Essentially it is. It is a fantastic restoration project; but it also has a life beyond its restoration.

(LA, Eden Project Interview 5)

Early restoration practices at the Eden Project represent a reading of environmental restoration similar to that applied to the Concord landfill, insofar as it promotes restoration of a landscape type not previously recorded onsite (a less extreme interpretation of Turner's (1994) idea of synthetic landscapes and 'terraforming'). Such restoration is nevertheless concerned with connectivity (and compatibility) with the wider landscape context, alongside ecological function, prioritising discourses of *reparation*, and the *restoration and creation of natural capital*. Of restoration and Eden, one Eden Project respondent (LM, Eden Project Interview 7) notes: "that is the most fundamental thing that it is, and most definitely was [...] The whole project leads out of the restoration of a derelict mining landscape" (VFT Figure 2.1). Discourses of environmental restoration are used not only to describe efforts to stabilise and revegetate the slopes of the pit, but also within the context of more contemporary operations of the Project (such as its Post-Mining Alliance), in some

instances linking to organisations which have responsibilities or liabilities for restoring damaged land.

VFT Figure 2.1 | Stabilisation and revegetation of the Bodelva china clay pit; top left and right: evidence of stabilisation along the Link Lodge service road, bottom left and right: revegetation of the slopes – behind the Core, and along the Link Lodge service road.

Extending discourses of restoration into the claylands, Imerys are undertaking restoration after china clay extraction. A major landscaping initiative, it includes reducing the angle of the spoil slopes from 35° to between 5° and 12°, so that they can be landscaped and planted (Field Journal: Eden Project). However, general thinking has been reversed, insofar as local communities are now fighting to retain the tips as a reminder of the history of the area (and its industrial heritage), rather than landscape them (Field Journal: Eden Project).

The Eden Project has adopted elements of restoration discourses, accentuating horticultural practices (as promoted by Hall 2005; Jordan 2003; Turner 1985):

> It's taken a lot of principles about ecological restoration and established plants, especially around the periphery, where we've got the hydroseeding of native plant species, particularly grasses and legumes, and native trees. It's taken that on board. But it's pushed the boundaries completely, certainly as you get more and more into the pit. There's a blurring between straightforward ecological restoration and horticulture. And you've got to ask yourself if they're not the same thing, really. They could be in some circumstances. Because if you're establishing plants, it's a *horticultural* practice of some description. But it's not the usual; Eden pushes the boundary on all these things and it sort of prompts people to ask these sorts of questions, and I can't really give a proper answer, because it's not strict ecological restoration, but neither is it not ecological restoration.
>
> (SC, Eden Project Interview 2)

As a result, restoration at the Eden Project has produced a much more designed, manicured and managed landscape than restoration practices in the National Forest or Walden Woods.

Underlying the restoration activities within the Bodelva pit is the use of overburdens of quarry waste in the earthworks for the site's development (Ove Arup and Partners 1996b). Although the development of Eden provided an opportunity to reclaim and subsequently restore a site, Ove Arup and Partners (1996a:5) acknowledge that: "Some of the older slopes have revegetated naturally, and there are pockets of residual vegetation which survive from the landscape pre-mineral extraction". The resulting landscape condition is illustrated in VFT Figure 2.2. The Eden Project, while restoring a richer ecology to a bare landscape, is not restoring a particular past – though there are elements of this in the gardening scheme. It is an approach which epitomises Higgs' (2003) 'nature by design', yet at the same time contributes to concerns raised by Cowell (1993) and others that nature can be 'built to order'.

VFT Figure 2.2 | The outdoor landscape of the Eden Project.

Discourses of *regeneration* (both *natural* and *social*) in fact predominate at the Eden Project, which counters Kitchen *et al*'s (2006) concern of a neglect of 'environment' and 'nature' within regeneration literatures. As evidence of this, one respondent (LA, LUC Interview) notes, "In landscape terms, I think of it as a regeneration". This is complemented by the view of an Eden respondent (ED/SC, Eden Project Interview 6) thus: "We use 'regenerate' like it's going out of fashion! [...] 'restorative landscape' we use sometimes. But we use 'regenerate', really, as generating social understanding; environmental awareness. It's fixing it in all three strands of sustainability". The Eden Project is described as a 'major post-mining regeneration project' (Whitbread-Abrutat 2006:1) and a "unique reclamation project, [...] taking many of the principles of conventional mine rehabilitation..." (Whitbread-Abrutat 2006:2). In the context of the Eden Project, there is further cross-contamination between discourses of regeneration, rehabilitation, and reclamation.

Furthermore, regeneration refers to "regenerative aspects of economic and social activity through intervention on derelict or underperforming assets, both capital and environmental" (M, Eden Project Interview 9). Eden serves as a regeneration catalyst, highlighting opportunities in horticulture, agriculture, and wider environmental issues. Restoration practices are also framed as a vehicle for delivering *sustainable development*, incorporating not just an environmental concern, but also socio-economic considerations. Restoration practices are extended into the social, with Harvey's (1996) aphorism that all ecological projects are simultaneously social and political projects, and vice versa, demonstrated quite overtly here.

The appropriateness of restoration discourses at Eden is raised by project representatives such that, "in a lot of cases what we were doing wouldn't be what would be classed as restoration anyway – it's more reclamation than restoration" (ED/SC, Eden Project Interview 1); and with regard to the use of discourses of environmental restoration: "Occasionally and clumsily. Eden transformed rather than restored" (M, Eden Project Interview 9). In the latter quote, there is also an element of self-criticism regarding the practices undertaken, suggesting an awareness of subtleties in terminology – and the associated meanings – but not always a clear demarcation between them. What emerges is an interchange between restoration and regeneration, which extends beyond the physical and environmental.

There is one further example I wish to draw upon to highlight the Eden Project's interpretation and mobilisation of environmental restoration discourses – that of Wild Cornwall. Wild Cornwall (VFT Figure 2.3) is an exhibit at Eden which serves to represent the native Cornish landscape, yet it remains a manipulation. For Mabey (2005:37-38), Wild Cornwall is "a mocked-up exhibit of the country's green fringes, [...] This is a landscape of pure artifice". In defence of such a claim, Wild Cornwall is, for one Eden representative, the best introduction to the site as it illustrates "what we can do; bring the wild back into a scarred landscape" (unnamed remark in Field Journal: Eden Project). As another respondent (SC, Eden Project Interview 8) notes, "probably in the strictest sense, Wild Cornwall would be an area which I would very definitely call 'restoration' because they've tried to recreate something there. [Yet] it may be less restoration and more regeneration". Prioritising discourses of *natural regeneration*, restoration actions within Wild Cornwall have incorporated 'low-

impact' intervention and manipulation. Even though physically, it scarcely embodies restoration, symbolically it communicates messages of restoration to Eden audiences.

VFT Figure 2.3 | Representation of Wild Cornwall.

As displayed within the yurt exhibit, the restoration element of Wild Cornwall is evident in its capacity to address and promote the real-time restoration and conservation of Cornish heathland and Atlantic woodland within Cornwall – namely through the Atlantic Coast and Valleys Project and the HEATH Project. This is complemented by a statement from Land Use Consultants (2003:103) with regard to the Bodelva landscape character area: "From a landscape management perspective, consideration should be given to restoring heathland habitats, particularly on elevated areas where they may be linked to existing habitats" – Wild Cornwall has a role to play in highlighting opportunities for heathland restoration within the china clay area.

Virtual Field Trip 3 | *Environmental Restoration and the National Forest Company*

Within the National Forest, the application of discourses of environmental restoration is determined by the wider land use context (and the quality of the land). As a NFC respondent (PL/LM, NFC Interview 4) notes, "we use it extensively when we consider restoring derelict, previously mined land – converting it for Forest purposes. That would be regarded as a restoration. If it's an arable field, we'd call that conversion; that's not restoration". Yet at Eden – a mined site – *regeneration* is employed. The above respondent (PL/LM, NFC Interview 4) goes on to note: "We may refer to

'restored land'. We don't define the project as being about restoration as a whole, though in part it's been about the reclamation and restoration of large areas of derelict land in the heart of the Forest".

There is a degree of professional 'routinisation' of language; and as evidence of this, one need only turn to the National Forest Strategy (NFC 2004b) and Biodiversity Action Plan (NFC 2004a), and their use of restoration (and regeneration) discourses. Within the Strategy, restoration is applied to mineral workings, derelict land, and landfill sites (with reclamation applied interchangeably to derelict land); to historic parkland landscapes and historic landscape features such as hedgerows and stone field walls; and to built heritage features of the Forest (NFC 2004b). Regeneration features in a socio-economic context, with one chapter in the Strategy entitled 'Regeneration and the Economy'.

The language employed throughout the Biodiversity Action Plan (NFC 2004a) is much more diverse: restoration is synonymous with natural regeneration, 'bringing back', re-creation, conservation, reclamation; and complementary to enhancement, creation, expansion, maintaining, protection, management, redevelopment (NFC 2004a). Regeneration has socio-economic connotations in the Strategy, but within the BAP, it is preceded by natural-, thus dramatically altering its meaning. In the Glossary, 'restoration' features in definitions of the Countryside Stewardship Scheme (CSS); Habitat Action Plan; habitat re-creation (or habitat restoration); the Habitats Directive; and Special Area of Conservation (NFC 2004a). Habitat re-creation (or restoration) is defined as "Land management action based on restoring a habitat on a site where it has previously existed, but subsequently been lost" (NFC 2004a:84).

A further concept is put forward within *The National Forest: An Exemplar of Sustainable Development* (NFC 2007a), that of 'land recycling'. It is seen as an umbrella concept, for it "promotes the *restoration* of brownfield land to woodland, biodiversity, recreation and tourism uses, to help achieve the Forest's creation. Derelict land *reclamation*, *restoration* of mineral workings and landfill sites and development-related planting all contribute to this" (NFC 2007a:13; emphasis added).

As with the Eden Project, dominant restoration discourses within the NFC are those which promote the achievement of *sustainable development* objectives (see also Beaverstock *et al* 1997), and are interchangeable with *social regeneration* discourses. This point is qualified such that "rather than talk about restoration, I talk about

regeneration – which tends to mean more to me in terms of what the Forest is creating than restoration does [...] we will talk about social, economic, and environmental regeneration" (PL, NFC Interview 1) – with regeneration more overtly about the social and economic. As noted in the NFC's 2006 Corporate Plan (NFC 2006:2), Forest creation is "contributing significantly to the environmental, economic and social regeneration [...] of the English Midlands". As Cloke *et al* (1996b:164) also note, the Forest could "help regenerate both local employment and the degraded landscape". Restoration is sidelined in favour of regeneration or, perhaps, a 'reclamation philosophy' (LM, LCC Interview 2).

The National Forest, and particularly its capacity to stimulate environmental, social and economic regeneration has been the focus of much academic research (Morris and Urry 2006; Kitchen *et al* 2005; Beaverstock *et al* 1997; Cloke *et al* 1996a, 1996b). Existing research has also contributed to further subtleties in language, for as Morris and Urry (2006:10) note, the NFC is "restoring damaged landscapes", but also regard the practice as "landscape regeneration through afforestation" (2006:12). Moreover, 'reclamation' (Cloke *et al* 1996b) and 'rehabilitation' (Beaverstock *et al* 1997; Cloke *et al* 1996b) also feature in analysis of Forest activities. However, such subtleties have not been commented on, or investigated further.

As restoration discourses are applied predominantly to the coalfield area and former mineral workings, Conkers Discovery Centre and Sence Valley Forest Park are analysed as practical examples. The Ashby Canal also features, as an additional case through which to explore the mobilisation (and uneven resonance) of discourses.

In 1996, the Heart of the National Forest Foundation bought land within Bath Yard (formerly occupied by the Moira Colliery Company, and more recently, British Coal) to construct a visitor centre at the heart of the Forest – Conkers Waterside (established in 1999). Expansion led to the development of Conkers Discovery Centre, on the site of the former Rawdon Colliery, and both sites (opening as one in 2001) lie centrally within the proposed Leicestershire Forest Park. My focus here is the Discovery site, composed of woodlands, lakes, trails, and the Conkers Discovery Centre (VFT Figure 3.1).

VFT Figure 3.1 | Conkers Discovery Centre; top left and centre: Palace of Westminster Woodland, top right: Wildlife Pond, bottom left: Wildflower Glade, bottom right: lake and Discovery Centre.

I wish to draw attention to some of the features of the Discovery site supporting restoration discourses. The spoil tip of the former collieries has been dramatically altered by reshaping the ground; topsoil has been brought in, and planting established – thus echoing restoration discourses which prioritise the *restoration of natural capital*. There is interpretation at various points highlighting the 'woodland mix' that has been planted. The Wildlife Pond is the only feature in the park to remain from when the site was a colliery, and was protected throughout the site restoration. It has subsequently witnessed natural regeneration, with reeds and rushes. The Wildflower Glade has been developed to showcase different approaches to the creation of wildflower habitats. Despite this, onsite interpretation reflects *regeneration* discourses

The restoration of the Ashby Canal (and Ashby Canal Bath Yard Basin), led by Leicestershire County Council, provides another reading of discourses of environmental restoration. The initial closure of the canal followed the cessation of deep mining (coal), and subsequent subsidence which undermined the canal (with successive breaches and closures between the late-1910s and the 1960s). Restoration efforts have concentrated on restoring and reconnecting the isolated Moira Furnace length (2 km between Donisthorpe and Moira in the heart of the Forest) (VFT Figure 3.2), whilst maintaining the rural character of the canal (PL/LM, NFC Interview 4). The eventual target is to restore a 4.5 km segment from a current terminus at Snarestone to a new canal wharf at Measham.

The Moira Furnace length has subsequently hosted the Moira Canal Festival (beginning in 2004) with Conkers Waterside and the Moira Furnace Museum. The Ashby Canal is promoted as a leisure area, encompassing industrial heritage, rural recreation, and nature conservation. Drawing insight from *social regeneration* and *sustainability* discourses, the canal restoration is taking forward tourism-led regeneration. Thus, in this instance, a broader regeneration framework dominates.

VFT Figure 3.2 | The restoration and re-watering of the Ashby Canal.

The canal restoration (and the development of Conkers) features in the *Ashby Woulds Regeneration Strategy* (1995), which mentions restoration discourses only as "an opportunity not only to restore current dereliction but to create a new forest landscape worthy of the Woulds' position in the heart of the National Forest" (SAM Design Consultants 1995:1). The strategy includes proposals for 'landscape regeneration', with restoration considered an element of socio-economic regeneration. As the National Forest Company (2007a:41) notes, "The Ashby Woulds is an excellent example of how environment-led regeneration of a declining industrial area can be achieved based upon sustainable development principles".

Sence Valley Forest Park[50], opened in 1998, provides another example of restoration as applied to former mineral workings. A former 150 acre (60 ha) opencast colliery site, the landscape now constitutes woodland, grassland, a wildflower meadow and three lakes, connected by a series of paths (VFT Figure 3.3). The site promotes the *restoration (and creation) of natural capital* (Aronson *et al* 2007a), and through this, provides economic gain, as tracts of land planted with Corsican pine, larch and poplars will provide an income when thinned in about 20 years.

[50] The site is now owned by the Forestry Commission (with ownership transferred from LCC).

VFT Figure 3.3 | Sence Valley Forest Park; top left and right: Horseshoe Lake, bottom left and centre: meadow and woodland, bottom right: Goss Water.

Commenting on the use of restoration discourses within the National Forest, one respondent (LM, LCC Interview 1) notes, "I think probably only on a site like Sence Valley. We tend to use regeneration a lot more. So regeneration and woodland management". This is supported by a representative from the Forestry Commission (LM, FC Interview 1) who notes, "Most of it though is regeneration – planting new forests – as sites may or may not have had woodland there before". An interesting point is raised by another respondent (M, SWT Interview) with regard to the work of the Staffordshire Wildlife Trust: "Apparently, for our landscape work, we want to 'reconnect, restore and re-create', but with the public not able to get behind the long-established 'reduce, reuse and recycle', I suspect that whatever 're-' word we use, it'll be amongst the people who know about the subject anyway". As such, the circulation of 're-' language is arguably geared towards professionals, or grant-funding bodies, as two examples – with an assumption of almost discounting other groups, and perhaps restricting understanding of discourses of environmental restoration, and as a consequence, their power, influence and impact.

* * *

The above examples illustrate the diversity surrounding the mobilisation of environmental restoration discourses. Such diversity is nevertheless framed within what Light (2002, 2000) terms benevolent (rather than malicious) restoration. The

concepts are not mutually exclusive, but often many are applied to the same context, with their definitions and practices employed interchangeably – highlighting 'new geographies of restoration' (through the interplay between cultural, economic and political influences). Each project has its own approach to restoration, and as such, 'restored spaces' are created which are very much context-embedded, arguably creating, and informed by, what could be termed a 'local dialect of nature' (extending Wilson's (1992) 'culture of nature'). 'Nature' is interpreted but also manifested differently at different sites (hence the idea of a 'local dialect'), and this in turn will feed into and thus determine rationalisations of restoration. Manifestations of nature produce varying 'dialects', and thus various styles of restoration – creating a specific understanding within a fixed location, which then at a national or international level assures a mosaic of terminology and restored landscapes.

Discourses of environmental restoration are extensive; subject to numerous interpretations – with no collective philosophy. Different styles exist, with each highlighting the vast potential available to different landscape systems. However fluid and indefinable discourses of environmental restoration may be in contemporary environmental policy and planning, it remains a necessary concept both for some conservationist and even preservationist interests, and proponents of wider sustainability discourses. In some projects, the aim is to make restoration visible to the public; in others, land is 'invisibly' restored, providing a backcloth on which some other ecological narrative can be played out. Within the case studies, restoration is rarely, if at all, used as a negotiating tool in planning policy. Nature is commodified only insofar as to provide a resource for conservation, education and research endeavours (alongside tourism) (Castree and Braun 1998).

To varying degrees, restoration efforts have sought to restore ecological, personal, socio-economic and cultural values (Clewell and Aronson 2007) to particular landscapes. The Eden Project has promoted socio-economic and cultural values; the National Forest Company, ecological, socio-economic and cultural values; and the Walden Woods Project, ecological, personal and cultural values. Put a different way, evident across the case study sites is the promotion of what Clewell and Aronson (2006) term idealistic rationales for restoration, with the NFC also appearing to promote pragmatic rationales (for reference, see Section 2.4). Although variation exists in the interpretation and mobilisation of environmental restoration discourses,

there are no marked differences between North American and UK practices. While the Eden Project has created an entirely new ecosystem which has never before existed on the site (Light and Higgs 1996), the National Forest Company and the Walden Woods Project have sought to restore an approximation of prior structure and function (Pfadenhauer 2001). On this latter point, the National Forest Company has focused primarily on the restoration of ecosystem services, while restoration at the Walden Woods Project has centred on both the species level (Brister's Hill) and whole ecosystems or landscapes (Concord landfill; Walden Woods) (as Ehrenfeld 2000).

6.2.4 Manipulation, Intervention, and the Need for Restoration

Environmental restoration is not always an appropriate (or indeed viable) practice. One respondent (M, CLI Interview) raises an interesting point in remarking that instead, what should be advanced is not a restorative paradigm, but simply that "We can only work to reduce impacts and set the course for providing a natural resource for the future that provides some of the benefits that once existed in the context of current and future uses". As another respondent (ED, Eden Project Interview 11) also notes, "I think extinction is natural, and sometimes a good thing. Restoration is not an absolute value". The question *should one always restore?* is one which continues to be prominent in debates about environmental restoration. If one should restore, there is the associated concern of: *when should society intervene?*

In light of the fact that restoration, by its very nature, necessitates some degree of intervention in a landscape, the question of when to intervene unsurprisingly remains a disputed and contested one, and continues to dominate the ethical debates about environmental restoration. Discourses of justification are explored, to determine the 'necessity' of restoration. Two perspectives emerge amongst project actors with regard to intervention:

(i) *that society should always intervene to safeguard landscapes*:

> Always. The local communities must always play a role in the future of their resources.
>
> (M, CLI Interview)

> At every possible opportunity along the way. It is about looking at things holistically so that we can meet environmental objectives.
>
> (PM, FR Interview 2)

> Probably 20 to 60 years ago! So I'd suggest right now, as even if climate change is not accepted completely, key resources that society depends on today do seem to be acknowledged to be finite.
>
> (M, SWT Interview)

And (ii) *that society should intervene when it is deemed necessary*:

> When it recognises the need for a function or symbol that restoration could deliver.
>
> (M, Eden Project Interview 9)

> Society should intervene at a prevention point to avoid the damaging and costly process of degradation and restoration.
>
> (PM, EWA Interview)

> It should be the obligation of society to intervene when something of historic and environmental significance will be lost forever.
>
> (M, FOTC Interview 2)

> Whenever there is an opportunity to change things for the better.
>
> (PM, Landlife Interview)

> When it decides to. Conservation is a social process to maintain ecosystem goods and services.
>
> (PM, SCF Interview)

Every landscape has seen some form of intervention, with all three study sites promoting socio-natural, indeed cultural (Naveh 1998), landscapes. Setting the context for exploring manipulation and intervention across the project landscapes, a garden analogy is used, exemplifying this conflictual issue. In one respect, "It's natural in the same way that somebody's back garden is natural. It's a managed landscape; it wouldn't exist without human intervention" (SC, Eden Project Interview 2). However, the garden metaphor is countered by Smit (2000:217), noting a garden is "one of the ultimate human conceits, living architecture, perverting the course of nature to human ends. Leave it for a moment and the conceit is revealed for what it is, as the land reverts to nature's rhythm and imperatives".

The question arises as to what degree of manipulation and intervention is (socially-)acceptable in a landscape, for as one respondent (PM, HEATH Project Interview) notes, "if you are restoring, are you not changing what it once was anyway?" An example of unacceptable manipulation and 'control' is put forward by Wheeler (1957 in Wheeler 2005:196), with regard to the Save Walden Committee and Red Cross Beach: "One can only suppose that the pond in its natural state did not attract enough people. Possibly more people will come when we have made it entirely

artificial and synthetic". In the above claim, manipulation and control are considered to denaturalise nature (counter de Saint-Exupéry 1943), so as to conform to, and meet, societal expectations. The issue of the level of intervention is raised by another respondent (M, RESTORE Interview), who argues: "some people take it to the extreme – they are not in favour of natural ecosystem restoration. They are craftspeople, almost; they like manipulating the landscape". Manipulation and intervention form part of a paradox inherent in environmental restoration practices, for restoration simultaneously necessitates both manipulation of, and maintaining respect for, nature (Jordan 2003).

Despite the argument that society has irreversibly altered and affected every landscape, and that this thus serves as justification to continue to alter it, this claim is disingenuous and misguided, as: "We talk about human intervention, but you can argue that the forces of nature predominate over humans" (M, RESTORE Interview). This may be possible in some small ways (Snyder 1998; Soper 1996, 1995) – to take the example of snowfall, Thoreau (1843 [2001]:105) echoes, "With so little effort does nature reassert her rule, and blot out the traces of men" – but this is certainly not the case universally, nor permanently.

Any manipulation or intervention in a landscape will not be undetectable – to use the albeit stark example of forest clearing: "seen far or near, you know at once to be man's work, for Nature never does it" (Thoreau 1864 [2004]:233). As one respondent notes, "I think that our imprint is on the entire landscape. And to the extent we can understand the needs of various species, and the role that various species play in a functioning ecosystem, we can have a role in fine-tuning things. People will say you're playing God if you think you can control all the various species" (SC, Mass Audubon Interview 3). Similarly, another respondent argues, "we had to do it out of necessity – there is a degree to which we have to manipulate it to get it back. I mean, you're still going to have your fingerprints on it" (LM, WPSR Interview 2). However, interventions in the landscape can be undertaken subtly (or, there is a desire to be subtle) – with low impact manipulation promoted – as evident in the examples below.

Within the context of the Brister's Hill site, an interesting case emerges concerning the planting of pitch pine and white pine. There is a predominance of white pine in the landscape, to the detriment of oak and pitch pine stands which might have been more common in the region before the land was cleared (SC, Mass

Audubon Interview 3). Pitch pine is favoured in areas with sandier soils, and where fires occur (such as Walden Woods), as it has a better resistance than white pine. For this reason, efforts at Brister's Hill sought to promote the establishment of pitch pine stands, not only for its congruence with the 1840s, but for its physical characteristics (Figure 6.5).

Figure 6.5 | Pitch pine and white pine stands at Brister's Hill.

Fire is not a new phenomenon in Walden Woods – cinders and sparks from the Fitchburg railroad frequently caused forest fires along the right of way, and Thoreau accidentally started a fire at Fairhaven Bay in 1844 (Maynard 2005). As one respondent remarks on the normality of fire, "Fire is normal in Walden Woods, but what worries me is *fire suppression.* [...] This ecosystem – the Walden ecosystem – there will be a fire at some point. I don't doubt that" (H/SC, FOTC Interview 1). A replacement for suppression is necessary, yet as another respondent adds, "it's not going to be a perfect replacement, because we're going to lose certain things that may have been left by the fire, or take things" (SC, Mass Audubon Interview 3). Davis' (1999) examination of fire and its suppression in Malibu and Los Angeles connects to debates of manipulation and intervention here, for it locates concerns of nature and naturalness in approaches to managing and regulating the (natural and built) environment. Manifestations of 'nature' determine (restorative) actions and interventions that are appropriate for a site, and that are compatible with the wider landscape context.

At the Eden Project, the entire site is an example of manipulation and intervention in the landscape – not least because of the site stabilisation, revegetation, and new plantings. Of the project landscape:

> There are some instances where it is ecological restoration, obviously, and other areas where you think, well, if you're creating a North American prairie outside in a clay pit in Cornwall, you're not restoring it to what was there

> before – but previously there was nothing there anyway because it was underground. Is that ecological restoration? Or is it gardening? Or what? You could say the same about the tropical rainforest or the fynbos exhibits.
>
> (SC, Eden Project Interview 2)

For illustration, the North American prairie landscape is represented in Figure 6.6.

Figure 6.6 | The Steppe and Prairie exhibit at the Eden Project.

With the above examples illustrative of soft engineering approaches, a comparison can be drawn with hard engineering efforts at Walden Pond. Although highlighted in Section 5.3, the field stones around the shoreline represent intervention in the landscape. As it was neither possible to rebuild the sandy slope at its prior angle, nor maintain a slope at a lower gradient, the stones were necessary to stabilise and prevent further erosion of the shoreline, due to the wave action of the Pond. Efforts were made to disguise the stones in the wider landscape (and complement the natural terrain), with topsoil used to fill the gaps, and native planting within that (PL/LA, Mass Audubon Interview 1). Light fencing also runs along the shoreline path to define access, but also for safety reasons:

> In an ideal world you'd want them out of there because they look awful, but they're serving a purpose, and in a way it does provide a kind of security for people, I think, because they know exactly where to go. And again, given the fact that we're dealing with local people as well as people from the city, you know that's probably not a bad thing. We're dealing with people that aren't familiar with the Woods; they're nervous about the Woods.
>
> (LM, WPSR Interview 1).

This echoes Eden *et al*'s (2000) work on river restoration which argues that for all the ecological debates about restoration, practical concerns like safety still intrude.

Interestingly, what emerges through analysis of manipulation and intervention in the landscape is the juxtaposition of 'natural' and 'designed'. This is borne out by one respondent from the Forestry Commission, who argues of the National Forest: "it will

look natural because of the designs that go in" (LM, FC Interview 1). Whilst this may appear somewhat contradictory, it highlights the dualism inherent in the practice of environmental restoration, and is resonant of Higgs' (2003) view of 'nature by design'. With explicit reference to heathland areas, 'natural' and 'managed' are also defined temporally: "In its lifespan, I would say it is natural, but in its context, it isn't because it is managed" (PM, HEATH Project Interview).

What all this links back to is a naturalness that may be artificial (compare with Elliot 1997, 1982; Katz 1992). Such a dualism is evident at Walden Pond, as the shoreline had been so damaged by human use that "you had to help Mother Nature by inserting some things in which were not compatible in one respect, but over time I think it's been successful" (LA, WPBOD Interview). This is echoed by a WPSR representative (LM, WPSR Interview 2), for whom "The trouble is, with that kind of engineering, unless you let nature – over thousands and thousands of years – create something, it's going to look artificial, no matter what you do in terms of reconstructing it". There is a demarcation between processes of natural regeneration and practices of restoration, yet a degree of artificiality is accepted in the knowledge that restoration complements natural regeneration.

The synthesis of nature and artifice can contribute to the 'best of both worlds', with a WPSR representative suggesting, albeit within the context of Walden Woods, "the idea was to bring it to a point that is as natural as possible, using the native plants – but at the same time, it's designed to be tough, which the natural situation wouldn't have been" (LM, WPSR Interview 1) – linking back to the issue of appropriateness addressed in Section 5.3. The language used to describe intervention in a landscape is a good indicator of where 'nature', 'environment' and 'landscape' feature in wider nature-society relationships. As examples of this: "We didn't do anything to it until we started to *groom and create* Thoreau's Path" (FI, WWP Interview 7); and "unless we *decide that we want it as a showcase for succession*" (LM/SC, WWP Interview 1). Even though the examples could depict restoration as a mechanism for control, this is not a widely adopted philosophy among project actors.

6.3 Environmental Meanings and the Value of Nature

6.3.1 Exploring the Landscape Condition

One cannot define restoration – nor understand its value and complexities – without also paying attention to the definition of concepts such as degradation, naturalness, and wildness. Any approach to explaining the landscape condition will subsequently inform the uptake, interpretation and mobilisation of discourses of environmental restoration. The practice of restoring a degraded landscape may differ significantly to restoring a landscape which is considered to have retained some natural and/or wild components. Such recognition serves to highlight how the landscape may be socially constructed, and thus the actions deemed necessary (and indeed, appropriate) in order to 'restore' a site. It serves to explore how restoration is grounded in (and determined by) the landscape condition – that is, context-embedded. What is considered as degraded, natural, wild (even restored) is very much an issue of perception, with repercussions for restoration efforts. Granted that all these terms contain cultural norms, shared by environmental project managers, the challenge of environmental restoration is not one to be undertaken lightly.

What follows below are 'representations of the landscape condition', which in the extreme could be read as purely social constructions of landscape ideals – yet the two co-depend on certain material qualities. While references to terms are often related to specific contexts, they may also draw upon supra-local systems of meaning (such as law, science, ecological conventions, values).

Degradation

Environmental restoration encourages *recovery* of the landscape (as per the SER International (2004) definition advocated throughout this thesis), and as such, the preceding environmental condition – that of degradation – has implications for restoration discourses. Claims of degradation are conflictual and contested, as witnessed in the examples of the Rocky Mountain Arsenal in Denver (Cronon 1996a) and the Green-Line Area in Beirut (Møystad 1999), such that:

> Beauty is in the eye of the beholder. You could argue that Chernobyl is degraded, but it has a high biodiversity. It is degraded by our definition, but

> its ecological value is high nonetheless. It is the same for restoration – it all depends on what you are looking at and how.
>
> (ED/SC, Eden Project Interview 4)

Conceptions of degradation and devastation are extensive, yet four themes are identifiable amongst project actors within this research: (i) temporality (that is, defining a reference point against which to gauge degradation); (ii) an imbalance caused by human presence in a landscape; (iii) loss of a functioning habitat; and (iv) exceeding a carrying capacity (over-exploitation) – with the latter three illustrative of poor environmental management. Fundamentally, a degraded landscape is one which could be 'more than it is' (SC, Eden Project Interview 8). Adding to this, another respondent proposes that "if something is degraded, it's done without due care and attention. And thought. And it is done for profit – whether that be social, or a financial gain, it is done in that manner" (LM, Eden Project Interview 7). Thus, there is no regard for past or future conditions. Claims of 'degradation' as an absence of care, attention and thought in environmental actions feed into wider discourses of environmental morality (as Brennan 1984). Morality- and duty-based claims are attached not only to the motives underpinning an action, but also to the action itself.

The values assigned to a degraded landscape will also inform environmental restoration discourses[51]. This is exemplified by a respondent from RESTORE The North Woods who notes of the timber companies active in the Maine Woods: "the timber companies kind of take the position that if the land is denigrated, then people won't want to protect it" (M, RESTORE Interview). Value cannot be purely aesthetic, yet the issue of aesthetics provides complications of its own:

> I suppose the appearance of it would show that it hadn't been cared for, but then worryingly aiming towards saying 'oh, it's been unmanaged' but then that would make it wild; so what's the difference between wild and degraded? It's a bit complicated! Degraded suggests there has been some harm to it somehow, but how you would measure that against... I'd go on the visual appearance or the quality of it – if it looks like everything's dead, and things like that; but that could happen quite naturally.
>
> (SC, Eden Project Interview 8)

Leading from this, a distinction emerges between 'degraded' and 'destroyed' landscapes, with a FOTC representative arguing "Nothing is being restored at the Deep Cut Woods site. It has all been destroyed" (M, FOTC Interview 2). The

[51] See Section 6.3.2. The Valuation of Nature in Restoration Efforts for further analysis.

implications for environmental restoration are thus complicated by the potential existence of a cut-off point in terms of the extent of degradation to a landscape. This is evident in a statement by an Eden representative, who notes of the Project site, "it isn't a degraded environment that hasn't got a hope of coming back from anywhere. It has turned a corner in terms of revegetation" (SC, Eden Project Interview 3). As another respondent (M, SWT Interview) notes of restoring degraded land, "To make it [restoration] work, the land is best not to be too degraded". Thus, *when does 'too degraded' become 'destroyed'; and is it truly a case of passing a point of no return?* I think that the distinction between the two is blurred and highly subjective, for it is possible through some form of restorative practice to ameliorate a landscape condition – as evident particularly at the Eden Project.

In addition, the question arises as to whether it is ever (socially-)acceptable practice to leave a landscape degraded (as argued by Quinn 1992):

> The claylands as a devastated landscape may be better left, and taking advantage of the spectacularness of the devastation, rather than spending huge amounts of money trying to revegetate it and re-contour it so that it all looks like nothing ever happened here. It really depends upon what would make a difference for the people who live in that landscape. And it may be that we need to be thinking much more radically about okay, well we've inherited this desecration, is it a case that we want to roll out the woodlands and heathlands project the whole way across the however many square miles of this that there is; or is it that we actually use as an advantage this lunar landscape for extreme sports or motorbike riding or who knows.
>
> (PM, Eden Project Interview 10)

The Eden Project provides a contrast to National Forest Company and Walden Woods Project readings of degradation, insofar as it "took a degraded landscape and turned it into a theatre to show what cropped landscapes and what natural landscapes were – or are perceived to be – and how you can balance the two" (ED/SC, Eden Project Interview 6). As another Eden representative[52] (M, Eden Project Interview 9) adds, "We deliberately wanted to take the most derelict place we could find, and theatrically bring it to life in order to demonstrate what humans are capable of". There is an emphasis upon human skills and a capacity to act morally.

[52] Previously involved with restoration practices at the Lost Gardens of Heligan.

Nature and Naturalness

The question of nature and naturalness is downplayed within the context of the case study projects, for the concept of a 'natural' landscape is replaced with a 'managed' or 'semi-natural' landscape (see Castree 2005; Soper 1996, 1995). To illustrate this, within the Eden Project's Mediterranean Biome, interpretation for the Mediterranean Basin reads: "The 'natural' landscape we see today is the product of both nature and humankind" (onsite interpretation 2007). There is a strong emphasis on socio-nature[53], for as one Eden respondent (ED/LM, Eden Project Interview 12) notes, "Natural landscape is hard to find in a pure, pristine interpretation of the term. It is about an established relationship between humanity and the natural world".

The impact of factors such as climate change and pollution further brings into question the integrity of the 'natural' construct in restoration decisions (H/SC, FOTC Interview 1). As a WWP representative (ED, WWP Interview 3) suggests, "there is no natural or unnatural because it's constantly changing; the world is constantly changing. And so it's kind of a label that we use – as environmentalists or whatever group, conservationists – it's a completely illogical and erroneous label". While parallels can be drawn here with McKibben's (1989) 'end' or Merchant's (1980) 'death' of nature, what is promoted is social nature – nature (re)defined within, and represented and manifested through, changing societal expectations. Contemporary understandings of naturalness are employed alongside historical readings of the landscape (Hall 2005) – what is considered 'natural' changes over time, reflected in varying *degrees* of naturalness (and associated perceptions and feelings).

The concept of natural regeneration is important here, particularly with regard to reliance on non-human agents. Often associated with re-growth and succession (devoid of human intervention), natural regeneration can also be encouraged through environmental management techniques – an underlying premise of environmental restoration. As such, for restoration: "the most sensible thing to do is restore the conditions that were there, so that the ecosystem can come back on its own and maintain itself – not to need high maintenance, not to need a lot of input from human beings, but just allow it to be itself" (H/SC, FOTC Interview 1). Restoration thus becomes a catalyst in the wider process of natural regeneration.

[53] See Section 5.5. The Integration of Social Nature into Project Practices.

Unnatural is equated with artifice (a line of argument explored by Katz 1992, and Elliot 1997, 1982); and as one respondent argues with regard to introducing mature planting to an area: "There's something about that kind of landscaping that I see in the rich suburbs that I really heartily dislike, because it's sort of 'instant nature'. It's entirely wrong because it seems to fly in the face of nature" (LM, WWP Interview 6). For another respondent (ED/LM, Eden Project Interview 12), "The whole idea of unnatural is grey; it's blurred. Particularly when you move from natural resources to artificial resources – processes are involved. There are problems defining 'natural'. You view humankind as a part of nature, their actions are natural, and then the problems start..." The debate can be characterised through forest creation in the National Forest:

> There are some areas that have been forest for years and years. Walking through them, you trip over things, fall down things. When we are creating the Forest now, it tends to be flat, or with gentle slopes. There is a BMX route that has been created indirectly by kids in the Forest – if we had 'built' it, there would have been all sorts of health and safety issues.
>
> (M, HNFF Interview)

What emerges from this is an acceptance and tolerance of things in a 'natural' context, but not when, through restoration, one assumes (or has to assume) responsibility for what is created – there is an element of enclosure. This concern reconnects with the claim that while nature *evolves*, restored nature is *designed* (Katz 1992; Elliot 1997, 1982), and thus there is a degree of management and accountability attached to restoration practices, and associated issues of liability and culpability. Different nature myths (Hall 2005) are put forward at the case study sites, and drawing upon this, the perceived naturalness of the study landscapes is addressed below. Project actors reflect on the issue of nature and naturalness, but are neither fixated on it, nor restricted by it.

Fundamentally, the Eden Project is read as an artificial landscape, with one project representative (ED/SC, Eden Project Interview 6) noting, "it is false; therefore we can do what we want almost[54], in terms of restoration. It is a stage, a platform – there is no reference". Bartram and Shobrook (2000:370) are nevertheless critical of nature at

[54] It is the 'almost' which is perhaps most telling from this statement – there are limits (albeit subjective; not necessarily universally agreed) to the actions that society should take in restoration efforts. It also acknowledges that a degree of restraint is required.

Eden, arguing that it illustrates "the problematic issue over what constitutes nature, and how, where, and when environmental conservation should take place". This point is expanded further, to argue:

> The Eden Project is a scientific and technological simulation that interacts with duplications of nature, not just from the biological and ecological sciences, but from popular culture, global media and academic debate. [...] the Eden Project, as a scientific and technological simulation, is more real than real, a perfected experience of nature, a kind of ecoutopia achieved. [...] duplicative processes of scientific and technological simulation have accelerated to the point at which the nature's reality has disappeared. [...] the environmental catastrophe has already happened and [...] what we are left with is the illusion of 'forestalling the end' through endless duplications of nature.
>
> (Bartram and Shobrook 2000:373)

The claims made by Bartram and Shobrook (2000) may parallel those of Cypher and Higgs (1997; refer to Section 2.2.2) in their treatment of 'nature' and 'naturalness', but they overlook the fact that the Eden Project is not itself claiming to be a recreation of nature, but rather multiple representations and manifestations of nature. Contrary to the above claim, there is no attempt to represent Eden as a 'natural' landscape, and as another project representative (SC, Eden Project Interview 8) argues, "I think it's artificial. I mean, it's got elements of nature that have been brought in, but in a very controlled way" – there is nothing (pre-)existing to which a duty is owed.

Despite this, a combination of nature and artifice at Eden is evident through the presence of different landscape types onsite. Descending into the pit, a spectrum of landscape types is evident, from 'transitional' areas along the rim – such as Wild Cornwall – to more domesticated and cultivated landscape exhibits in the centre. This is echoed by a project representative, who notes "everything barring the ancient Atlantic woodland which fringes the Project's northern and southern edges is touched by the hand of man" (M, Eden Project Interview 9). Although Eden is a man-made landscape, one respondent (LA, LUC Interview) notes "There are elements – the science of it echoes natural processes. For me, this is the healthiest way". Interesting nuances are evident onsite at Eden, as:

> The constructs are false, but they are also authentic at the same time. The trees are real, the gardens are real; and this is an interesting thing about gardens I think, is that they are both man-made, and they couldn't exist without nature. They are both constructs and authentic. And so if we plant a

> woodland, that woodland becomes entirely a construct, but it's real as well – the trees are real, the woodland *is* real.
>
> (ED/SC, Eden Project Interview 1)

Constructs of nature and artifice are also identified by Mabey (2005:5): "You know that when you step through the gates of Eden, you are being asked to suspend reality. You know that this is a world of illusion, where you will see not so much the earth itself as its image, focused through a lens; [...] Yet it is, at the same time, very real. The plants are far from illusory". The Mediterranean Biome now has a small population of robins – via the ventilation ducts – which subsequently illustrate a nature-artifice cohesion, yet: "with so much ecological artifice on hand, Eden has felt obliged to present a certificate of provenance for the robins" (Mabey 2005:48).

The naturalness of Eden is also debated within the dictum of society as a part of nature, or apart from it. For one Eden representative, "we'd have to say it was [natural], because if we've subscribed to the idea that man is an integral part of nature, then yes. But I suppose my first reaction is no, because we've built it in a big hole that we'd made in the ground. It will have pastiches of nature running all the way through it. And it is all the more exciting for it" (SC, Eden Project Interview 3).

The dualism of nature and artifice is illustrated by an exhibit at the Eden Project (Figure 6.7). However, whilst 'artifice' typically relates to the reproduction or recreation of elements of nature, it is employed at Eden to illustrate what can be *derived* from nature. 'Nature' represents the plants *cola acuminata*, *theobroma cacao*, and *manilkara zapota*, which, when processed and refined as 'artifice', become cola, chocolate, and chewing gum. 'Nature' is further depicted by a leopard, while 'artifice' is realised through a domestic cat.

Figure 6.7 | Nature and Artifice exhibit within the Eden Project's Rainforest (HTB) Biome; left: Nature, right: Artifice.

The nature-artifice debate is also explored through the comparison made between the Eden Project and Pine Lodge Gardens and Nursery, with the latter advertising itself as

a 'real garden' (Figure 6.8). As one Eden representative (PM, Eden Project Interview 10) speculates of the signs: "I'm sure it's a dig at Eden".

Figure 6.8 | Interpretation for Pine Lodge Gardens and Nursery, near the Eden Project.

Walden Woods "could be defined as a natural landscape", argues one respondent (M, Thoreau Society Interview), but "it depends on what degree (of naturalness) you want to apply". The Woods are considered a natural landscape insofar as "It's really unique in Eastern Massachusetts in that you have a very large ecological thing that is more or less pretty well preserved. You know, it's basically got a low road load, it has better than 75 per cent in conservation, and presumably preserved in perpetuity" (LM/SC, WWP Interview 1). For another respondent (H/SC, FOTC Interview 1), the naturalness of Walden Woods is defined by the fact that the 'natural lay of the land' has not been greatly affected (despite the construction of the railroad and Routes 2 and 126). Naturalness is equated with 'integrity', as "there was enough of it that always stayed [...] and it wasn't like starting it from ground zero" (ED, WWP Interview 2). However, Walden Woods is also artificial as the land use has changed: "even here [the Thoreau Institute], you look around and you see these beautiful woods – but these woods weren't here in Thoreau's time, this was mostly open field" (M, WWP Interview 5).

Nature and artifice are combined within the context of Walden Woods, with the Woods a consequence of "geological characteristics and the economy in which it existed" (PL, Sasaki Interview) – that is, natural processes and human presence. Of the naturalness of Walden Pond, a WPSR representative (LM, WPSR Interview 1) notes, "[it's] pretty much in the condition that it was in Thoreau's day. But it has been altered – the fish population for example has been altered by humans. It is as natural as we can make it, given the conditions we have to deal with".

The National Forest is also illustrative of the nature-artifice duality. For the most part, it is read as a semi-natural landscape, with one FC respondent remarking, "As a forester, you can think beyond the tubes and the straight lines. In 50 years' time, it will be more wooded" (LM, FC Interview 1). Yet at the same time, the landscape is artificial and manufactured, based on previous uses. The landscape of the National Forest has been shaped by extraction, agriculture, and development (Parry 2006); and as such, "There are some outcrops that you may view as natural, but the land surrounding those areas has been managed, and so affected. There has been an impact everywhere" (LM, LCC Interview 1). To use the terminology of a NFC representative (LM, NFC Interview 5), 'natural' is equated with 'rare', and as the latter does not describe the National Forest landscape, neither can the former.

As with Eden and Walden Woods, nature and artifice appear in parallel within the landscapes of the National Forest. As one respondent (LM, FC Interview 2) argues, "It is natural-ish. It is becoming more natural in appearance; and as more land is restored, it will continue to become more natural" – thus implying naturalness is determined in part by restoration efforts. The issue of scale is hence a part of such discourses. The idea of naturalness is further qualified by discourses of suitability and compatibility: "I can't imagine they've made a 'natural' landscape, but it's fitting for today. There's nothing wrong with that" (SC, FR Interview 1).

Although the 'naturalness' of the project landscapes remains contested, the matter of whether the projects wish to be constructed as natural landscapes is much simpler. What is sought is acknowledgement of *appropriateness*[55]. For the Eden Project, being viewed as a natural landscape was never the intention, for as a project representative (ED, Eden Project Interview 11) notes, "It is not intended to be – it is a theatre; larger than life, focused, crystallised". This is echoed by another respondent (PM, Eden Project Interview 10) who argues, "We've created a whole series of horticultural exhibits to tell stories. I'm not at all sure that we would want it to be seen to be natural".

The practice of environmental restoration serves to restore natural capital, (or create capital, from nature) and yet attempts to gauge the naturalness or artificiality of a site could potentially reduce its significance, as: "the biggest danger is that we arrive

[55] See Section 5.3. Landscape Quality and Integrity of the Landscape.

at a compromise that doesn't do anything" (M, HNFF Interview). What emerges from analysis of the perceived naturalness of the project landscapes is a compromise between *natural* nature and *artificial* nature, with significance awarded to cultural landscapes, socio-natural interactions, and ecological function and integrity.

Wildness and Wilderness

Intrinsically linked to debates of nature and naturalness is the concept of wildness. Despite rejection of the narrow reading of 'wild' as never experiencing human intervention, what constitutes a 'wild landscape' remains contested. For one respondent (PL, NFC Interview 1) wild landscapes "tend to suggest areas that have many of their semi-natural features intact – ecologically, geologically". Wild is 'left to the forces of nature more' (LM, Eden Project Interview 7) – it is 'a little less managed' (LM, NFC Interview 7) – prompting the question: *is natural regeneration wild?* In one respect it is, for it allows natural forces to predominate, but at the same time, natural regeneration can be set up and perpetuated through human intervention. The wild is synonymous with 'established' landscapes; but interestingly, not those established recently, by people.

The existence of wild areas remains a subject of debate, particularly in an English context, yet what is evident are degrees of wildness. As illustration of this latter point, respondents note of Walden Woods: "It is wild, and it's been wilder" (H/SC, FOTC Interview 1); and "Some has been destroyed beyond hope, while other parcels are still 'wild'; plus everything in between" (M, FOTC Interview 2). By way of illustration of the subtleties in language, one Eden respondent (ED/SC, Eden Project Interview 6) acknowledges, "we recreate natural landscapes, and we call them words like 'natural' and 'wild' to help the public understand them [...] we use it [wild] a lot to mean natural". This example highlights the interchangeability and substitution of concepts, employed to reinforce and promote particular ideals, even though the replacement concepts may not be materially accurate.

Linked with the notion of degrees of wildness is the issue of native and non-native wildness. As one respondent notes in relation to the HEATH Project, "There is an issue with the Western (or European) gorse – it is non-native, but people associate it with Cornwall" (PM, HEATH Project Interview). For a WWP representative (ED, WWP Interview 2), wild and native are synonymous, thus: "I guess part of it [wild] is

if something is native – and not only is it native, but is it suited to where...it might be native to Concord, but is it native to the spot?"

Furthermore, a distinction is made between 'emotional wild' and a wild area (SC, Eden Project Interview 2; LA, Eden Project Interview 5). Claims of 'wild' and 'wildness' are a little more pronounced amongst the North American project actors, and as one respondent (M, WWP Interview 5) argues, "I think you can find wildness in civilisation; in the heart of civilisation that one can find wildness, because it's part of a state of mind, and one's ability to appreciate little tastes and titbits of wildness". Similarly, the claim is made that the power lies in seeing wildness and naturalness in the landscape that is closest to you: "You can always look up to the sky and find wildness" (M, Thoreau Society Interview). Thus, what is created is a sense – or feeling – of wildness.

The issue of *wildlife* as a subset and determinant of *wild* is one primarily addressed within the context of Walden Woods. The return and recovery of fauna to an area is used to gauge its 'wildness':

> Here in Massachusetts, you had this huge recovery of species that Thoreau lamented disappearing – the white tailed deer, coyote, beaver, turkey, moose – he said all these were gone because all the forests were gone. [...] So all those things are in Walden, and by that measure, you could say it's more wild than when Thoreau was here – there are more of these species. [...] On the other hand, if you walk around Walden, you can see, even in the forest areas, the impact of humans – you know, if you have the right eye: from the species mix, the presence of old stone walls, or forest roads.
>
> (SC, Mass Audubon Interview 3)

The intricacies of wildlife as a factor of wildness is also raised within the context of Heligan, with a Heligan representative noting "The Wildlife Project[56] would be considered as wild, but then again, with the cameras and setting up little nest boxes and things, they're not actually, *actually* wild, are they?" (SC, Heligan Interview).

The concept of wild and wildness is also context-embedded, awarding consideration to the wider landscape condition. In one instance, wildness in Massachusetts was identified as land outside of the I-495 belt[57] (SC, Mass Audubon

[56] The Wildlife Project is conserving wildlife through traditional land management. Lost Wood is an area of the outer estate dedicated to wildlife, and is managed sympathetically – Lost Wood 'follows the Heligan spirit; traditional woodland management producing productive forestry while supporting wildlife' (onsite interpretation 2007).

[57] The I-495 highway forms an arc approximately 30 miles from Boston, and is often regarded as the outermost boundary of the Greater Boston region.

Interview 2). Furthermore, the urban-rural dichotomy also features, to the extent that "what's wild to somebody who spends a lot of time outdoors is completely different from someone who is a city dweller" (PL, DCR Interview). This is further reflected in a comment by an ACVP representative, who notes of the Cornish coast, "Tourists see the wild North Atlantic coast, with the waves coming in; but the local farmers probably do not think this is wild" (PM, ACVP Interview).

Through academic acknowledgement and public sentiment, areas of a 'wild' state continue to rapidly diminish and erode. Despite this, there are certain tracts within the project landscapes considered illustrative of wildness. Walden Pond, for Maynard (2005:73-74), was not a "retired or a pristine place; in fact, one could hardly have chosen a more visible and public spot to retire to. [...] Walden Woods as a whole retained only a semi-wild character after generations of cutting", and yet at the same time, "there is something inspiring about the dogged persistence of wildness here even as the modern world has surrounded the reservation on all sides" (Maynard 2005:12). Within Walden Woods, 'wild' is used to describe the areas encompassing Heywood's Meadow and Andromeda Ponds (Figure 6.9), and the area adjacent to Fairhaven Bay (Figure 6.10), as these areas are "predominantly influenced by nature, rather than humans" (M, RESTORE Interview).

Figure 6.9 | Heywood's Meadow and Andromeda Ponds; top left and right: Heywood's Meadow, bottom left and right: Andromeda Ponds.

Figure 6.10 | Panoramic view of Fairhaven Bay.

At the Eden Project, Wild Cornwall is *representative* of 'wild', and yet as one Eden respondent clarifies, it is an *imitation* of wild: "you can feel as if you're in a wild place, and it not actually meet that definition. I think it's quite easy to create the impression of something being wild, but if you actually look into it, it loses a bit of that" (SC, Eden Project Interview 8). Even though the Wild Cornwall landscape is one experienced out of context, it is illustrative of conditions elsewhere. It is wild insofar as it is composed of more elements of unmanaged land than other displays at Eden – elements such as the Atlantic woodland and mature heathland displays (though both necessitate some management; for the latter, to produce the effect of grazing). It is exemplified externally through the HEATH and Atlantic Coast and Valleys Projects.

However, wildness at Eden is not confined to the pit landscape – the remainder of Eden's land holdings highlight tracts of less disturbed and less managed rural Cornish landscape (Ove Arup and Partners 1996a, 1996b). As one Eden respondent (LA, Eden Project Interview 5) observes, "It is often forgotten that some local people used to use the Bodelva pit – wider site – as a 'wild' place to go walking, etc. Then [part of] that was lost and replaced with an international tourist attraction" – and with it, a completely different interpretation of *nature*, *environment* and *landscape*. Similarly, another respondent (PM, Woodland Trust Interview) notes of woodland sites within the National Forest: "I do see the woodlands as wild; we don't manicure them as gardens". Distinctions are thus made in terms of the extent and nature of intervention.

As the above examples illustrate, material wild landscapes are those which have experienced minimum human intervention and management – consistent with the conceptual definitions put forward earlier. Yet, granted the interpretation and subsequent application of wildness in a landscape, the question thus arises as to

whether it is indeed possible to plan for wildness (challenging Adams 2003) – and whether this is the goal for restoration (SC, Mass Audubon Interview 3). Within the context of the National Forest, a project representative (M, NFC Interview 2) argues, "People want the National Forest to be wild; they don't want the Forest too tame". A tame landscape, however, should not always have negative connotations, for de Saint-Exupéry (1943) points to taming not to control, but to establish connections. Thoreau also writes on taming nature, such that "Man tames Nature only that he may at last make her more free even than he found her, though he may never yet have succeeded" (Thoreau 1849 [2001]:206). Taming is not always necessary, or required, for "We would not always be soothing and taming nature, breaking the horse and the ox, but sometimes ride the horse wild and chase the buffalo" (Thoreau 1849 [2001]:33), with tameness also equated with dullness.

Interestingly, with regard to restored land, the suggestion is made by one respondent (M, SWT Interview) that wildness may be defined temporally: "it won't get to equate to its 'wild' status for many years, depending on what habitat it is". This further complicates matters, for (i) landscape conditions are fluid, and (ii) defining landscape qualities is a subjective process, informed by contemporary thinking. One further issue raised with regard to wildness is that of re-wilding (see Wildland Network 2007). Although the approach promotes a naturalistic type of management, it remains "romanticised and idealised. It's not practical" (LM, NFC Interview 7), and requires a lot of human effort to engineer and steer.

Leading from this, a distinction emerges between *wildness* and *wilderness*. As a respondent remarks of Eden: "It is not wild in terms of wilderness, but it has healed itself" (LA, LUC Interview); and it is a sentiment reflected by a respondent speaking of the Maine Woods: "I think that it is wild, but it is not a wilderness" (M, RESTORE Interview). So *what is it that sets wilderness apart from wildness?* I think in large part it comes down to process versus outcome; and arguably, it is also a matter of scale – wildness occurring at a micro level, and wilderness at a macro level.

Wilderness epitomises the socio-cultural construction of ideas about nature; of whether society is a part of nature, or separate from it. For one respondent (SC, Eden Project Interview 3), wilderness 'definitely has humans in it', due to the influence of indigenous communities in the landscape (echoing Higgs 2003; Nash 2001; Cronon

1996b; Callicott 1991); a contrast to another respondent (SC, Eden Project Interview 2), who argues: "A wilderness would be classified as somewhere that isn't impacted by man to any great extent. [...] But [areas] have been impacted by climate change, so there's been a blurring". This latter claim supports the positioning of wilderness within the context of accessibility and 'the chance of finding other people there' (PM, NFC Interview 6). Different claims materialise in the same landscape context at one and the same time, drawing on different rationalisations, such that "Even in Thoreau's time, Walden Woods wasn't vast tracts of wilderness – people lived here, the railroad came barrelling through" (M, WWP Interview 5), and yet Walden Woods provided Thoreau with a 'ready-made wilderness' (H/SC, FOTC Interview 1).

Although Thoreau wrote of the wild and wilderness, *wild* was used much more prolifically – particularly within *Walden* (1854), *Walking* (1862), and *The Maine Woods* (1864) (see also Schofield 2006; Zahniser 1957). Thoreau's use of the terms has been explored in Section 2.2.2, but I wish to revisit the differences in use – and the ideas invoked by – 'wild' and 'wilderness':

> What is most striking in the Maine wilderness is the continuousness of the forest, with fewer open intervals or glades than you had imagined. Except the few burnt lands, the narrow intervals on the rivers, the bare tops of the high mountains, and the lakes and streams, the forest in uninterrupted. It is even more grim and wild than you had anticipated, a damp and intricate wilderness, in the spring everywhere is wet and miry. The aspect of the country, indeed, is universally stern and savage, excepting the distant views of the forest from hills, and the lake prospects, which are mild and civilising in a degree. [...] These are not the artificial forests of an English king – a royal preserve merely. Here prevail no forest laws but those of nature. The aborigines have never been dispossessed, nor nature disforested.
>
> (Thoreau 1864 [2004]:80)

> It is in vain to dream of a wildness distant from ourselves. [...] I shall never find in the wilds of Labrador any greater wildness than in some recess in Concord *ie.* than I import into it.
>
> (Thoreau 1856, in Thoreau 2007:280)

For Thoreau, wildness is not tantamount to, but instead representative of, wilderness and nature. This is further acknowledged by the Walden Woods Project (2007b):

> What Thoreau meant to highlight was not an untouched 'wilderness' separate from humanity, but instead an independence of the spirit epitomised in the word 'wildness'. His experiment living at Walden was not meant to be a wilderness excursion or a period of hermitage. [...] Thoreau felt that society

> constrained the individual and he looked to the wildness of nature as pointing to our belonging to a higher, freer way of life.
>
> (WWP 2007b)

While the majority of wilderness definitions provided by the case study respondents place it as similar to that exemplified within the 1964 Wilderness Act, the relevance and perceived presence of it is more diverse. Within the UK, the concept is downplayed, even discounted as a landscape type, granted the preponderance of 'cultural' landscapes, shaped by centuries of human settlement. Wilderness is a much more 'real' concept in North America, a remnant of frontier ideals, today evident in Wilderness Area designations. There is no easy way to define 'wilderness' (with a friend from Australia noting that 'your wilderness is much less exotic than ours' (Best, pers comm.), again introducing the idea of degrees), and the matter is complicated further when ontological debates feature: "I don't think anything is natural in that way – wilderness does not really exist anywhere, in a true sense" (PM, Landlife Interview). Whilst the wilderness concept remains quite a confused one, the definition provided by the 1964 Wilderness Act continues to serve as a benchmark (M, RESTORE Interview). What this means for environmental restoration is that whilst wilderness as an academic and sociological term is full of ambiguity, it is a term recognised at a political level, with impacts on land use policy and planning. Whilst at times wilderness may be a fluid term, through policy discourse it has significant impacts, if not always consistent connotations.

* * *

The fivefold typology of restoration discourses established earlier in this Chapter (Section 6.2.1) presents a cohesive position on restoration concerns, but, out-of-sight, there are mechanisms (social, cultural, ecological, political, legal) in place guiding the rationalisations and manifestations of environmental restoration realised through the typology. *Degradation*, *nature* (and *naturalness*), and *wildness* are all indicators of the landscape condition (and examples of the above ecological mechanisms), and as such, fit within, and inform and mould, the fivefold restoration typology. *Degradation* is a pre-requisite for restoration practices (after Light 2008), with the extent and intensity of degradation guiding the style of restoration that could and/or should take place on a site. Practices of environmental restoration work towards restoring *nature* to a site,

essentially re-establishing natural processes, with attention centred on structure and function. The degree of naturalness that is sought (or indeed the particular qualities of naturalness, such as *wildness*) will also determine the style/form of restoration that is applied to a site. Complementing these indicators of the landscape condition are the concepts of *sustainability*, *integrity*, *appropriateness*, and *compatibility* – social constructs that serve as markers in gauging restoration 'success' and futurity. These factors combined thus recognise and allow for the multiplicity of contexts that environmental restoration discourses can be mobilised within, while retaining some measure of control on interventions in, and manipulations of, the landscape.

Having explored multiple rationalisations and manifestations of *degradation*, *nature* and *naturalness*, and *wildness* and *wilderness*, one key implication emerges for environmental restoration practices. Landscape systems will not be universally affected and defined by these processes, making any understanding of the rationales difficult. Equally, whilst there exist academic and technical definitions of these terms, how restored and created landscapes are culturally 'read' in particular contexts will inform the restorative practices which take place there.

As acknowledged earlier in the chapter, geographies of environmental restoration and networks of restored spaces are driven by local dialects of nature – but degradation and wildness must also be considered, for (landscape) context is hugely important. Despite an apprehension that this is simply complicating matters further, what it does suggest is an approach to environmental restoration which not only focuses upon the tract of land in question, but pays credence to wider socio-cultural-political interpretations of the landscape. The existence of 'new natures' further reinforces the 'contested natures' involved (Macnaghten and Urry 1998). Restoration is not, and cannot be, an insular process, for it requires and derives inspiration and insights from too many external factors.

6.3.2 The Valuation of Nature in Restoration Practices

The National Forest Company, the Eden Project and the Walden Woods Project all operate within socio-natural and cultural landscapes, yet each site reinforces and promotes distinct elements of nature-society interactions, to produce different values of nature. The National Forest is a working landscape, and an exemplar of sustainable forestry; whereas Eden is completely designed, to represent man's dependence on

plants. Walden Woods not only has its connection with Thoreau, but as a marginalised site has witnessed numerous interventions in the landscape.

'Successful' restoration depends upon the values applied to landscapes (Cowell 1997; Goodin 1992). In the context of Deep Cut Woods, a FOTC representative notes that for proponents of the playing fields, the landscape is "bedraggled; it's not high quality" (H/SC, FOTC Interview 1). However, of Walden Woods and its northern pine oak forest, "no-one has ever said that it's a premier kind of woodland, or that it's a crowning achievement of evolution, or it's the most diverse kind of forest. But it has an identity and a coherence of its own" (H/SC, FOTC Interview 1). What this highlights is that numerous values can be applied to the landscape, with implications for subsequent restoration efforts. Landscapes mean different things to different people. Another case in point is the contrast between the Towns of Concord and Lincoln in the value attached to Walden Woods. As another FOTC respondent (M, FOTC Interview 2) notes, "I think the Town of Concord has not had a priority position towards the preservation of Walden Woods, which is borne out by history". It appears such that Concord has had "a cavalier attitude about Walden Woods [...] – it's all expendable. The Town of Concord does not seem to value Walden Woods" (H/SC, FOTC Interview 1). In contrast, the Town of Lincoln appears much more committed to restoration and conservation (LA, WPBOD Interview).

Value is also attached to the social constructs 'National Forest', 'Eden Project' and 'Walden Woods', with impacts for the wider landscape context. Within the context of the National Forest, one respondent (LM, FC Interview 2) argues "It may be that there is a fear amongst farming – that land is going to woodland, and agricultural productivity may be reduced/lost". Building upon this, a NFC representative (PL/LM, NFC Interview 4) adds, "We need to be able to engage landowners continually at the same rate, and if there are other commercial opportunities to use the land – either for built developments, for horses, for more profitable arable crops, or say fuel crops – then they may not be willing to put their land into woodland". In addition, land prices are higher within the Forest boundary compared to surrounding areas: using Sence Valley Forest Park as an example, when UK Coal auctioned its share of the site (with LCC the other landowner), the land sold

for £10,000/ha, against the more standard £5,000/ha – £6,000/ha for the quality of land (LM, FC Interview 2).

Throughout its history, Walden Woods has been constructed as a marginal landscape. As noted by one respondent (PL, Sasaki Interview), "So as a piece of real estate, its history is related to what Thoreau did there, but probably he did what he did there because nobody cared". During the 1840s, the area was a refuge for freed slaves and immigrants, and, as previously noted, Walden Woods had been the location for what were seen as other 'less desirable' elements of a community, leading Maynard (2005:72-73) to observe, "However romantic Walden seemed to the Emerson circle, it stubbornly retained a degree of edge-of-town lawlessness". Walden Woods is a 'sacrifice area' (H/SC, FOTC Interview 1), evident through the siting of the trailer park, the landfill, sand and gravel extraction at Brister's Hill, Routes 2 and 126, the proposed development of Bear Garden Hill and Brister's Hill, and the CCHS playing fields. Thoreau's Path on Brister's Hill is illustrative of wider marginalisation in the area, insofar as it is "the social margin and ecological edge between (1) the village and the wild, (2) minorities and mainstream, (3) society and solitude, (4) forest and field" (WWP 2007a).

An awareness of the historical value and significance of a site is essential for its safeguarding (as Hall 2005), for as a WPSR representative points out in relation to Walden Woods, and particularly the Pond: "if you didn't have that, you could easily come in here and say, okay, 650,000 people – we're going to provide swimming, fishing, boating, these kinds of recreation; we should just pave the trail. You know, you could, if you were looking at it from a purely practical point of view, you could say pave the boat ramp, the trail..." (LM, WPSR Interview 1). In a similar vein, the Deed of Gift (1922) is problematic on two counts in determining the value of the landscape, as: (i) it requested maintaining the site for recreation; and (ii) it required the protection and preservation of the 'Walden of Emerson and Thoreau'.

Although the issue of manipulation and intervention in the landscape has been discussed earlier in Section 6.2.4, I wish to raise just one further point – that of the value accrued by such an action. The practice of environmental restoration inherently seeks to improve the landscape condition – through replenishing the stock of natural capital – and as such, adds value to the landscape:

> But ecologically, environmentally, and socially, it's infinitely more valuable than an empty china clay pit, or probably the piece of land that was there to start with; before it became a china clay pit. I bet you, within Eden's landholdings, there's more biodiversity now – not through what we've planted from all over the world, but through attracting birds and insects and amphibians, and protecting certain areas offsite. We've got badger setts, and fox dens; we've got a little protected peat bog up there with all kinds of beautiful rare plants and mosses; we've got woodland, we've got farmland.
>
> (SC, Eden Project Interview 2)

Valuing nature within the context of the Eden Project is complicated, not least because it is a representation of landscape types found around the world, and as such is a completely 'manufactured' landscape. However, the value lies in the diversity of plants grown onsite (and indeed how they are grown), alongside the positive impacts for local biodiversity.

Reflective of Hettinger (2005b, 2005c) and Soper (1996) amongst others, for all three case study projects, the value of the landscape is not determined by, nor defined by, aesthetics – although part of that value may be aesthetic. Instead, ecology and ethics are promoted (as Swart *et al* 2001); reducible again to discourses of appropriateness. This is mirrored in a statement from a respondent at the Walden Woods Project:

> It's attractive, but it's not the most beautiful, pristine, untouched habitat or woodland scene that you can find. It is in the middle of a suburban area. But because it is such a symbol, it makes it more special I think than a pretty field out in the middle of Massachusetts somewhere! It has a history and it has a special significance to it.
>
> (PM, WWP Interview 4)

There is also a risk that landscapes, significant or not, are not highly valued by those in close proximity to them, viewed instead as just part of the backdrop. There is an apt quote by a WWP representative with regard to Walden Woods:

> I don't think it's as special to the locals as it is to people elsewhere. People who may have come here to visit one time, or who read *Walden* or other things by Thoreau, who have a sort of romanticised vision of the place. [...] And so people further away I think are supportive of it more for the symbolic reasons than for the actual physical, factual reasons. And the local people kind of lost sight of the symbolism, probably because they're just hit over the head with it so much.
>
> (PM, WWP Interview 4)

The reverse situation is true of the National Forest, with its location in part based on support for the project within Leicester and other towns. A measure of the values

attached to a landscape is exemplified in an example from the National Forest: "Our biggest fear is that we won't be able to do anything in it later down the line because they love it as it is" (LM, FC Interview 1) – a sentiment echoed at both the Eden Project and the Walden Woods Project.

Rationalisations of nature as 'unmodified by human activity', so integral to the arguments of Elliot (1997, 1982) and Katz (1992) amongst others, wield little power amongst project actors at the Eden Project, the National Forest Company and the Walden Woods Project. 'Nature' is instead manifested and valued within societal constructs and norms. None of the projects attach a reduced value to 'restored nature' (contrary to concerns raised by Elliot 1997; Katz 1992), instead valuing it on its own merits and not as an affront to the 'genesis' of nature. While some restored study sites are indeed acknowledged as artifacts (complementing Katz 1992), there is no suggestion that restoration efforts have allowed society to dominate nature, or to 'fake' nature and thus deceive society (countering Elliot 1997, 1982).

6.4 Conclusions

Within this chapter, discussion has not only centred upon the social construction of ideas about environmental restoration, but it has also highlighted how such constructions and discourses translate into the material reality of 'restored nature'. As a consequence, the analysis has proposed several discourses which appear to dominate. Discourses are employed to make particular claims, and a key finding to emerge is an identifiable typology of environmental restoration, framing restoration in terms of replication and return, repair, removing anthropogenic influences, restoring natural capital, and promoting sustainability. Restoration discourses are structured around both environmental and social markers, and thus as a process has benefits to the environment and society.

Moreover, the analysis has put forward the concept of a 'geography of environmental restoration' and an associated 'local dialect of nature'; informed by environmental management practices (and the need for restoration), the wider environmental condition, concerns of manipulation and intervention, and the values attached to (restored) nature. Of particular analytic interest is the relative insignificance of issues of 'naturalness' in restoration discourses; instead replaced by

social nature concerns. Discourses of restoration connect with ideas of context-embeddedness – with context a pattern in discourses – and contribute to an understanding of discourses which prioritise socio-cultural-political interactions, customs and expectations. Through tracing the rationales behind restoration to material practices and thus 'restored nature', the analysis has been able to highlight those themes which come to dominate, and the justifications for such actions. For this reason, it can be argued that practices can reveal more than discourses alone.

Having identified those discourses of environmental restoration which appear to dominate across the case study sites, and examined their mobilisation on the ground and the implications thereof, attention turns, in Chapter Seven, to a more macro view. The focus is thus upon locating discourses of environmental restoration in a wider practitioner (and policy) context, to examine not only the power wielded by such discourses, but also the degree of knowledge transfer and dissemination which takes place within collaborations and networks.

CHAPTER SEVEN

The Unfolding Politics and Power of Restoration Discourses

7.1 Introduction

Through environmental restoration practices, nature is being socially (and materially) reconstructed to (re-)create places – be it in terms of purposely ameliorating image and meaning, or simply guided by the social (and economic) relations that constitute space and place. Restoration practices are representational, producing sites of environmental transformation, as well as socio-cultural, economic and political transformation. Such practices improve physical environments, and also create new place-based identities. The political nature of restoration is epitomised through its representations of the meaning of space and place. The production of 'restored nature' is driven by particular value judgements and perceptions of the landscape (the social construction of ideas of restoration); with differing – and overlapping – discourses resulting in potentially contested landscapes. Restoration discourses and practices, and particularly the nature-society interactions therein, are framed by wider concerns of power and politics. For this reason, it is essential to press beyond simply the operations of environmental projects, to investigate the drivers of this reconstruction, and the related agenda(s); alongside the associated pattern of costs and benefits.

Leading from this, this chapter explores the degree to which environmental projects can influence wider restoration practitioner (and policy) discourses. Such

power and authority will also inform the dissemination of restoration knowledges, with attention also directed towards the extent of, and thus any barriers to, collaborations between other environmental projects and organisations. Underpinning this chapter is analysis of the scalar interactions and networks caught up in extending the reach and authority of restoration discourses.

7.2 The Implications for Restoration Policy Discourses

7.2.1 Policy, Politics, Advocacy and Plans for the Future

The regeneration policy environment continues to represent both opportunities and complexities.

(NFC 2006:23)

The role of lesson drawing in environmental policy and decision-making, alongside environmental equity and evaluation, is fundamental to a discussion of environmental restoration discourses. In particular, the popularity and proliferation of 'restoration projects' in the environmental field contrasts with the relatively limited research into the production and consumption of environmental meanings bound up in the transfer of restoration 'knowledge'. Understanding of the confusing lexicon of environmental restoration is essential (Chapter Six), as this may impede or complicate policy decisions in the field. The practice of restoration cannot occur without some formal public discourse, or decisions made at the policy level, yet policy is determined by particular uses of terminology.

The extent of interdependency and collective action amongst projects is significant – Table 7.1 illustrates the adoption of project-based restoration actions as policy or common practice.

Organisation	*Restoration action adopted as policy or common practice*
Eden Project	• Many of the environmental management techniques have been replicated – particularly soil manufacture, alongside stabilisation and revegetation practices, and water management. • The Eden Project was involved in Target 14 (Communicating and Educating) of the UK targets for biodiversity conservation – based on the *Global Strategy for Plant Conservation* (Secretariat of the Convention on Biological Diversity 2002).
National Forest Company	• The competitive grant programme and Tender Scheme have been taken up in various guises outside the Forest, primarily advancing the challenge scheme concept. • The NFC's *Biodiversity Action Plan* (2004a) was one of the first sub-regional Plans, sitting below the three county BAPs.

	• The NFC is promoting flexibility about what constitutes 'forest cover' – which has been picked up by other organisations.
Walden Woods Project	• A consequence of the *Approaching Walden* seminar sees teachers creating a curriculum for their students based on their experiences of the seminar, thus elements of the seminar are replicated elsewhere. • The Invasive Species Removal Project is being managed such that it may become a model for volunteer involvement.
Caddo Lake Institute	• The Institute's model project of protection of environmental flows to the Lake is now being used as a model. Originally developed by the Nature Conservancy, it is the work at Caddo Lake which is influencing government policies in Texas. • The work on Giant Salvania could potentially become be a model effort for other lakes threatened by invasive species. • The designation of Caddo Lake as a Ramsar site has influenced state and federal decision-makers.
Department of Conservation and Recreation	• The 1988 DEM/DCR publication *Sandcastles and Sandpipers: Restoration and Development Guidelines for Ocean Beach Recreation Areas* remains the benchmark for beach development.
Landlife	• The topsoil inversion/deep ploughing project (Landlife 2006; Scott 2003) was included in the UK's response to the *Global Strategy for Plant Conservation* (Secretariat of the Convention on Biological Diversity 2002). • Landlife is changing the concept of how woodlands are established, through the (promotional) use of wildflowers.
HEATH Project	• The HEATH Project strives to create a sustainable development model for lowland heathland areas. Best practice demonstration examples from the sites will feed into the development of a 'tool kit' for heathland management – to aid practitioners, communities, decision-makers and stakeholders.
Massachusetts Audubon Society	• The Grassland Conservation Program, established in 1993, serves to preserve (and restore) grassland habitats which provide breeding and feeding sites for birds, plants, and butterflies. • The 2006 Mass Audubon publication *Massachusetts Conservation Restriction Stewardship Manual: A Handbook for Land Trusts and Conservation Commissioners* provides guidance on managing land permanently protected by conservation restrictions.
Sand County Foundation	• Two of the African project sites managed by CBCN have demonstrated the value of scenario planning for dealing with complex socio-ecological problems, and other organisations have expressed interest in adopting the approach.

Table 7.1 | Adoption of project-based restoration actions as policy or common practice (Source: Interviews with project actors from the listed projects).

The above actions are included to highlight how restorative efforts are interpreted and mobilised by the projects – and in turn, what is deemed significant and influential by other projects. The actions, to varying degrees, promote environmental management techniques which incorporate and encompass restoration discourses, and with reference to the fivefold typology established in Section 6.2.1, draw specifically on those discourses which promote the *restoration of natural capital*, *sustainability*, and

repair. As evident in Table 7.1, the Eden Project, the National Forest Company and the Walden Woods Project (and the wider project networks) all serve as a benchmark in initiating and promoting new restorative approaches. With regard to the National Forest, one respondent (LM, LCC Interview 1) notes, "I think it is used as a yardstick now. A lot of people are looking to what it has achieved". This is echoed by a NFC representative (PL, NFC Interview 1) who argues that the Forest is "seen as a place to learn, to learn from" – particularly in terms of silviculture management, sustainable forestry, and community involvement. The Eden Project presents a slightly different situation, with one respondent (LA, LUC Interview) observing, "One of the success points of Eden is that up until Eden, I'm not sure there was an example of restoration [or re-use] in the china clay area (of any scale)". The significance of the Walden Woods landscape and the work of the Walden Woods Project is acknowledged in terms of "maybe [...] the most intensively studied landscape in America" (H, Maynard, pers comm.).

Moreover, a belief in and commitment to advocacy is also relevant here. Advocacy as a concept is particularly prevalent within the Walden Woods Project, and is a term used frequently to describe and define actions undertaken by the organisation. Advocacy within this context is extensive, directed at:

> The preservation of historic Walden Woods and Thoreau Country in Concord and Lincoln, and for the broader, global environment. The organisation is actively and effectively involved in local, regional and national issues – including conservation, transportation and historic preservation – that have the potential to impact Walden Woods/Thoreau Country. The Walden Woods Project is engaged in finding solutions to the worldwide environmental challenges of the 21st century by encouraging advocacy for the conservation of our natural resources, by supporting responsible stewardship, and by fostering an informed, motivated and involved citizenry.
>
> (Walden Woods Project 2007d)

This sentiment is reflected in a claim by a FOTC representative (H/SC, FOTC Interview 1), that "Having the Walden Woods Project here as an advocate, a defender of Walden Woods, is very, very important". The Project is an advocate of several concerns, key amongst them: the closure and conservation of the Concord landfill, and the wildlife and pedestrian overpass for Route 2. Advocacy on global environmental issues is advanced through the launch of the *World Wide Waldens* programme. In addition, a WWP respondent (ED, WWP Interview 3) points to the importance of finding "ways to make sure that what we do here expands or grows or becomes a

service organisation for other environmental groups". Within the context of the British case studies, advocacy is often subsumed under the mantle of 'lobbying' (LM, FC Interview 1; ED/SC, Eden Project Interview 1).

Although Best Practice is valuable, and the major principles of environmental restoration activities put forward by the projects are transferable, the importance of context-embeddedness remains. The Eden Project, National Forest Company, and Walden Woods Project are promoters of (and baselines for) Best Practice, but site-specific management or interpretation will always have priority. The embedded-versus-transferable debate has numerous implications for environmental restoration – most materially, the potential for 'networks of restored spaces' to support connectivity and compatibility across a landscape system (compare with Marsden *et al* 2003). Transferability and context-embeddedness are not dualistic, however, with Matless and Revill (1995) using the sculptures of Andrew Goldsworthy to analyse how artwork which is embedded in place still manages to travel. The combining of embeddedness with transferability is also played out in US wetland compensation schemes (see especially Robertson 2000). A balance between, or at the very least a consideration of the two is required, if rationales and practices of restoration are to be disseminated (and accepted). There exists, however, a slight awkwardness to this dis-embedding process, as it necessitates the best of both worlds – both specificity and generalisability of discourses. Context is a salient feature of restoration discourses and practices, yet when knowledge on such discourses and practices is disseminated, there is a selective appropriation of contextual features – some features are promoted, others are downplayed, with further features appearing 'immobile' (Lele 1991 and Polanyi 1957 in Robertson 2000). As such, discourses are continually re-interpreted, modified, and re-evaluated.

The future plans of all three case studies are important for policy debates, not least because all the projects are limited in terms of spatial scale and boundary – there is only so much (restorative) activity that can take place within the Eden Project site, the National Forest, and Walden Woods. Thus for the projects to continue to have a voice in guiding restoration policy, they require not only a solidifying of current practices, but also scope to explore and tackle new issues when they arise.

This is evident within the Eden Project, for as Whitbread-Abrutat (2006:20) acknowledges, "As the visual impact of Eden's landscapes and events diminishes in the public eye, Eden will become increasingly recognised for its innovative work on the ground". The Project had proposed the development of the Edge and the Fertile Crescent, alongside a convening centre (see Section 5.5), although this is under review following the outcome of The People's £50 Million Lottery Giveaway[58]. As one Eden respondent (SC, Eden Project Interview 2) observes, future development onsite must continue to be "looking outward and engaging with other organisations, trying to effect real change in the world. Because if we don't, this place stands for nothing".

The target for the National Forest centres upon achieving woodland cover of 33 per cent; with the NFC gradually shifting from a focus on woodland creation towards a more managerial role (PL/LM, NFC Interview 4). Interestingly, a sentiment expressed by many NFC representatives focuses on the cessation of the Company once the target woodland cover has been achieved – "If it does its job, it will disappear" (PM, NFC Interview 6). There is also a view that the NFC could refocus its managerial approach: "it is necessary for the Company to be like it is for the next five or ten years to continue that, but thereafter it may be more sustainable to look at a sort of partnership model which is similar to an Area of Outstanding Natural Beauty or a National Park Authority" (PL/LM, NFC Interview 4).

Within Walden Woods, future development ideas encompass a visitor centre at Walden Pond, and the wildlife and pedestrian path over Route 2. The view of a WWP representative, although speaking of the Walden Woods Project, is one echoed across the case study projects, of viewing the sites as a basis for further entrepreneurialism:

> Certainly our goal is to become a venue and a resource for discussion on global issues – to bring people here to think about solutions to some of the challenges that we're facing. And this is all grounded so well in Thoreau's philosophy. [...] Our goal of really having an international global environmental voice in the form of bringing thinkers and leaders here to talk about the issues of the day; to be a really great resource for a wide variety of environmental, conservation, and social reform goals.
>
> (M, WWP Interview 5)

[58] A Big Lottery Fund competition to fund a pioneering project which would inspire communities to revitalise the areas in which they live. The finalists, alongside Eden Project: The Edge, were Sustrans' Connect2, the Black Country Urban Park, and Sherwood: The Living Legend – with the Sustrans project declared the winner in December 2007.

7.2.2 Seeing the Wood Alongside the Trees: Influences of the Global-Local

The visibility of the Eden Project, the Walden Woods Project and the National Forest Company in wider environmental arenas is in large part grounded in the fact that their approach to environmental issues allows them to face in several different directions. The projects are inter-disciplinary, combining environmental concerns with social (and economic) ones. What is promoted is a "strong environmental ethic, but based on local efforts and commitments" (M, CLI Interview).

In one sense, the projects are simply meeting demand – with the suggestion made of the Eden Project: "There is a lot of need for an independent, apolitical, conceptual space where organisations can come together on neutral ground and debate issues" (SC, Eden Project Interview 2). All three projects, through their operations, have the capacity to move debates forward, both in terms of academia, and policy and management (PM, FR Interview 2). Eden, the NFC, and the WWP are assuming the mantle of forerunners on various issues, with one respondent (LA, LUC Interview) commenting in relation to Eden: "I think the objective is to be on top of the latest environmental issues and be a source of information – about why issues exist, how they come about, and potential solutions"; to be a repository, almost.

Such visibility may also be attributable to the fact that the projects can 'talk the talk', with a NFC respondent (LM, NFC Interview 5) noting of the National Forest, "It has said what it is going to do, and does it. And continues to do it. And continues to have the ambition and drive". This is echoed by another NFC respondent (LM, NFC Interview 7) who simply states, "It is successful because it is working" – all of the projects are long-term endeavours, and are maintaining momentum. Credibility is thus conferred on the projects as venues for innovative thinking on environmental issues.

The projects are also identifiable through branding, whether it is the logos, or distinctive elements of the sites (such as Eden's covered biomes). The role of project actors and associates is also significant here – to use the Walden Woods Project as an example, its visibility can in part be explained by connections to Senators, visits from Presidents, and Don Henley's visibility and promotion of the site.

Moreover, such visibility is also informed by the geography of space and place, to such an extent that one respondent (M, RESTORE Interview) suggests, "New England conservation is not as daring as, say, in Florida. It is difficult in New England to talk about something or plug something – even today". The reason for this

may simply be a matter of perception, yet different landscape types instil differing needs for, and require different forms of, restoration, as reflected in a fivefold typology of restoration discourses. A result of the historic and literary connections with Walden Pond, a WPSR representative (LM, WPSR Interview 1) argues, "Walden is so visible – we're in such a kind of fishbowl – it's like everybody watches what goes on here". Walden thus becomes an exemplar; somewhere to gauge the success (or failure) of different environmental management approaches. More than that, the landscape is always 'on show', placing further demands on its management.

Perceptions change over time, and the projects must be able to respond to such shifts to retain a presence in contemporary debates. A temporality of experiences exists, insofar as prior knowledge informs the present, which will in turn inform future knowledge. Although inter-disciplinary, how the projects are defined becomes hugely important in determining their visibility (and perhaps status) in environmental (restoration) debates. Moreover, the drive of the projects can be read very differently.

Taking the Eden Project as an example, one Eden representative (ED/SC, Eden Project Interview 4) notes, "There is obvious overlap with other institutes. It depends on whether you view Eden as a botanic garden, or a scientific institution, or a museum. But overlapping is not the same as doing the same thing". For another Eden respondent (ED/SC, Eden Project Interview 1), "A lot of people think it's just about a tourist project. [Others] think it's much more – some people have picked up that it's a sort of green project in some sense, but they think that we are much more classically environmental lobbies than really we are". One reading of the Walden Woods Project is as the "non-profit entity that's most closely associated with Walden and the legacy of Thoreau" (SC, Mass Audubon Interview 3). Multiple interpretations of the role of the WWP are exemplified within the context of the CCHS playing field debate:

> People who were in support of [FOTC] were disappointed with the WWP for not taking a lead role in the preservation of Deep Cut Woods. People who were supporters of the WWP, but who supported the destruction of Deep Cut Woods to build playing fields, blamed the WWP for this resistance to destruction of the Woods – which was unfounded, given that they did not take a stand on the issue.
>
> (M, FOTC Interview 2)

There are several external influences which have also served as a catalyst for efforts undertaken by Eden, the NFC and the WWP. All three projects have drawn

upon (and learnt from) ideas, practices and experiences (both good and bad) from elsewhere, and have re-interpreted them such that they are now localised; relevant to the landscape condition. It is being "definite about what it didn't want to do, as much as what it did" (SC, Eden Project Interview 3).

The Eden Project looked to organisations such as the Lost Gardens of Heligan, Royal Botanic Gardens, Kew (particularly for plant health and quarantine) and botanic gardens more generally, and Biosphere 2 in Arizona, amongst numerous others. Eden also drew upon the Garden Festival movement (see Theokas 2004), and as Smit (2002:37) acknowledges with regard to the Bodelva site: "if an industrial wasteland at Ebbw Vale could be reclaimed, admittedly at vast expense, to make a garden, just think what we could do in Cornwall, with its more congenial climate". Of those external organisations providing inspiration for Eden, one respondent (ED/SC, Eden Project Interview 1) notes, "Their traditions and what they have achieved have been an important part of the mix here. But we wouldn't be here without the work that they [conservation organisations] did". Thus there is a degree of (political) purchase – and in some respects, moral authority – awarded to restoration efforts, in that judgements (and comparisons) are grounded in the success and transferability of such actions.

The National Forest (Company) was established in part to learn from experiences in other parts of the UK, and as such has drawn upon work undertaken at other forest sites, particularly the Community Forests (such as the Red Rose Forest (Manchester), the Mersey Forest, the Forest of Mercia (Birmingham) and the Forest of Marston Vale (Bedford)), the Central Scotland Forest, the South West Forest, the New Forest, and the Forest of Dean. The Company also seeks to apply standards developed by other organisations, for example, expertise in wetland creation through the RSPB, and heathland and meadow creation and management through Natural England. Taking this further, the NFC strives to "mirror back to them some of the elements of work that we do that they might take forward" (LM, NFC Interview 5).

The Walden Woods Project, in creating Thoreau's Path on Brister's Hill, looked to the Robert Frost Interpretive Trail near Middlebury, Vermont, which displays the poetry of Frost along the trail, and draws attention to the fields and forests of New England (LM, WWP Interview 6). The Battle Road Trail at the Minuteman National Historical Park (Concord and Lexington, MA), and the John Hay II Forest Ecology Trail of the John Hay National Wildlife Refuge (Newbury, NH) were also

considered. In addition, the WWP took inspiration from an installation at UC San Diego, where, to quote one respondent (PL, Sasaki Interview), "Great American artists put works in the landscape in a way that they are not objects in the landscape, but they are objects of the landscape" (a comparison in the UK may be the Yorkshire Sculpture Park). All these examples draw upon socio-natural interactions in the landscape, and point to the role restoration can play in enhancing this.

Through preliminary planning for a recreation and wildlife corridor overpass on Route 2, the Walden Woods Project (undated) looked to the Marjorie Harris Carr Cross Florida Greenway Overpass I-75, Marion County, Florida; Banff National Park wildlife overpasses and underpasses, Alberta, Canada; and New Jersey wildlife overpasses. Were the Route 2 overpass constructed, it could serve as an exemplar, for it "provides an excellent opportunity to be used as a model for the construction of combined passages in other ecologically and historically significant landscapes throughout the United States, or internationally" (UMass Amherst 2007:iii). In terms of wider approaches to conservation and environmental management:

> Massachusetts is unique among the states in being a very active purchaser of land for conservation purposes – be it protection of wildlife for the purpose of hunting, or preservation of historic landscapes, or ecological value. We've got a really long history of preserving land in this state. And so there's a really rich history to lean on, in coming up with our approaches to conservation.
> (LM/SC, WWP Interview 1)

Moreover, policy influences may also inform and contribute to restoration efforts within the three case study sites. Through highlighting the extent of policy influences, it will be possible to gauge the arenas in which the projects have (and are seen to have) the capacity to contribute to contemporary restoration debates. Both the National Forest Company and the Walden Woods Project are guided by land policies, regulations, protection mechanisms, and planning. By way of example, for the part of Walden Woods situated within the Town of Concord, these include the state Wetland Protection Act, wetlands by-law(s), the Community Preservation Act, zoning, conservation restrictions, and land acquisitions (Open Space Task Force 2004). These policies have had the effect of shaping 'restored nature', for they set down how nature can be reconstituted; and particularly where such policies overlap, there is scope for innovative practice. Restoration practices are guided by both environmental/ ecological policies, and social and economic ones, and as such, must be sympathetic to and complement wider environmental, socio-cultural and economic policy contexts.

Within the National Forest Company, the focus is very much forestry-specific, with NFC representatives drawing upon the *UK Woodland Assurance Standard* (UKWAS Support Unit 2006), the *UK Forestry Standard* (Forestry Commission 2004), and the *England Rural Development Programme* (2000), in addition to recommendations from the Forest Stewardship Council. Eden Project representatives cite documents which address wider issues, reflecting the nature of the Project's operations, such as the *Stern Review on the Economics of Climate Change* (Stern 2007) and the *Millennium Ecosystem Assessment* (MEA 2005). For representatives at the Eden Project, such documents provide a foundation for advocacy (and legitimacy) of particular issues; a contrast to the National Forest Company, where documents provide a more regulatory frame of reference. These documents and policies have steered the direction of the projects, and allowed the projects to address contemporary readings of environmental concerns. Both Eden and NFC representatives also drew upon the Rio Earth Summit (1992), with an Eden representative (ED/SC, Eden Project Interview 4) noting, "You could argue that it was the Rio Summit on sustainable development that kick-started the notion of Eden as a sustainability exercise".

Although there is an obvious embeddedness to restoration practices, they also draw upon the supra-local to sustain their justification – rationales are informed and governed by supra-local policies and roles (Milbourne *et al* 2008; Cowell 2003). Restoration rationales and practices are framed by legislative, regulatory frameworks – principally land use designations, -management and -policies – to satisfy and meet particular (wider) environmental objectives; and also by practitioner experiences. One example to illustrate this point is the National Forest Strategy (NFC 2004b), which draws on national policies to underpin all activity in the National Forest.

In recent years, though, the language of government policy has changed, and the projects are adapting to a subtle paradigm shift through a slight rephrasing and sometimes reworking of rationales. This is largely in order to still be perceived as relevant and pioneering, for the substance does not change. To take the National Forest as one example, a NFC representative (C, NFC Interview 9) notes, "Policy has changed from being 'green' to tackling individual issues of climate and carbon, and we need to respond to that". There is thus a capacity to react and respond to changes in environmental policy and planning, bringing contemporary issues immediately to the fore and working towards solutions.

The three projects all have a significant impact across the global-local, contributing to (and informing) debates, practices, and policies at the local, national and international level. As one respondent (ED/LM, Eden Project Interview 12) suggests, "The international and the regional should bring value to each other", with a balance to be determined between the global and the local. What happens at the local level will inform what happens at the global level, and vice versa.

The spaces occupied by the case study projects have a part to play in the wider reach of the projects. The Eden Project's location in a former china clay pit, the National Forest Company's remit of 200 square miles across the East and West Midlands, and the Walden Woods Project's focus on a pond and the surrounding woodland all provide identifiers, but more than that, they relay the composite environmental, socio-cultural, economic and political contexts guiding the projects.

The influence of the Walden Woods Project on a global-local exchange arises from the fact that Thoreau is an internationally-recognised and renowned American writer, and as such, "People come from all over the world to experience Thoreau" (PL, Sasaki Interview). However, there exists a slight paradox with regard to the significance awarded to the area, for "Attributing national significance to Walden Woods is touched with irony. Thoreau chose it as his home for its very commonness, unremarkable except perhaps for the pond" (National Park Service 2002:28). Despite this, efforts to protect and conserve Walden Woods should reflect its wider relevance, for as one respondent (H/SC, FOTC Interview 1) argues: "It's not just the Town of Concord that should be making the decisions". The international influence of the Walden Woods Project is developing, and expanding, for:

> I don't think it has gone international yet, only because it is so hard to get your message out there – everybody is bombarded with so much information, and at times we still do almost cater to a small group. As much as you like to think that everybody has an interest in conserving land and in the environment... – it's not the first thing on people's minds these days.
>
> (FI, WWP Interview 7)

Through incorporating advocacy alongside conservation, education and research, the WWP has become much more nationally- and internationally-focused (M, WWP Interview 5). Although the conservation element is focused on a very specific tract of land, the education and research programmes are more global in their approach. At a local level, one WWP representative (PM, WWP Interview 4) notes,

"We may be the big fish in this pond, but in the bigger pond we're not, and I think that's because our focus is so specific to Walden Woods". This is echoed by another representative who argues:

> Locally it's pretty influential – certainly in the conservation realm. [...] We've got a strong voice here and we're respected. We are known state-wide; we're known nationally and internationally – but because we have such a restrictive focus area, that affects our importance at larger scales. Probably once we get beyond Eastern Massachusetts, we kind of fall off the radar.
> (LM/SC, WWP Interview 1)

Local links are solidifying, with much of the money for land acquisitions coming from local donors. The Walden Woods Project also promotes the need to protect what is local, with an acknowledgement that "It's not always a bad thing to defend your home turf" (LM, WWP Interview 6).

The Walden Woods Project has contributed to, and alongside Walden Woods itself, features in, documents linked with land use planning. These include Open Space and Recreation Plans for both Lincoln and Concord (Open Space Committee 2007; Open Space Task Force 2004) and a Comprehensive Long Range Plan for Concord (Comprehensive Long Range Plan Committee 2005). Within the context of the Lincoln plan, Walden Pond State Reservation and the Walden Woods Project are classified as scenic resources and unique environments (that fall within Walden Woods). In the Open Space and Recreation Plan for Concord, Walden Pond and Woods are discussed within the context of large natural areas, major wildlife and water protection corridors, major human corridors, outstanding biodiversity sites, and properties of conservation interest – reinforcing their significance. The need for a corridor across Route 2 is also highlighted, alongside proposed local trails across the landfill and Brister's Hill – advocating (and restoring) landscape connectivity. However, the Open Space Task Force's (2004) conceptualisation of Walden Woods – the large natural area 'Walden Woods/Town Forest'[59] – does not overlay the Walden Ecosystem proposed by Schofield (1989) and Blanding (1988), with implications for restoration and conservation efforts, granted the differences in land classification.

[59] As the Open Space Task Force (2004:147) states: "This large natural area of about 1,180 acres extends from the Town Forest southward across Brister's Hill, Route 2, the town landfill, Walden Pond, the Robinson well site, and Fairhaven Woods". Not only does the classification include the Hapgood Wright Town Forest to the north and Fairhaven Woods to the south, but the surface area is only half that identified by Schofield (1989) and Blanding (1988).

The National Forest Company, while influential at a local and regional level, strives for greater national (and indeed international) recognition. Within its boundary, the Forest has been (and continues to be) a strong driver for change and improvement. Although a non-statutory consultee on planning issues, the NFC is looking for Forest-related gain[60] in terms of major development in the area, to further the objectives of the National Forest Strategy (NFC 2004b). At the national level, it is viewed as an exemplar of sustainable, multi-purpose forestry; a demonstration site for silviculture practice and management, with one respondent (LM, NFC Interview 5) suggesting, "Woodlands in the UK as a whole have benefited from the work the National Forest does". In addition, the Forest has national significance "in demonstrating how large-scale landscape change, across two regions, can provide diverse and locally sensitive benefits, catalyse further regeneration and bring long term improvements to quality of life" (NFC 2006:6). A national awareness study for the National Forest indicated that in 2006 approximately one-third of the UK had heard of, and knew about, the Forest. This proportion increases in the East and West Midlands where the National Forest is located, to 61 per cent and 54 per cent respectively (Clarke Associates UK Limited 2006). Key messages tied with the National Forest centre on conservation, leisure, and being environmentally-friendly (Clarke Associates UK Limited 2006).

The NFC also engages in national, regional and local consultation on policy, and is written into national planning guidance, including *A Strategy for England's Trees, Woods and Forests* (Defra 2007) – the Government's renewed strategy, building upon the *England Forestry Strategy* (Forestry Commission 1998). The National Forest is mentioned throughout the revised strategy: as a 'popular initiative'; a successful approach; a site of 'continuing activity and innovation'; and as showing 'how environmental regeneration and business development based on trees and woodland has a role in improving social and economic wellbeing' (Defra 2007). It also features in the Forestry Commission's *Information Note 15: Creating New Native Woodlands: Turning Ideas into Reality* (Harmer 1999), which analyses how Forest Research drew upon recommendations of FC Bulletin 112 (Rodwell and Patterson 1994) in the establishment of two new native woodland demonstration sites within the

[60] 'Forest-related gain' refers to activities undertaken in the Forest which serve to advance and promote the NFC's mission, particularly with regard to Forest creation.

National Forest. With regard to environmental restoration policy concerns, the National Forest Company (2004b) acknowledges:

> It is essential that the Forest continues to be written-in to minerals, waste disposal and derelict land policy at all levels, as this provides the context for restoration of individual sites. The Forest is included in National Minerals Planning Guidance, Regional Planning Guidance, County Minerals and Waste Plans and strategies produced by English Partnerships, emda and Advantage West Midlands. As new policy documents are produced, the NFC will seek to influence them to include policies which reflect the objectives of the Forest Strategy. In turn the Forest can help meet the policy objectives of other organisations by delivering practical solutions to the restoration of mineral workings, derelict land and landfill sites through Forest-related schemes.
> (NFC 2004b:86)

The National Forest is also considered within the England Rural Development Programme (2000), and the Regional Development Agency's spatial planning and economic strategies; alongside contributing to national Biodiversity Action Plan targets (PL, NFC Interview 1). Furthermore, the National Forest Strategy (NFC 2004b) is promoted as a policy consideration in National (and Regional) Planning Guidance and Statements; and Forest creation features in Local Development Plans and Frameworks. The NFC also contributes to policy agendas for: biodiversity, countryside access, agricultural diversification, environmental education, economic development, social inclusion, and healthy living (NFC 2004b).

As an example of sustainable forestry and forest management, the National Forest appears within the Parliamentary Office of Science and Technology's (2007) *UK Trees and Forests*. The Forest also features as an example of delivering environmental quality in English Partnerships (undated:7) for it demonstrates "how forestry can be a catalyst for the regeneration of derelict and contaminated land. The Millennium Discovery Centre will be an educational resource, where visitors will be able to see new ideas and technology being developed to encourage the sustainable use of forest resources". Environmental regeneration – through forest creation – is a catalyst for social and economic regeneration, and is thus a complement to wider discourses of sustainable development. Furthermore, regeneration practices are presented through demonstration and test-bed sites, to educate and thus disseminate new knowledge and understanding.

The influence of the Eden Project in local, national and international arenas stems in large part from its ability to demonstrate an environment-economy

interaction rather than a dichotomy, alongside the (creative) platform from which it can operate – that of a 'living theatre of plants and people'; a global platform for debate. A global-local connection is inherent to the Eden Project, for "No matter how famous Eden becomes it will represent little of real value if it has not made a lasting impression on the economy of Cornwall and the far South West" (Eden Project 2006b:47). Key themes evident within Eden include regeneration, social enterprise and public education, with an Eden representative (M, Eden Project Interview 9) noting, "We are recognised as convenors for high level debate between the public and private sector". The 'authority' held by the Eden Project to speak on certain issues is a result of its approach to (and achievements in) tackling environmental, social and economic issues – its advocacy of the inter-dependence between plants and people; of using restoration and regeneration discourses to stimulate social and economic change; and through its functioning as a forum for discussion and debate. The Eden Project has filtered into a national consciousness (LA, LUC Interview); and at an international level, it is now one of a group of botanic gardens around the world that is working towards raising awareness of particular issues. Moreover, Eden has exhibited at events such as the Chelsea Flower Show, and at Royal Botanic Gardens, Kew.

What remains uncertain is whether there are "many measurable conservation outputs that you would attribute to [Eden]" (ED/SC, Eden Project Interview 1). For one Eden representative (SC, Eden Project Interview 2), a part of Eden's influence is as yet undiscovered: "Both within Cornwall and nationally (and around the world), I think we're only just scratching the surface of what's possible. By pulling together all kinds of organisations that wouldn't necessarily work together, you can really catalyse some important changes". Despite this, Eden has gained an international reputation for its "positive, solutions-orientated approach to communicating difficult messages to all audiences. Creativity and dynamism are at the heart of this [...] To date, we have not been as successful in promoting Eden's outreach work" (Whitbread-Abrutat 2006:19). The promotion of outreach work has strengthened in recent years, and is a theme explored in Section 7.3, through analysis of project networks and collaborations, and knowledge transfer practices.

There remains, however, the issue of raising awareness of the existence of the Projects – with differing implications for each. There is a slight catch-22 situation, as, "When you hear about it, you think it's a good idea – but you have to hear about it"

(M, RESTORE Interview). Thus outreach becomes hugely significant. With regard to Eden, a project representative (ED/SC, Eden Project Interview 4) notes, "It is not an issue of *how* to, or of letting *enough* people know, but it is the fact that some people still don't know what Eden is. [...] It is important to still be surprised, though". Within the National Forest, there is a dual awareness that "People still argue that it doesn't look like a Forest" (PM, FR Interview 2) alongside "people think, 'well done, job done – fantastic – woodland cover 17 per cent, don't need to do anymore'" (LM, NFC Interview 5); both of which have implications for the Forest vision, and Forest resources. In one respect, there is almost a resistance to the finiteness or boundary of restoration efforts; a result of pre-conceived understandings of 'woodland' and 'forest'. Additionally, there is not always an understanding of what the Forest has emerged from, for it is framed by wider expectations. The juxtaposition within Walden Woods is that while people have always known about Walden (LM, WPSR Interview 1), there was an equal belief that "Walden Pond was bound to be protected – it's just one of those things. But it turned out there was just a small State Reservation" (M, RESTORE Interview).

What is also stressed is an acceptance of not only the projects' presence in the landscape, but also of change. As a WPBOD respondent notes of restoration efforts at Walden Pond: "some people say jokingly, 'you've been too successful!' [...] they can't see the Pond anymore and it's too wooded" (LA, WPBOD Interview). Yet evidence of change and results are required (by society) prior to any change in action. However, as a WWP respondent (FI, WWP Interview 7) argues, "there are some that are still going to believe what they want to". There exists a suspicion 'towards environmentalists', insofar as "embedded in it is a fear that these green people coming to town, they're going to take away our rights to do whatever it is we want" (PL, Sasaki Interview). The concern, therefore, is that the environmental movement will come to dominate, rather than complement, societal actions. Restoration practices strive to improve the environmental condition, but do so in a way that promotes and encourages participation in and interaction with nature (allaying any fears of an overpowering environmental movement). Restoration practices may also filter into and complement social and economic improvements.

Despite the influence the case studies wield within the global-local dynamic, there is an associated concern of the implications of a growing environmental awareness amongst society. What is evident is a shift into the 'green space', with the sustainability agenda coming to the forefront of debates. Certain issues are beginning to 'take hold in the popular consciousness' (M, Thoreau Society Interview), such as species extinction, deforestation, a growing global population, and climate change – and people are eager to become involved in programmes and projects that are making a difference (M, WWP Interview 5).

This is particularly evident within the National Forest, which has witnessed an increase in requests over the last eighteen months for tree planting events from companies to aid in carbon offsetting (and confirming commitment to the environment). As a NFC representative (PM, NFC Interview 6) notes, "People realise that planting trees is one of the mechanisms for doing something to counter global warming". Individuals are also beginning to grow plants from seeds to then plant in the Forest (LM, FC Interview 2). The NFC is now regarded as the first point of call for many issues. However, there is a need to maintain (scientific) integrity – although the National Forest encompasses 200 square miles, "It can't really be regarded as somewhere that you can just plant millions of trees and solve the problems of climate change. It's not on that scale" (PL/LM, NFC Interview 4).

Onsite interpretation is also reflecting contemporary environmental issues – as an example, the Eden Project displays summaries of the *Stern Review* (Stern 2007) within the Core – a subset of its wider Climate Revolution theme. The issue of climate change is one that will have repercussions for the restoration potential of all three case study projects, for changes will affect the terrestrial condition, which in turn will inform the type of restorative action which could take place there. Concerns of global warming and climate change were raised predominantly by Eden Project representatives, yet the National Forest Company has formalised its position on Forest creation and climate change (see Nichols 2007). In 2007, the Walden Woods Project was one of several sites across the US to host *Step It Up* – a National Day of Climate Action, calling on Congress to reduce greenhouse gas emissions (Field Journal: WWP). Climate change concerns have thus become integral to all the projects.

Nevertheless, there are two issues facing projects in the wake of increasing environmental awareness amongst society. The first, project actors claim, is a belief

amongst the general public that projects can tackle any issue, for as one Mass Audubon respondent notes, "If you're seen as an effective group for conservation, people feel if they can just get their issue on your radar, then you can do something about it" (SC, Mass Audubon Interview 3). Secondly, it is that projects can bolster individual issues – to use the National Forest Company as one example, a project representative argues, "More people do turn to [it] to try and help them with their own issues; fight their own battles in some respects" (PL, NFC Interview 1). Project representatives believe the general public are seeking projects both in terms of capability, and as a symbol, yet no project has the capacity to fight every battle.

However, it is again a matter of raising environmental awareness in the first instance (as with raising awareness of the existence of the projects), for as one respondent (PL, DCR Interview) acknowledges, "I think that the people who care about it will always care about it. [...] It doesn't seem to me that we awaken some latent conservation urges in people who didn't realise they had them once they get to one of our facilities". In addition, there is the complication of expectations people hold with regard to environmental issues: "People expect to see what they've always seen; expect to see what they already know [...] so you have to start to lure people into that understanding that these things can be approached because they are not just a list of disasters" (ED/SC, Eden Project Interview 1). Moreover, there is the concern that interest will wane if change is not forthcoming or evident. There will, however, always be those in society who will remain sceptical (LM, LCC Interview 1).

The capacity of the case studies to contribute to restoration policy discourses and debates is also informed by limitations faced by the projects. The major limitation facing all three surrounds funding – put simply, the Eden Project is paying back the final instalments of a bank loan; the National Forest Company receives its funding from Defra (a budgetary allocation through central government); and the Walden Woods Project is largely dependent upon donations. Thus, as one respondent (M, WWP Interview 5) notes, "You can only do what you can pay for. And there's always more that you want to do than what you're able to pay for". Of the financial constraints Eden faces at present, one Eden representative (M, Eden Project Interview 9) does however note: "This is part of our engagement with the real world, and we wouldn't want to change this as it forces us – like others – to make choices".

The projects are also restricted by space, with each established to operate within a defined geographic area. To take the Walden Woods Project as an example, access to the Project headquarters (including the Thoreau Institute) is limited, with "commitments to the neighbours not to draw a lot of public up here" (LA, WPBOD Interview). As a consequence, the availability of land becomes an issue (and for the NFC and the WWP, land prices). In spite of this, one respondent (ED/SC, Eden Project Interview 4) points to a colloquial 'greenhouse law' – of filling the available space, then requiring more. This in turn feeds into debates about space, scale and power (see Chapter Five; Cox 1998). Concern also surrounds 'political fights that always interfere' (M, CLI Interview). Illustrative of this, the actions of the NFC are prone to changes in government policy, or changes of government; and are determined by approval of European or national funding programmes.

The element of fear is another limitation which could have consequences for the operations of the projects. A fear *external* to the projects, driven by misconception or misunderstanding – evident in the statement from a CLI respondent: "There are some in the community that use fear of international conventions to create confusion in the local communities and at the state level" (M, CLI Interview) – but also a fear *internally*, of damaging what the projects have achieved thus far (LM, Eden Project Interview 7). Such a fear – whether expressed externally or internally – might cause the projects to advance the 'familiar', what is 'safe', when what is required is an approach which progresses beyond the ordinary to set new standards. Fear, at present, is simply a potential influence, and one the projects are aware of.

7.3 Transferring and Disseminating Environmental Meaning

7.3.1 The Multitude and Extent of Project Networks and Collaborations

The degree of interdependency and collective action amongst projects is significant, as it provides an indicator of the dissemination (and subsequent uptake and mobilisation) of knowledge on environmental restoration. Across the operations of the Walden Woods Project, the Eden Project, and the National Forest Company, a significant level

of exchange exists with regard to restoration, evident in the extensive networks and collaborative efforts at the three sites (as illustrated in Figures 7.1, 7.2 and 7.4[61]).

The Walden Woods Project is not undertaking a land conservation (or indeed restoration) project outside of the boundaries of Walden Woods, yet as one respondent (LM/SC, WWP Interview 1) argues, "We will give our endorsement to things that we feel are aligned with our goal and our practices. [...] our conservation mission is very tightly focused on a small geographic area, but the remainder of what we do is really global in nature". Attention is also awarded to the wider community context, to strengthening networks and collaborations, with one WWP representative noting: "We really feel that it's important for us to be a part of the community in which we live and work. There're a lot of good groups here, we're very lucky. It's almost an embarrassment of riches in this area because there are so many wonderful education and historic preservation groups and conservation groups" (M, WWP Interview 5). The achievements made in protecting Walden Woods from development, and restoring tracts of land, are a result of strong partnerships, "between the state and federal governments, the Walden Woods Project, and surrounding communities and local land trusts" (Henley 2002 in Maynard 2005:331-332) (see Figure 7.1).

[61] Figures 7.1, 7.2 and 7.4 have been constructed to illustrate the extent and intensity of project networks and collaborations across the three projects, but with sole regard for environmental restoration. All three case study projects have links with numerous other organisations, addressing many diverse themes, but such a portrayal is not relevant in this thesis.

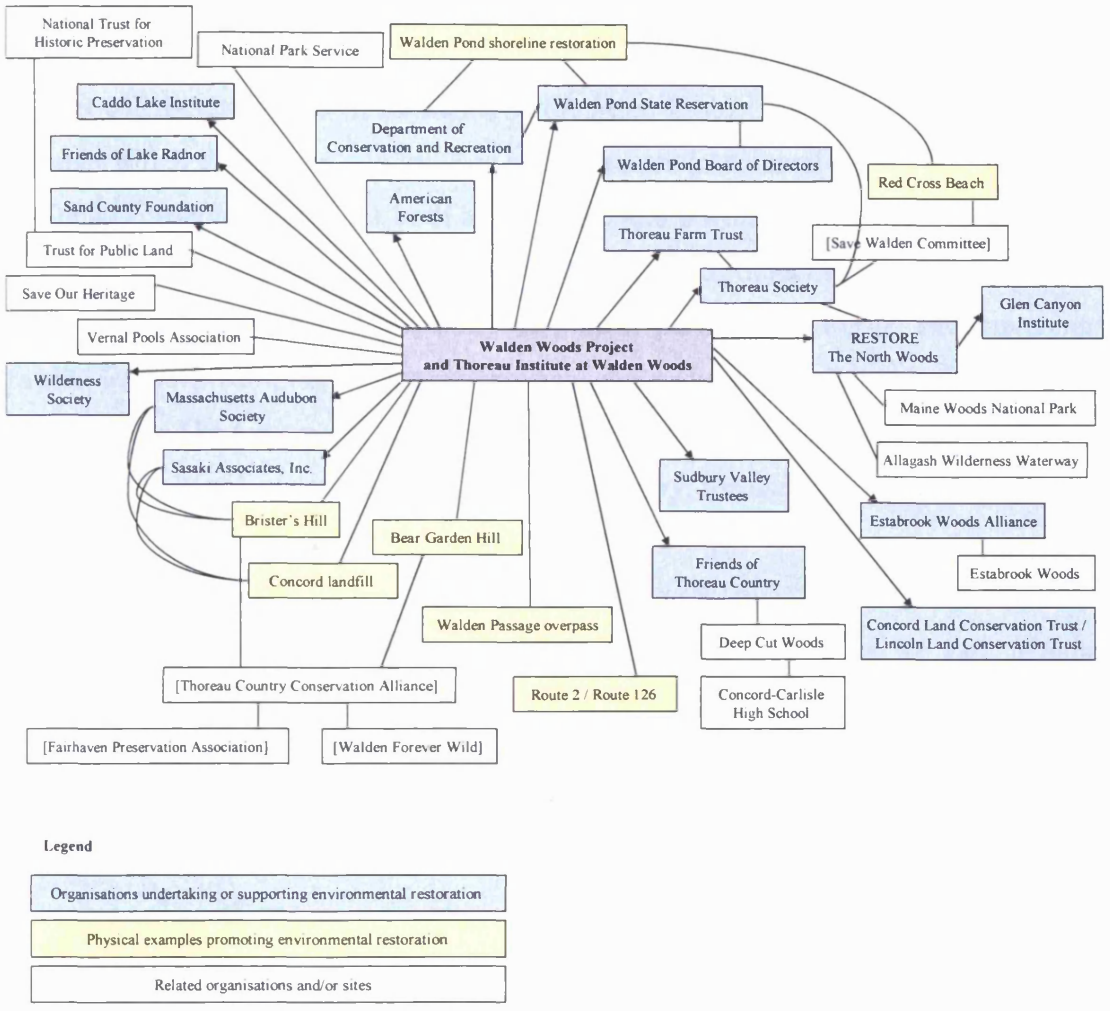


Figure 7.1 | Environmental restoration networks and collaborations at the Walden Woods Project (Source: WWP and network Interviews; Field Journal: WWP).

Numerous land trusts and non-profit organisations are based within the Towns of Concord and Lincoln (and surrounding areas), working towards similar ends. Efforts extend beyond simply the restoration and conservation of Thoreau Country to encompass the historical and cultural influences of the Transcendental movement more generally, which was established in this area of Massachusetts. While it can indeed prove beneficial in terms of knowledge transfer and collaborations to have similar projects located together, it can at the same time have disadvantages:

> One thing that's happened is that I think there are so many different groups in Concord that are dealing with Thoreau and with Walden that I think it gets confusing for people as to who's who. We hear that a lot. [...] If you came

> from outside, and didn't really know about all the different groups, you might think 'aren't they all doing the same thing?'
>
> (LM, WPSR Interview 1)

Project collaborations are fundamental to the Eden Project, as they provide a medium through which the Project can explore numerous environmental issues, and as Mabey (2005:45) observes, Eden "is both a real place and a symbol, a web of communities that work in their own right, and narrate the working of others in the world beyond". Within the Eden Project, a hierarchy of project partnerships exists, encompassing: *people we work with*, *collaborative projects*, and *programmes* (ED/SC, Eden Project Interview 6). The terminology 'Bodelva and Beyond' is illustrative of wider networks and collaborations outside the Eden Project boundary; the use of terminology mirrored in the NFC and 'the National Forest and Beyond'.

Of Eden Project partnerships, one Eden representative notes, "Our view is that, time permitting, we should assist as many worthwhile projects as we can, without compromising our agenda by taking on those of others" (M, Eden Project Interview 9). This is qualified by another project representative (ED/SC, Eden Project Interview 1) for whom, "It's not simply the fact that there's a conservation project. It's got to be the right sort of project that gives a flow back in terms of stories we can work with onsite" (evident in Figure 7.2). These stories are fundamental to the Eden Project, forming the foundation to (and played out through) the exhibits onsite. Examples include, in the Outdoor Biome, crops that feed the world, new uses for crops, pollination, and eco-engineering. In the Rainforest Biome, exhibits address West Africa, tropical islands, rubber, bamboo, sugar, bananas; and in the Mediterranean Biome, the Mediterranean basin, South Africa, California, citrus, grapevines, and perfume (Field Journal: Eden Project). All the stories are presented to illustrate the different (inter-)dependencies between society and nature.

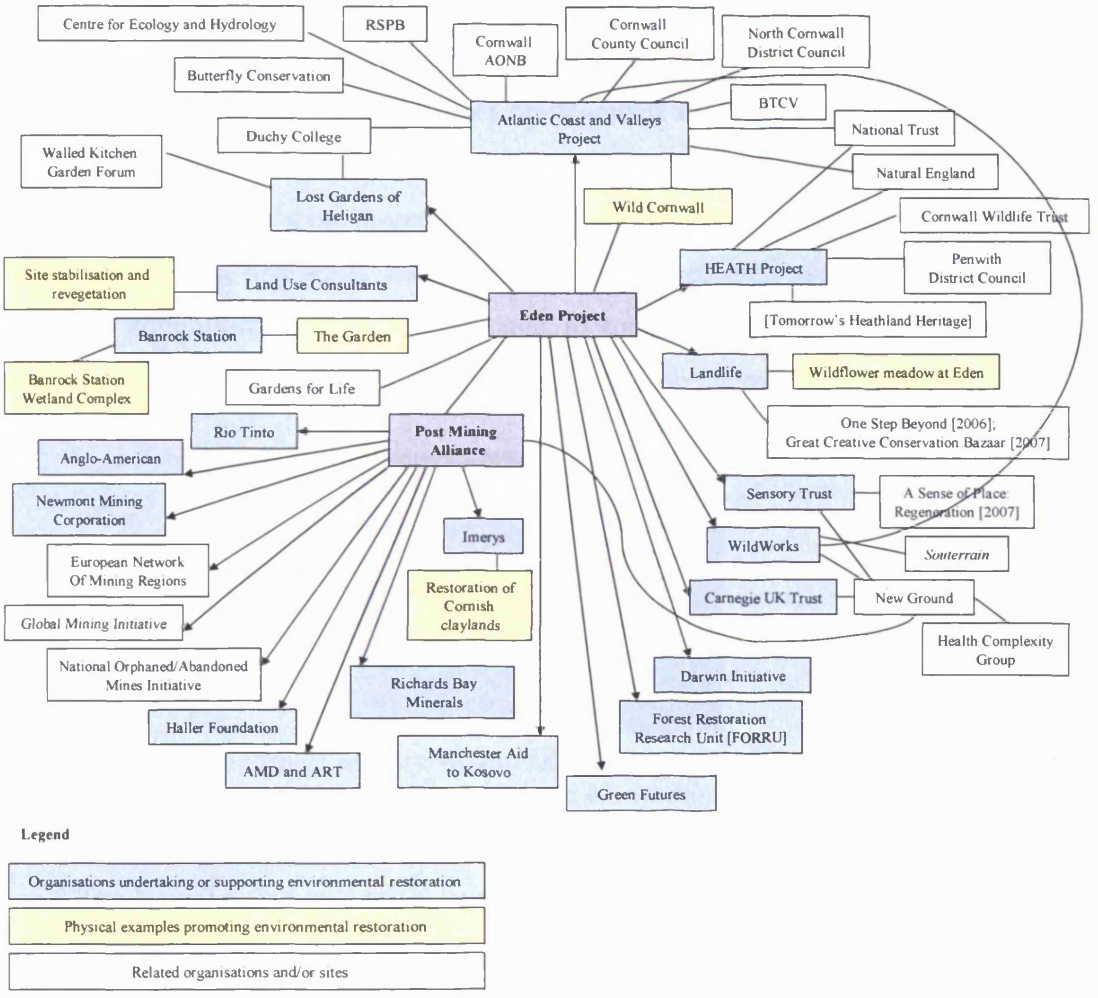


Figure 7.2 | Environmental restoration networks and collaborations at the Eden Project (Source: Eden Project and network Interviews; Field Journal: Eden Project).

As further illustration of the Eden Project's involvement in wider restoration networks, I wish to highlight some of the projects featured in the above Figure 7.2. The following examples all feature within Eden's tropical timber exhibit (see Figure 7.3). In collaboration with the Darwin Initiative, Eden has been involved in restoring fragile forests in the Seychelles, and protecting endangered forest systems in Argentina. With regard to the former, Eden is working with the Seychelles Government to design education programmes, and provide training on forest management practices; alongside establishing a nursery, and aiding research into the propagation of indigenous rare plants. For the latter, Eden is working with regional governments in Argentina to develop a biodiversity conservation training programme (a management plan) for the Yaboti Biosphere Reserve, to protect the forest and its communities. Through this, it has provided institutional, botanical and ethno-botanical

support. In addition, the Eden Project, through Chiang Mai University and its associated Forest Restoration Research Unit (FORRU), has been working in Thailand to develop tree nurseries, and plant trees on degraded sites in protected areas (see also FORRU 2006). Richards Bay Minerals is restoring dune forests in northern KwaZulu-Natal, on South Africa's north-east coast; and QMM (part of Rio Tinto), through its Madagascar mining operation, has undertaken forest research and regeneration work with local communities. This has resulted in management of the region's natural resources, and the designation of conservation zones on the mining deposit.

Figure 7.3 | An Eden Project display within the tropical timber exhibit, highlighting (forest) restoration involvement: 'Across the world people are working together to re-grow the forest – forests they may once have chopped down'.

The New Ground project[62] – a collaboration between the Eden Project (as lead partner), WildWorks, the Post-Mining Alliance, the Health Complexity Group (based within the Peninsula Medical School), and the Sensory Trust – is concerned with community regeneration in rural and peripheral areas where the main source of industry has been lost (Field Journal: Eden Project). Through exploring community transitions/transformation, community structures, community identity (narratives), and reconnecting communities (sense of place), the project strives to add value and sustainability to natural and local resources. It is about restoring a sense of faith and belief in an area, with the indirect potential for environmental amelioration and perhaps restoration. Although now redundant, the Eden Project also spearheaded[63] a New Lives–New Landscapes initiative to pioneer (landscape-scale) restoration of biodiversity on mined land within Cornwall (Eden Project undated).

[62] Supported by the Rural Community Development Programme of the Carnegie UK Trust.
[63] With partners Camborne School of Mines, Cornwall County Council, Cornwall Wildlife Trust, English Nature, the Environmental Agency, the Forestry Commission, the National Trust, and the University of Reading.

The Post-Mining Alliance is also contributing to networks of environmental restoration, for it seeks to promote good practice, convene and facilitate events, network with regional centres of excellence, work with partners to advance site-specific solutions, and advance education and public engagement (Post-Mining Alliance 2007b). A major element of the Alliance's work will focus upon delivering site-specific projects; thus it is drawing upon experiences and transferable lessons from elsewhere to inform its operations (such as recommendations from the Mining, Minerals and Sustainable Development project (IIED and WBCSD 2002)). Examples of such experiences include: integrated restoration of Ambuja Cements Ltd limestone quarries (India); the Bamburi Quarry rehabilitation project (Kenya); the AMD & ART Park (Vintondale, PA); social mitigation in closure planning (Romania); Martha Mine closure planning and community consultation process (New Zealand); and Trout Unlimited's Public Lands Initiative – restoring lands degraded by abandoned hard rock mines (western United States) (SC, Eden Project Interview 2, 3).

Eden is prevalent in supporting charitable initiatives, yet as one respondent (M, Eden Project Interview 9) notes, "We have deliberately declined to build Eden Projects in 13 other countries so far. We do not wish to be like Disney!" Were Eden to develop its position of supporting and establishing projects within the UK and internationally, the expectation is that:

> The one that will finally capture our interest will not be anything like this. Because it will feel too much like reinventing the wheel. It will be something that has got quite a different set of circumstances, and something very, very different that might emerge, but where the same sorts of elements of thinking seem relevant.
>
> (ED/SC, Eden Project Interview 1)

It is not simply a matter of retaining power and a uniqueness, but rather that the factors which converged to allow the creation of Eden cannot be replicated to the same degree elsewhere – thus the ethos and drive of the Eden Project would change.

The National Forest Company is not always physically involved in activities on the ground, and thus a lot of work is undertaken in collaboration with, or through, partners (such as the purchase and management of land) – with the NFC encouraging partners to develop networks (C, NFC Interview 9) (see Figure 7.4). Both public- and private sector partnerships are important, and valued, by the National Forest Company.

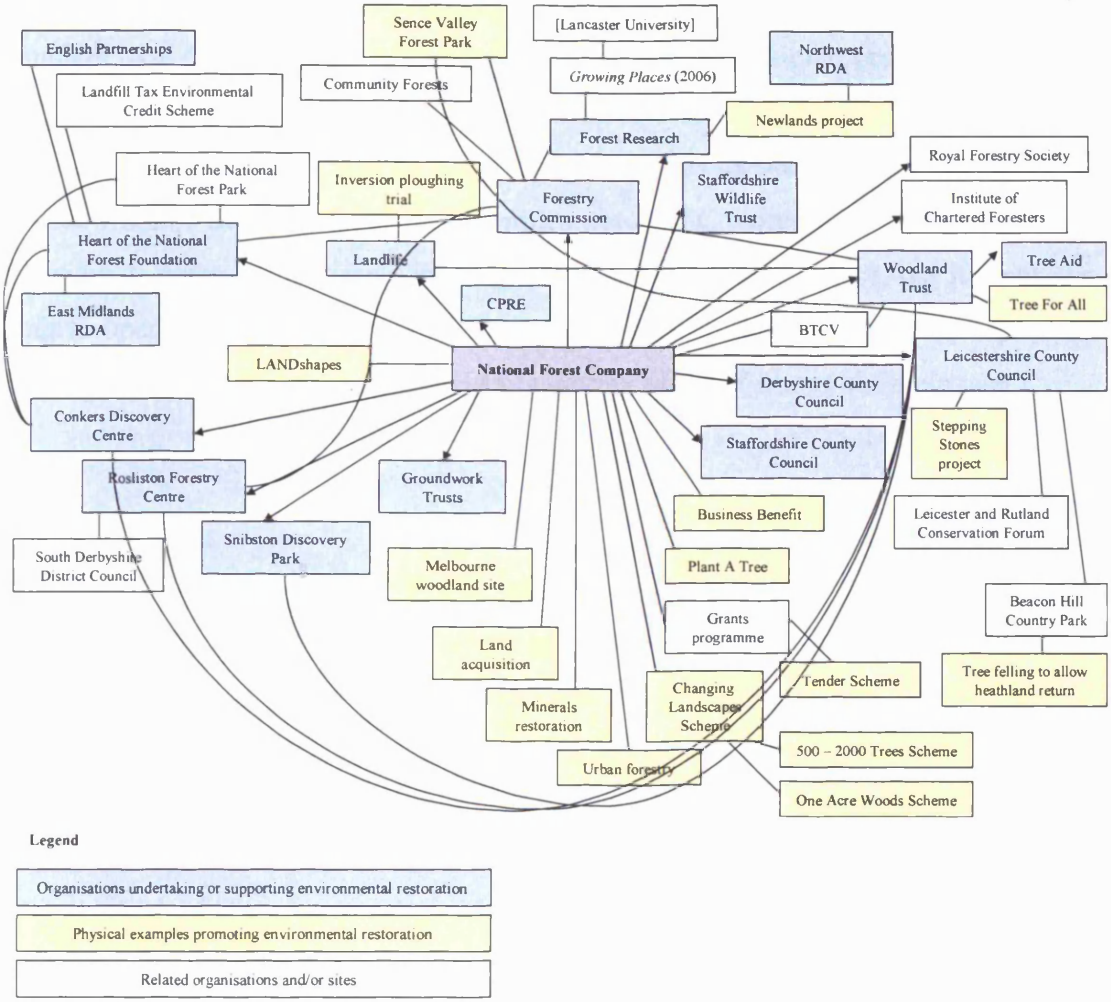


Figure 7.4 | Environmental restoration networks and collaborations at the National Forest Company (Source: NFC and network Interviews; Field Journal: NFC).

The National Forest Company has a two-tier system of macro and micro partnerships, as one project representative explains: "If we talk about the Forest as a whole, then locally we are connected with each of the local strategic partnerships that operate in the local authority areas. Other partnerships tend to be on a more project-by-project basis, rather than general working" (PL/LM, NFC Interview 4). The NFC acts as a catalyst of sorts, with collaborations fundamental; helping organisations meet similar aims. The NFC is not a major landowner, and as such has limited (land) assets, with partnerships a key mechanism for delivering, and indeed encouraging, Forest creation. Community links are again significant for the NFC – 'It is all about familiarity' (M, HNFF Interview) – and as such, it supports local groups wishing to undertake Forest-related activities, or pursue interests within the Forest, through its grants regime.

The National Forest Company is involved in projects that overlap the Forest boundary, and those that extend much further – "We're a national project, so we will work with other projects to support them" (PM, NFC Interview 6). However, the NFC is not set up to offer time in a consultancy capacity, as its operations are specifically focused within a designated 200 square miles. As a NFC representative (PL/LM, NFC Interview 4) notes, "It may provide ideas and inspiration and advice, but it's not our remit to operate outside our area. Now arguably it could be, and it should be, but as soon as you start to do that, you potentially deflect yourself from your main task".

* * *

Through networks and collaborations with other organisations, the Walden Woods Project, the Eden Project, and the National Forest Company advance and promote different elements of restoration as set down in the fivefold typology. Within each of these networks, there exist particular readings of environmental restoration which are further disseminated through an associated secondary tier of networks, and, in turn, adapted and modified. As such, while the 'restored entity' is linked with the particularities of the organisation which leads on it, the lessons learned can be transposed elsewhere.

7.3.2 Processes of Knowledge Transfer and Dissemination

The exchange of information, and the capacity of lessons to 'jump scale' (Cox 1998), are fundamental to the transfer of practice and policy, and associated networks. There are several mediums through which the Eden Project, the National Forest Company and the Walden Woods Project can advocate and disseminate their ideas. Some of this knowledge is formally presented, in other cases, it is more informal. Yet as one respondent (PM, Eden Project Interview 10) argues, "It is more about sharing – knowledge sharing, information sharing". Within this particular research context, formal knowledge transfer essentially relates to material published by the projects, or seminars and conferences hosted onsite; distinguishable from informal knowledge transfer, which predominantly draws upon the influence of onsite interpretation.

Formal Knowledge Transfer

Knowledge and experiences of environmental restoration are formally disseminated through several media across the case studies. Conferences are often hosted onsite by the projects, with the following examples drawn from personal experience during my research placements. The Eden Project (in collaboration with Landlife) hosted *One Step Beyond: A Creative Conservation Meeting: Ecological Restoration and the United Kingdom* in 2006, which brought together an informal but proactive creative conservation and ecological restoration network. In particular, it extended some of the findings of the 2005 SER International conference to advance the social context of restoration; that is, socio-nature interactions. One of the key messages coming out of the *One Step Beyond* conference was of restoration as a 'call to arms', acknowledging the social and political context, for the twenty-first century is a time of radical and pivotal (environmental) change (Field Journal: Eden Project). Linking back to the fivefold typology, restoration was framed in terms of *reparation*, and *sustainability*. In 2007, Eden (again with Landlife) hosted the *Great Creative Conservation Bazaar*, coinciding with a joint Eden Project–Sensory Trust *A Sense of Place: Regeneration* conference, the latter linked with the New Ground project. Restoration was discussed predominantly within a post-mining context, where *social regeneration* discourses dominated, exploring the (dis)connections between community and the landscape.

Project actors also attend and present at international conferences and symposia, thus further promoting the operations of the projects. Such formal knowledge dissemination allows the projects to engage in particular debates, be it restoration, climate change, carbon sequestration, or social engagement. Moreover, the projects offer public lectures and seminars, such as the *Discovering Walden Woods outing series*, *Walden Woods Project Stewardship Lecture Series*, and the *Eden Friends* programme. One event I participated in – a *Discovering Walden Woods* outing focusing on the wildlife associated with vernal pools (Field Journal: WWP) – provided new insight into the 'Walden Ecosystem', and the nature-society interactions and influences that take place therein; it presented an ecological framing of issues.

Working Groups, although only present within the National Forest Company, also aid formal knowledge exchange – addressing biodiversity, access and recreation, tourism, planning, woodland economy, community activity – and involve numerous partners, who are "all party to what we are thinking about and writing in policy", such

as the Strategy or the Biodiversity Action Plan (PL, NFC Interview 1). Through Eden's links with the Lost Gardens of Heligan, formal staff exchanges are developing between the two sites, providing opportunities for staff to exchange knowledge and experiences (ED/SC, Eden Project Interview 1). All three case studies also offer environmental education programmes (see Section 6.2.2 and Appendix 6), further promoting communication and knowledge networks.

There are several books charting the development of the projects – namely, *Eden* (Smit 2002); *Out Of Eden: The Eden Project Companion* (Eden Project 2005)[64]; *The National Forest – Heritage In The Making* (Parry 2006); and *Walden Pond: A History* (Maynard 2005). Each of the texts draws heavily on the landscape context as its foundation. Both Maynard (2005) and Parry (2006) analyse changes to the landscape through an historical lens, with particular attention awarded to the environmental, social and economic history of the areas now recognised as Walden Woods and the National Forest respectively; and the importance of socio-nature interactions. Maynard (2005) extends more of a focus to restoration efforts, and the need for continued restoration. While 'restoration' is not a term advocated throughout Smit (2002), it is nevertheless addressed through accounts of the construction process – both in stabilising and revegetating the site, and later, in constructing the biomes and planting the outdoor landscape. *Out of Eden* provides a different approach, addressing themes of plants for biodiversity, food, health, and materials; and focusing upon specific exhibits (and indeed regions) represented onsite. Horticulture and botany are combined with history and (global) politics to explore plant narratives and stories; taking the Project's ethos 'Beyond Bodelva' and applying it to other contexts.

One further example I wish to highlight is that of *Heaven Is Under Our Feet* (Henley and Marsh 1991) – a collection of essays submitted by environmentalists, politicians, musicians, and actors. The text argues for the protection of Walden Pond and Walden Woods, but Walden Woods is also employed as a foundation for authors to discuss contemporary environmental concerns, and the need for environmental management and protection – be it restoration, conservation, or preservation.

Both the Walden Woods Project and the Eden Project have produced DVDs outlining their development – *Castles In The Air* (WWP 2003) and *Eden: The*

[64] The Eden Project also has a publishing company – Eden Project Books – through Transworld Publishers (a division of The Random House Group Ltd), which allows it to publish texts it considers important to furthering environmental awareness and concern.

Complete Inside Story (Eden Project 2006a) – which in turn portray a particular construction of the landscape and approach to tackling environmental issues. The focus throughout is very much landscape-driven, employing the physical environment to explore the evolution of the projects.

Moreover, each of the case study projects produces newsletters – *Notes From Walden Woods*, *Eden Friends* magazine, and *Forest Scene*. The Walden Woods Project produces an annual newsletter, with a focus predominantly upon protection, that of land acquisitions and conservation (and restoration) efforts within the Woods; and seminars and conferences hosted onsite. Both the Eden Project and the National Forest Company produce quarterly newsletters, which address not only onsite exhibits and activities, but report on the status of various partnership projects. Information is also disseminated through the project websites – particularly press releases and electronic newsletters; and the WWP also offers the *Thoreau Update* (an e-newsletter from the Thoreau Institute Library). Advertising is undertaken to differing degrees by the projects. When reporting on restoration practices, restoration is described in universal terms of recovery and repair (echoing SER International 2004), and rarely to the detail of the discourses represented in the typology, to accommodate a general, rather than specialist, audience.

The efforts of the projects are also reported in the media, but primarily in print format – through regional newspapers (and, on occasion, national newspapers). As examples, both the *Concord Journal* and *The Boston Globe* have reported on Walden Woods Project issues – particularly those which threaten (the integrity of) Walden Woods. The CCHS playing fields debate dominated the period of this research, alongside the Route 2 pedestrian and wildlife overpass. Additional issues include efforts to find an alternative site for affordable housing[65], and fundraising events; and during the 1980s and 1990s, the efforts of the Thoreau Country Conservation Alliance and Walden Forever Wild. The *Western Morning News* is a major (regional) commentator on Eden Project developments, such as its plan for the Edge. Although much that is reported on the Eden Project relates to its socio-economic contribution, recent subjects relating to a restoration framework have included the Core garden, and the Global Garden; and to commemorate the opening of the site in 2001, a souvenir

[65] The proposed Concord Commons Apartment Complex (on Bear Garden Hill) was to include a proportion of moderate income housing within the site. The Walden Woods Project is thus committed to finding an alternative site for the affordable housing as a stipulation of its purchase of the site.

supplement (Western Morning News 2001)[66]. The *Leicester Mercury* reports on the efforts of the National Forest Company – with a particular focus on the Tender Scheme (both the successful sites and issues of funding), and tree planting events such as Plant a Tree or Business Benefit. As with the Eden Project, however, much of the focus is on the socio-economic impacts of the Forest.

Despite the attention awarded to the projects, there exists a difficulty in achieving media uptake of issues, as exemplified in the following statement: "Because it was never a news story; it was always a conservation story. Unless something had died, they weren't interested" (SC, Eden Project Interview 3). A similar situation is recorded in Harrison and Burgess (1994:302), with a somewhat tongue-in-cheek acknowledgement that: 'What we need is a dolphin', in order for the conservation of Rainham Marshes to appeal to both the media and the general public. As other studies have noted, interest in environmental issues is in effect only sparked by the dramatic, and especially events concerning and affecting 'charismatic megafauna'.

Informal Knowledge Transfer

There is also a degree of informal knowledge transfer, evident primarily through onsite interpretation (Figure 7.5). Thoreau's Path on Brister's Hill is designed as an interpretive trail, where the quotes incised on the granite installations connect to their specific location, and are to be discovered and reflected upon (PL, Sasaki Interview) (also in Figure 5.6 and VFT Figure 1.2). To take the Eden Project as another example, (interactive) art-led installations[67] and personal interaction (performance, story-telling, or guided talks) are favoured over video screens and text-based boards (Whitbread-Abrutat 2006). At Eden, much of the information is relayed through stories: "One of the best methods of communicating is through storytelling. [...] communicating messages in a way that you can remember. [...] So you feel personally connected, and then they take you on this journey. [...] So we made Eden – the 'theatre of plants and people' – the story" (ED/SC, Eden Project Interview 6). The Eden Project's approach to onsite interpretation and public education complements its capacity to collaborate

[66] The Eden Project was also the subject of a short BBC2 documentary in 2006, exploring how wildlife was using the site, entitled *Robins Of Eden*; and in 2007, featured in ITV1's *The People's £50 Million Lottery Giveaway* with its proposal for the Edge.

[67] The Mechanical Theatre is a new automata exhibit at Eden, which so far has addressed issues such as genetic modification, plants and health, and intellectual property rights issues (such as patenting).

with other organisations – it "is integral to Eden's ethos of encouraging artists, scientists, engineers, horticulturalists, designers and accessibility experts to collaborate" (Whitbread-Abrutat 2006:7).

Figure 7.5 | Examples of onsite interpretation; top row: Walden Woods Project – Thoreau's Path on Brister's Hill, centre row: Eden Project – The Garden, the Mediterranean Basin (WTB), the Dionysus exhibit (representing the personification of nature in its 'wild' state) (WTB), West Africa (HTB), bottom row: Conkers Discovery Centre and Conkers Waterside – Wildflower Glade, Coal Tip, Bath Yard former spoil tip.

Connections with colleagues elsewhere are another example of informal knowledge transfer, with one respondent (LM/SC, WWP Interview 1) noting "I think there are strong personal relationships, and that really helps improve sort of the organisational effort". Knowledge is further disseminated simply through word-of-mouth, leaflets, and, with particular regard to the Walden Woods Project, Internet lists and advertisements in journals. Yet regardless of the processes involved in knowledge transfer and dissemination, there exist implications for practitioners and policy-makers alike: "People won't believe you if you don't act in the way that you communicate" (ED/SC, Eden Project Interview 6).

7.3.3 The Politics of Restored Space: Symbols, Icons, and the 'Unique'

Sites of environmental restoration are context-embedded, and as such, no two will ever be the same. This is perhaps all the more apparent when efforts within the sites are considered one-of-a-kind, or at the very least, unusual. Were restoration efforts a unique endeavour, this kind of contextual argument would rekindle debates surrounding the traditional 'idiographic approach' to social science knowledge (Johnston *et al* 2000). Restoration efforts are not best understood as substantially unique, for it impedes the transfer and dissemination of knowledge and ideas. Through the deliberate selection of distinctive case studies, this analysis has identified the convergence of, and disparities between, different restoration discourses, and thus the prioritisation (and downplaying) of particular themes. Claims of uniqueness nevertheless remain, for there is a desire, on the part of project managers and staff, to use restoration to highlight the diversity and multiplicity of issues addressed, and to produce spectacles or novelties. Echoed by project actors across the sites, but formalised by a NFC representative (LM, NFC Interview 5) is a claim of having 'peers but no equals'.

Of the Eden Project, there is an acknowledgement that it is 'meant to be a unique project. It is not a product' (LA, LUC Interview). Eden remains, for project representatives, 'pretty much a unique blend and take on the whole issue' (ED/SC, Eden Project Interview 1), as "There are other projects which are doing things that are just as good, but I haven't seen another like this one" (ED/SC, Eden Project Interview 6). The notion of 'international ambition' and of connecting with different countries is also considered to set Eden apart from other projects. A claim to uniqueness could therefore become a source of power in wider environmental debates. Not only does a label of 'unique' set a project apart from the rest, but in many cases it positions the project as a leader on particular issues, with an associated degree of control. In providing a 'fresh take' on ideas, many are interested in what such 'unique' projects have to say. As evidence of such power (and as mentioned in the previous Section 7.3), the Eden Project is involved in many international collaborations, and hosts and provides the backdrop to many national and international conferences.

Within the context of the National Forest, a NFC representative (LM, NFC Interview 5) observes, "There are projects that are a similar size in terms of area. There are projects that seek to achieve similar goals to the Forest. But there are no

forest projects anywhere in the UK that combine both, *and* can back it up with demonstrable land use change". This is complemented by another NFC representative (C, NFC Interview 9) who notes, "I think there are other people who are doing just some things similar, but their structure and approach is not the same as us. Nobody has quite the same focus. [...] Because there is only one National Forest". This is formally reinforced by the NFC (2007a:2) itself – the Forest is a unique case study, "given its scale and its aspiration to reflect and lead the integration of social, environmental and economic policy drivers". However, there is a recognition that elements of National Forest Company operations are being replicated elsewhere (FI, NFC Interview 8).

A similar situation is evident within the Walden Woods Project, summed up in the statements: "I don't think what we've done can be duplicated everywhere" (PM, WWP Interview 4); and "I cannot think of any of the programmes that we do that I can honestly say are being done exactly the same way elsewhere. [...] It's kind of the marriage of the land and the literature and the legacy. We're in the midst of the place that is so iconic" (M, WWP Interview 5). Not only does the historical and geographical context set it apart from other organisations, but also the level of public participation from its inception onwards – the latter point comparable with the NFC.

Very different claims to uniqueness are being made across the case study projects. The implications for policy creation, dissemination, and uptake are such that there exists an embeddedness and dis-embeddedness of restoration discourses and practices, and project representatives utilise both at different times and contexts. Yet as one respondent (ED, WWP Interview 3) argues, "It depends on how you define our mission". Despite the 'unique' status awarded to the projects, parallels can also be drawn with other projects, supporting the potential for policy dissemination.

For the Eden Project, comparisons can be drawn with the environmental approach advanced by other organisations in two respects. The first concerns actual links and lesson-drawing, to include the Centre for Alternative Technology in Machynlleth, Wales; the Lost Gardens of Heligan; and the Royal Botanic Gardens, Kew. As argued by one Eden representative (ED/SC, Eden Project Interview 1), "Heligan for example is very complimentary, [...and] more recently, places like Kew have used a lot more of the same style of approach [as Eden] compared to what they would have done, say five years ago". The second encompasses common driving

factors, although not necessarily involving cross-communication. Subtle similarities emerge between Eden and other projects once one begins to compartmentalise Eden's operations – in terms of horticultural practices; food provision and local sourcing; retail; the winter ice rink (compare to Kew and Hampton Court); and as a venue for performances – although in all these cases, there is a distinctive Eden edge to their interpretation (a claim evidenced in Eden Project 2006b), with a continuous effort to integrate and reinforce the Project's mission. Even though the following claim is set within the context of public education and onsite interpretation, it remains equally true of the restoration discourses applied to the site, that "it *was* more unique than it is now, because we've had a lot of people learning from us – which is a good thing" (SC, Eden Project Interview 2). Post-mining regeneration and rehabilitation discourses are interchangeable with, and subsumed under, wider restoration discourses, evident in the actions undertaken by Imerys across the claylands of Cornwall.

The Walden Woods Project has drawn on the experiences of Walden Forever Wild and the Thoreau Country Conservation Alliance; with comparisons also made with the Nature Conservancy (based on land preservation efforts), Friends of Radnor Lake, Tennessee (which takes inspiration from Henry David Thoreau and Aldo Leopold to protect and promote the natural integrity of the Lake through land acquisition and environmental education), the Caddo Lake Institute, Texas (as with the Walden Woods Project, spearheaded by Don Henley), and the Sand County Foundation, Wisconsin (highlighting further connections between nature writing and the land, through Leopold).

In addition, the Walden Woods Project has a 'unique way to attract attention and raise money that most groups don't have' (PM, WWP Interview 4), through its connection with Don Henley. The use of personal attachments, to the living or the dead, is a widespread strategy for establishing a discourse of uniqueness and non-replicability, yet this could problematise the act of creation in restoration. As a further example, CPRE (1999) produced an anti-quarrying leaflet pushing the literary associations of different landscapes. However, restoration requires an element of replicability for it to be mobilised within numerous landscape contexts.

The significance of the Library at the Thoreau Institute is also considered, due to the dearth of libraries devoted to a single author – with other examples including the John F Kennedy Presidential Library and Museum in Boston, Hemingway's

Library within the JFK Library, and the Folger Shakespeare Library in Washington, DC. As one WWP respondent (PM, WWP Interview 4) notes of the Thoreau Institute Library, "I do think we're really unique in that we're not only dedicated to the person, but we're right in the *place* where he lived and wrote and formulated a lot of these ideas and philosophies. And I really don't know of anywhere else that can make that claim". Claims to uniqueness in this instance are mobilised through both literature and geography, to the effect that the sum is greater than the parts.

The National Forest emerged alongside the Community Forests, and parallels can be drawn with the South West Forest and the Central Scotland Forest. As one NFC respondent (PL/LM, NFC Interview 4) notes, though, "What the majority of those projects lack is the sort of dedicated approach that the National Forest Company has been able to take, by being relatively independent, and relatively well-funded, and having a particular set of incentives that allow it to engage effectively with landowners". More importantly though, and setting the NFC apart from these organisations, is that the NFC has had a much more dedicated (and sustained) approach to environmental restoration. This is evident through the prominence of restoration within the 'Mineral Workings, Landfill Sites and Derelict Land' chapter of the Forest Strategy (NFC 2004b) – which is in turn reflected in restorative actions on the ground. Similarities also exist with the National Parks, particularly in terms of Park boundaries extending across different counties, and the subsequent politics involved (LM, NFC Interview 7). Furthermore, an interesting dualism emerges in the use of the term 'national'. While the UK has one *National Forest*, created as an exemplar, in North America, there are, in title, nearly 150 *United States National Forests* – a recognised designation to protect forest and woodland areas in North America.

There is a value attached to places which are able to claim 'uniqueness', and it is a value grounded in power and authority. There is nowhere else exactly like the Eden Project, the National Forest Company, or the Walden Woods Project, and as such, these projects have a (captive) audience, an audience who consults them for information, ideas, and even guidance and leadership. While the projects may not necessarily be leaders in the field of environmental restoration, they do possess knowledge that is not available or obtainable elsewhere. In many respects, these are projects which have trialled and put forward new approaches and new thinking on

restoration (and indeed other environmental and socio-economic) issues, to raise awareness of existing issues and open up new possibilities. Such projects open the floodgates in raising awareness of particular issues, and instil in other projects the challenge of taking forward, and in different directions, other environmental challenges. Equally, a 'unique' restoration project serves as a benchmark, and instils in others attempts to copy and replicate ideas.

It is important to recognise that the language used by project actors, while perhaps emotive – and symbolic – is no less appropriate (or apposite) in application and use. Of course, it is such a recognition that inherently causes problems, and if unresolved, can further muddy the waters of restoration debates, for it adds an emotional and thus highly subjective perspective to restoration discourses. For many project actors involved in restoration practices, the driver for such actions is often couched in emotive language that might include such phrases as an 'environmental jewel' (LA, WPBOD Interview), or 'sacred' (PL, DCR Interview), with the National Park Service (2002:14) noting of Thoreau's influence at Walden: "the unremarkable backcountry has been transformed into a mosaic sacred to many". Respondents also refer to Walden Pond as having 'the Holy Grail' (LM, WPSR Interview 2; PL, Sasaki Interview), where Walden Pond and Walden Woods 'were hallowed ground' (PL, Sasaki Interview). Such terms, while unquestionably descriptive, can through their emotive content frequently distort the base political agenda through which policy decisions are required for any such restoration to occur. A further example of this is evidenced in social and cultural attachments to a landscape, and a subsequent 'sense of identity', as realised across both the National Forest and Walden Woods.

So often, to convince decision-makers – whether policy-makers or funding bodies – the most pronounced driver, and indeed battle, is arguing that the land in question should be restored and managed in perpetuity as a site of landscape value. It is this issue that once again returns to vital and frequently emotive terminology where a given tract of land (regardless of its surface area) becomes iconic. Such a landscape, if restored and managed to the desired state, can through its very presence become a 'badge' (LM, FC Interview 1) or an 'emblem' (ED/SC, Eden Project Interview 4; LM, WWP Interview 6) of the possible. Indeed, for some, it takes on the quality of being a symbol of identity – highlighted in one respondent's belief that the Walden Woods

Project has strengthened Concord's identity as an environmental steward (PM, EWA Interview). Restored landscapes may also illustrate 'the art of the possible' (PM, Landlife Interview), through ambition.

Restored landscapes are seen as embodying and mobilising virtues of hope and aspiration; inspiration; common sense; sustainability; longevity; wellbeing; and change and improvement (ED/SC, Eden Project Interview 4). Stories of hope and redemption are very powerful culturally, and the restoration practices analysed herein appear to play into this. In light of the weighting awarded to redemptive discourses in this research, one can dispute on two counts the claim put forward by Bartram and Shobrook (2000:377-378) that "the paradox of proximity to nature is that it only confirms its irrevocable loss and that environmental conservation is no more than an illusionary act of social redemption". First, restoration (and indeed conservation) practices are not 'illusionary acts' or token gestures, for they reconnect society with nature, and at the same time bring about positive landscape change. Second, an 'irrevocable loss' implies that nature is external to society, 'unmodified by human activity' (Elliot 1997, 1982) – which might itself be illogical from a social nature perspective – and that it decreases in naturalness (and value) through societal intervention. The point has been made throughout this thesis that through participation and engagement in restoration practices, society can also work to protect environmental values that may otherwise be lost. That is not to say, however, that redemption "implies that human action can compensate for a prior human misdeed" (Higgs 1997:342). Here, redemption is not as justification for damage, but as an attempt to reverse and repair such damage, and reconnect society with the environment. Redemption is used to rationalise practices. The question though, is *what does restored nature redeem?* Society, through restoration, is both (i) acting for nature, to improve the environmental condition, and (ii) seeking redemption for prior degradation and devastation.

Furthermore, such work inherently leads to the question of the importance of symbols and 'the symbolic'. This is played out within the context of Eden:

> Its symbolic status is vital. Vital for Cornwall in that it repositioned the way Cornwall was perceived from outside (previously it had been regarded as a throwback to 1950s bucket-and-spade-type holiday destinations). Now it is viewed as modern, hip and environmentally cutting-edge and as a consequence many new design and new technology companies have moved

> here and the service industries of accommodation, catering etc. have upgraded accordingly. For the environment movement the symbolism has also been significant because Eden represents a highly sophisticated and successful ethically-driven social enterprise demonstrating that those with our interests are capable of operating at the highest level of delivery and not just being polemical from the side-lines.
>
> (M, Eden Project Interview 9)

Similarly, the National Forest is promoted as a national exemplar, and a demonstration site (a test case, even), for sustainable, multi-purpose forestry. Speaking in relation to the Walden Woods Project, one respondent (ED, WWP Interview 3) notes, "I think in some ways it might be symbolic in that we represent what people can do when they set their minds on fixing something or saving something". This is further qualified by another WWP representative thus, "We're not looking for land that's necessarily in pristine shape. What we're talking about is helping to rehabilitate land to a state where it can be protected. And I think that's something that is really kind of special and inspiring in its own way" (ED, WWP Interview 2), again feeding into the theme of redemption. However, while a symbol can be a powerful medium to address issues, it may not be materially accurate, for as Seib (2002 in Maynard 2005:271) argues, "finding Thoreau's Walden is much more difficult than just going to his pond".

True of all the projects is the statement made by one respondent (LA, LUC Interview), that "Just the fact that it has happened is influential". Clearly, environmental restoration practices which showcase success in selling ideas, and which convince others that such actions (or perhaps policies) are of importance, also contribute to wider beliefs of optimism and possibility in environmental improvement. It is perhaps this that provides a baseline for so many who wish to instigate change in a landscape, and influence those who prescribe such change through policy. Despite the symbolism attached to the operations of the projects and their landscapes, there will be different readings applied – some will be potent, others weak, but all will impact upon perceptions of 'restored space'. Different readings have highlighted, and drawn attention to, society 'working' with nature to restore and 'recreate' nature, and to restoration as a redemptive practice; pointing to the politics and power intrinsic to restoration discourses.

7.4 Conclusions

Throughout this chapter, discourses of environmental restoration have been discussed and analysed through wider practitioner and policy concerns. This has aided in identifying not only those arenas where such discourses are powerful and influential, but also the degree and intensity of information exchange and knowledge transfer which occurs through collaborations and wider networks.

Analysis of the scalar interactions and networks that revolve around restoration practices has revealed the power and authority of particular restoration discourses. The case study projects are influential in local, national and international arenas, and restoration discourses filter into and inform multiple debates, especially conservation, sustainability, forestry, planning and regulation, and socio-economic development. Furthermore, the analysis has addressed the embedding and dis-embedding of restoration discourses, to provide insight into how rationalisations of restoration can be modified from the specific and localised to the more general, and thus which themes survive this process. The key themes and rationales within restoration discourses are further reinforced and promoted through approaches to knowledge transfer and dissemination. The dominance of particular restoration discourses has been explored both from the 'outside looking in' (through external influences guiding the case study projects and thus their rationalisations of 'restoration') and from the 'inside looking out' (through the roles, presence and status of the projects in planning and policy documents, and in wider arenas and debates).

A key finding to emerge from the analysis suggests that the presence of mutable discourses and rationales translates into a degree of political purchase, and thus moral authority, which is applied to (and attached to) restoration practices. As mentioned elsewhere in this thesis, discourses are a mechanism through which particular claims can be made; and due to the fluidity and instability of definition in restoration discourses, power and authority are bound up in an ability to justify and rationalise such claims. In some respects, then, the echo is more important than the initial message. There also exists an emotional weighting to ideas of redemption within restoration discourses.

In the following, concluding chapter, the analytic findings and interpretation from this and the previous two chapters are synthesised, as a response to the research

questions proposed in Chapter One. Leading on from this, the chapter concludes with a discussion of new research agendas, reflective of, and extending, the ideas and thinking put forward thus far in this thesis.

CHAPTER EIGHT

Revisiting the Shifting Sands: A Summary of Results and Conclusions

8.1 Introduction

A reflection of the contemporary climate of environmental degradation, discourses of environmental restoration are often advocated and advanced as one of the fundamental solutions to problems facing landscape systems. As explored throughout this thesis, however, there exist multiple and competing 'natures' of environmental restoration, which serve to reinforce the metaphorical bed of quicksand that, at the very least, is complicating definitional debates. It is such a lack of fixed definitions that makes the issue interesting and critical to this research. This thesis is concerned with examining and understanding the dominance of particular discourses of environmental restoration – and thus what is excluded from, and included in, such discourses – to deduce what elements of restoration are promoted (and why), and the implications for the environment. The research strives to determine the content of environmental restoration discourses, how they are shaped, and their propensity to change.

I deliberately chose three rather different manifestations of environmental restoration practice, and so while finding different 'discourses' is an insufficient claim, the importance of this research rests with the causal mechanisms that can be abstracted from these cases (after Mitchell 1983) and which might be more widely applicable (such as the way proponents mobilise discourses of restoration). Taking

this latter point forward, the research has made significant contributions to academic understandings of environmental restoration in relation to the following three themes: (i) typologies of dominant (and dormant) restoration discourses; (ii) 'geographies' of environmental restoration; and (iii) the construction of restoration as an act of redemption. As such, the greater part of this chapter provides further interpretation and discussion of these ideas, and through that, answers the research questions, addressing some of the gaps present within the literature. The concluding section puts forward new research agendas revealed within this thesis.

8.2 The Intricacies of Environmental Restoration

8.2.1 Typologies of Restoration

Within this thesis I have contributed to debates on the 'natures' of environmental restoration that have simmered in geography and other disciplines in recent decades. I have generated some useful insights for this debate through drawing awareness to how (and indeed why) particular discourses of environmental restoration come to be prioritised over others, and the wider environmental implications of such actions. Of particular interest are the claims and, in some instances, tensions, bound up within such terminology. At present, environmental restoration appears almost as a 'jack of all trades, a master of none', accentuated by its holistic ideals (see Clewell and Aronson 2007). The problem lies largely in practitioner usage, with the (perceived) most appropriate terminology employed to meet the agenda in question, and to invoke particular ideals. This reflects the non-neutral nature of language choice in restoration decisions. With terminology a reflection of wider contexts, there is also a complication of variation in terminology within and across local, national and international discourses.

The Contextual Framing of Restoration Discourses

This research has identified and spotlighted five inter-related themes which dominate the conceptualisation of environmental restoration discourses: (i) replication (and return); (ii) reparation; (iii) the removal of anthropogenic influences; (iv) the restoration of natural capital; and (v) sustainability. These particular meanings of restoration can be defined conceptually, as in Table 8.1; their use varied across the

case study sites. The research has contributed a new focus to the investigation of environmental restoration, for it couples the analysis of language and discourse with the materiality of restored spaces. Such an approach makes explicit the links between rationales and practices, examining (i) how rationales reflect practices (and with what justifications and consequences), and within that, (ii), the particular elements of environmental restoration discourses which are relayed as action on the ground, as well as those absent from the discourses. What emerges is a widened recognition that environmental restoration is grounded in, but not restricted by, discourses of landscape integrity, compatibility and appropriateness, promoting functionality, but also morality and duty.

Emphasis on Construction of Restoration as...	*Example Definition and Purpose*	*Prioritised within...*	*Evidence*
Replication (and return)	• To 'keep it like it was'. • To return the environment to its 'original' condition.	• WWP	• Particularly reference to 'the Walden of Emerson and Thoreau' at Walden Pond and Woods.
	• To remove invasive species.	• WWP	• Particularly the view of the WWP, as at the Sudbury Road site in Concord.
Reparation	• To repair damage, and replace or renew ecological structure and function.	• All three projects	• Former mineral operations across the National Forest; the landscaping of the Concord landfill, and the creation of Thoreau's Path on Brister's Hill within Walden Woods; and site stabilisation and revegetation at Eden.
* Interchangeable with: → ***Rehabilitation***	• To improve the health and integrity of the environment	• All three projects	• Although not stated as such, the idea is evident at the Eden Project, the National Forest Company, and the Walden Woods Project.
→ Natural ***regeneration*** by 'the natural'	• To allow natural processes of regeneration and succession to dominate.	• WWP	• Thoreau's Path on Brister's Hill; to a lesser extent, Wild Cornwall at Eden.
Restoring natural capital	• To replenish ecosystem goods and services.	• NFC	• Plant A Tree and Business Benefit opportunities, and the Changing Landscapes Scheme, within the National Forest.
		• All three projects	• Across Eden, the NFC and the WWP, to the extent of bolstering global natural capital stocks, although not explicitly stated.

Promoting sustainability	• To improve environmental, social and economic quality. • To manage the environment sustainably.	• Eden/NFC	• The operations of the Eden Project and National Forest sites.
* Interchangeable with: → Social ***regeneration*** by 'the social' and 'the natural'	• To contribute to socio-economic regeneration.	• Eden/NFC	• The operations of the Eden Project and National Forest sites.
Removing anthropogenic influences	• To reverse and counter negative human interventions in the landscape.	• WWP	• Walden Pond shoreline restoration; to some degree the Concord landfill and Brister's Hill.

Table 8.1 | Typologies of dominant environmental restoration discourses, and evidence of their mobilisation across the Eden Project, National Forest Company, and Walden Woods Project sites.

Refocusing the findings of Table 8.1, Table 8.2 below presents the dominant (and dormant) discourses of environmental restoration as framed by project actor groups.

Dominant / Prioritised Discourse(s) of Restoration	*Breakdown by Project Actor Groups*									
	C[1]	*ED*[2]	*FI*[3]	*H*[4]	*LA*[5]	*LM*[6]	*M*[7]	*PL*[8]	*PM*[9]	*SC*[10]
Replication				✓	✓		✓	✓*	✓	
→ *Return*	✓	✓		✓*	✓*	✓	✓	✓	✓	✓*
Reparation	✓	✓	✓		✓	✓*	✓		✓	✓
* Interchangeable with:										
→ *Rehabilitation*		✓		✓	✓	✓	✓	✓	✓	✓
→ Natural *regeneration* by 'the natural'	✓		✓	✓	✓	✓*	✓	✓	✓	✓
Restoring natural capital					✓	✓		✓		✓
Promoting sustainability		✓*				✓*	✓*	✓*	✓	✓
* Interchangeable with:										
→ Social *regeneration* by 'the social' and 'the natural'	✓	✓*	✓*		✓	✓*	✓*	✓	✓	✓
Removing anthropogenic influences					✓		✓			✓

[1] Community Development
[2] Education
[3] Finance
[4] History
[5] Landscape Architecture
[6] Land Management
[7] Senior Management
[8] Planning
[9] Project Management
[10] Science

* The highlighted cells represent dominant discourses of environmental restoration as framed by project actors. Note: ✓* is used to emphasise prioritised themes within the dominant discourses; the gradation of ✓ and ✓ illustrate progressively weaker discourses of restoration.

Table 8.2 | Prioritisation of particular restoration discourses by project actor groups.

As illustrated in Table 8.2, restoration discourses which prioritise ideas of *sustainability*, *replication* (and particularly *return*), and *reparation* are the most dominant amongst project actors. The broadest reading of environmental restoration is put forward by those project actors working in landscape architecture and science fields, drawing upon all five restoration typologies (followed by those in land management and planning). In contrast, those working in the field of history present a narrow reading of restoration (emphasising discourses of replication and return, and repair). The construction of dominant restoration discourses is a wider reflection of project actor backgrounds, with explicitly environment-focused discourses (replication, repair, and natural regeneration) aligned with those actively involved in landscape change (landscape architects, land managers, planners and scientists). Equally, those restoration discourses which incorporate a social element (such as sustainability and social regeneration) overlay onto professions with a similar drive (education, finance, land management, senior management, and planning). Similarities across the project actor groups are due in part to cross-over between groups.

Subsumed within the fivefold restoration typology are discourses promoting *regeneration* and *rehabilitation*, which provide an alternative framing to *restoration*, as well as highlighting a cross-contamination of terminology. (To a lesser extent, discourses of reclamation, recreation, mitigation, ecological engineering and re-commissioning assume a similar role.) Regeneration discourses have a dual meaning in a restoration framework, taking forward not only *regeneration of 'the natural' by 'the natural'* (drawing upon processes of natural regeneration and succession, and thus limited human intervention and manipulation), but also *regeneration of 'the social' by 'the social' and 'the natural'* (grounded in socio-economic development discourses; a stimulus and catalyst for socio-economic regeneration (see Kitchen *et al* 2006)). As such, discourses of *natural regeneration* are subsumed in, and interchangeable with, wider discourses of *repair*, while *social regeneration* discourses feature in wider *sustainability* discourses. Discourses of environmental *rehabilitation* are conspicuous by their absence within the case studies, but promote the reinstallation and recovery of ecosystem goods and services, improving the physical and chemical infrastructure of the environment. Rehabilitation discourses (as with natural regeneration discourses) are thus synonymous with those restoration discourses prioritising *repair*.

There are subtle differences between these discourses, but all share a common goal of improving the environmental condition through the (re-)introduction of flora (and fauna) onto damaged and degraded sites. Claims about both the differences and the commonalities are highly relevant, for they indicate where value lies in (restored) nature, and how best to sustain and perpetuate that value. The discourses are not mutually exclusive, but often many are applied to the same context, with their definitions and practices employed interchangeably. Alternative terminology may be advanced to avoid contestation or criticism, in light of the detrimental portrayal of restoration (on the grounds of manipulation and intervention) within debates on environmental ethics (particularly those of Elliot 1997, 1982; and Katz 1992). Philosophical arguments thus cast a shadow over, and shape restoration discourses.

What must be avoided is the moulding of 'environmental restoration' as an umbrella term under which several environmental issues shelter. Classifying a set of issues under a generic title may prevent the individual investigation of such issues, but more than that, it may reduce interest in those issues, and thus introduce further difficulties for environmental planning, policy or management. The reverse may also be a concern – that restoration be located as a subset of additional environmental management rationales (such as that of regeneration). If such a situation is allowed to develop, it can in turn be argued that perhaps environmental *restoration* is not a useful concept, and instead concepts such as *representation*, *reinvention*, *reparation*, and *re-expression* should be employed, for they capture better the physical action of intervention and change in the landscape, and the physical outcome. The argument could be made that *restoration* is simply a convenient metaphor, or worse, a concept which has been misdiagnosed, thus jeopardising the perceived success of any efforts undertaken under this label. After all, although 'restoration' has become a naturalistic metaphor, it is not usually applied to natural things; it is only contextually environmental. Restoration discourses are more generally associated with furniture and artwork, and the built environment, (and are framed in terms of restoring order, or monarchies), but assume an environmental mantle through their transferability and applicability to tackling environmental issues. Restoration requires a prefix to serve as a determinant of its intent – in this instance, the prefix 'environmental' – and thus is shaped and moulded by wider features and factors, impacting on understandings of 'nature', 'landscape' and 'restoration'.

One of the research questions asked, *in what contexts are particular discourses of environmental restoration employed in practice, and with what justifications and consequences?* The research has provided new empirical evidence as to how and why discourses are constructed (and promoted) in particular ways (see especially Hajer 1995). Both the National Forest Company and the Walden Woods Project are working towards restoring the structural and functional condition (a theme echoed in Pfadenhauer 2001), while the Eden Project is creating an entirely new ecosystem which never before existed on its site (as explored by Light and Higgs 1996; Turner 1994). Although largely grounded in functionality, discourses of environmental restoration are also informed by rhetoric and persuasion.

Within the context of the Eden Project, restoration discourses are manifested in two distinct ways. The first, drawing upon horticultural and gardening practices (echoing Hall 2005; Jordan 2003; Turner 1985), sees restoration constructed as *repair*, applied to the site stabilisation and the revegetation of quarry slopes, making it a prime example of Higgs' (2003) idea of 'nature by design'. Ideas grounded in Eden's *Waste Neutral* programme can be overlaid onto the restoration of the site, for the Eden Project has reused and reinvested materials to bring about the restoration – as evident in the integration of spoil into the earthworks and development, and the soil creation. Second, is the more dominant and prolific construction of restoration discourses as promoting *social regeneration* (by 'the natural' and 'the social'), and particularly *sustainability*, for the latter draws upon and combines environmental, social and economic issues – themes integral to the Eden Project. Serving a similar purpose, discourses of reclamation and transformation are also applied to the site, to emphasise the social dimension.

Although the National Forest Company and the Eden Project advance the same dominant discourses of environmental restoration, the NFC does so in a much less dichotomous way. Extolling *social regeneration* and *sustainability*, restoration practices within the Forest boundary contribute to socio-economic development, with restoration one approach to advancing the three themes of sustainable development. Tied with this, restoration practices also take forward the *restoration of natural capital* (and also discourses of *repair*) – replenishing and repairing ecosystem goods and services to aid in Forest creation and the production of woodland products (aligned with Aronson *et al* 2007a and Daly and Farley 2004, amongst others).

Discourses of environmental restoration are defined by land use, and the quality of the land; and are applied to mineral workings (a contrast to the Eden Project, where regeneration discourses dominate), derelict land, and landfill, alongside historic landscapes, and built heritage features.

The Walden Woods Project presents multiple manifestations of restoration discourses, promoting the *repair* of the landscape (as at the NFC), and to a lesser degree, discourses of *replication* and particularly *return* to a previous condition (to emulate 'the Walden of Emerson and Thoreau'), incorporating the *removal of invasive species*, and the *removal of anthropogenic influences*. As in the National Forest, restoration discourses within Walden Woods are applied to both historic landscapes and landfill sites. These discourses are grounded in conservation and preservation philosophies (echoed in the WWP mission statement), even though the two concepts have a history of tension between them (see especially Kane 1994; Hall 2005; Katz 1998). Restoration practices also provide a medium through which to create a demonstration site for succession (as at Brister's Hill). Themes of native progeny and local provenance are evident within Walden Woods (and the National Forest), and all three case studies support and supplement *natural regeneration* discourses, enhancing and maintaining biodiversity.

A commonality shared by all three case study projects is the loose framing of restoration discourses and practices under the mantle of *restoring natural capital*, but this concept has a dual interpretation. Whereas the National Forest Company mobilises RNC discourses to promote the production of ecosystem goods and services to support socio-economic wellbeing (after Aronson *et al* 2007a), the Eden Project and the Walden Woods Project instead frame RNC as 're-greening', through replenishing the stock of natural capital (thus removing the social driver).

Discourses are both reflective of changes in restoration practice, and can be the driving force behind changes in such practice. Through favouring specific aspects of restoration discourses, such as those identified in Table 8.1, certain meanings and values attached to a landscape are realised (and rationalised). Equally interesting, however, are the claims which restoration is *not* making, such as restoration asserting *superiority* over nature (domination and control); as *legitimation* (justification for damage); and as *fraud* (faking nature). On this latter point, the research suggests that restoration is not read as 'faking nature' (counter Elliot 1997, 1982), but rather as

introducing degrees of naturalness back to the tract of land in question. Similarly, seeing restored nature as an artifact is not a cause for concern; instead, such a claim reaffirms a positive society-nature relationship (as Ladkin 2005; Light 2000; yet counter Katz 1992). Furthermore, discourses of environmental restoration across the case studies are not seen as promoting the *commodification and production of nature for economic gain* (as argued in Castree 2001; Robertson 2000; Harvey 1996; Smith 1990) – although one could cynically argue this of the Eden Project. However, a limitation of discourse analysis is whether it could ever reveal 'commodification', which comes from a different, Marxist critical condition which might look askance on whether underlying social relations are revealed by discourses. Revealed through the fivefold typology is the construction of restoration as a 'good act' rather than a 'bad act', but such a claim may in part also be a reflection of the research methodology, which focused on the views and perspectives of restoration *proponents*.

Of further interest is the unexpected *in*significance of the issue of naturalness. Restoration efforts are not restoring back to an 'original' or 'natural' condition; instead, semi-natural (indeed, socio-natural) landscapes are promoted. Philosophical arguments about the innate replicability of 'nature' exert relatively little leverage over what happens on the ground, at least amongst the 'producers' of restored nature. Project actors are not exercised by the issue of nature and naturalness, nor are they under pressure to be. The fact that this issue, so dominant in philosophical and other academic writing, is not claimed within the case studies contributes a key finding towards this research. By the same token, what it does suggest is a need to refocus attention away from the dominant question of naturalness within restoration discourses, to interrogate those claims which are actually being made, in more fluid contexts. Such claims centre upon concerns of integrity and appropriateness, compatibility, functionality, connectivity, and futurity.

Being able to control and adjust the representation of restoration actions has aided the development of the Eden Project, the National Forest Company, and the Walden Woods Project; it has not caused problems for proponents. It can also be argued, however, that the mutability of language makes it difficult to formulate any challenges to the practices involved, and allows practitioners to control the relationship between past, present and future landscapes (echoing Hall's (2005) claim that switching 'myths' allows one to justify different ways of restoring nature). With

no right or wrong answer with regards to terminology, (justifiable) restoration practices can mould multiple manifestations of (restored) nature. Moreover, the academic sphere is not beyond reproach, with inconsistencies emerging as to what constitutes 'environmental restoration' (as identified in Clewell and Aronson 2007, amongst others). Despite an extensive restoration vocabulary, connections exist between the interpretation and mobilisation of the discourses, but these are not universal across restoration schemes (compare with Hall 2005). Instead, the theoretical foundation of environmental restoration is viewed as suggestive, to be modified in practice within differing contexts. No single reading of environmental restoration takes precedence, instead, each serves to guide and inform the direction of a particular restoration scheme, ensuring a more strategic approach than simply being 'fit for purpose'; one designed to *persuade* (or even *reassure*) within particular arenas.

Although the outcome of restoration schemes may vary, for restoring in order to *repair* will produce a different landscape to one restored in order to *replicate* a prior condition, insights gained from different processes and theorisations can inform other restoration approaches. The research underscores the extensive vocabulary of environmental restoration in operation; that it is a reflection of context (strategic as much as physical), and not necessarily grounded in academic thinking. Discourses of environmental restoration are not presented as definitive, but rather as approaches which can be tailored (as argued in Rydin 2005). The existence of multiple discourses accommodates choice in ways of thinking; and the capacity to apply and adapt understanding, resulting in variation 'on the ground'. There exists an inherent paradox to restoration terminology, for whilst it may complicate practice, practice in its own right maintains the terminology. It is, one may argue, a 'controlled chaos', bounded by opportunities and choices. While conflict may exist, for discourses are understood in different ways, the same end result is sought – the reversal of environmental degradation, albeit achieved very differently. Multiple discourses also allow for the challenging of ideas, to perhaps achieve a better end result. However, the concern is whether one is in fact improving the landscape condition – or indeed getting it right – for there is no definitive blueprint or agreed guidelines. Such a situation presents a tricky base for wider societal judgement.

In order to make discourses of environmental restoration more transparent, and thus remove ambiguity, what is required is a greater appreciation and recognition of

not only the need to restore, but also of what the discourses might entail and achieve (and indeed whether one should expect anything of discourses). The complication, though, is one of practicality – *is it necessary (or in truth, possible) to provide clarity on the lexicology of environmental restoration discourses*? What are not sought are environmental restoration discourses which are too prescriptive or restrictive in their application. It thus becomes a question of whether restoration practices can be delimited, and through that, standardised only so as to be transferable, even if discourses remain vague and inexact (compare with Higgs 1997).

The concept of 'environmental restoration' holds together a loose alliance of discourses, much like sustainable development, and it is unlikely that this will ever be stabilised or formally arranged. Such an expectation is indeed unrealistic, granted that (i), the discourses are framed by site specificities; and (ii), the need to (re-)rationalise is continuous, both over time and for different audiences. Environmental restoration discourses can remain pioneering and innovative despite their heterogeneity, for they illustrate the multiplicity of actions which can be employed in the reparation of degraded environments.

The Production of Environmental Meanings

Discourses of environmental restoration, while a constituent of wider conservation discourses, are also guided and informed by preservation rationales (see Kane 1994). Conservation and preservation practices are often considered to be at odds with each other, but both complement restoration practices, and allow the latter to draw from a range of environmental management techniques. A dual consideration of conservation and preservation rationales thus awards significance to understanding and rationalising the environmental condition. The production and promotion of particular environmental meanings provides a foundation from which to explore the dominance of prevailing restoration discourses. Another research question set out to examine *the types of environmental meanings produced by the case studies (and through what processes).* The socio-cultural construction of ideas of degradation, naturalness, wildness and wilderness highlights the meanings and values attached to the environment, and the repercussions for restoration discourses.

Degradation of the landscape is regarded as a pre-requisite for, and as legitimation of, the application of discourses of environmental restoration. Within the

context of the case study sites, it is identified by four inter-connecting factors: (i) temporality; (ii) an imbalance caused by anthropogenic influences; (iii) loss of functioning habitat; and (iv), over-exploitation. Interventions are legitimised by degradation, and claims of degradation, although these can be contested (as in the National Forest) – echoing the context for economic regeneration. Consequently, restorative responses will be determined and tailored according to the reading(s) of degradation applied to a tract of land. Restoration practices complement and support the existing (remaining) structure and function present at degraded sites, although a site devoid of any ecological structure or functioning may provide the opportunity for the creation of a landscape type previously unrecorded on that site.

As noted above, issues of *nature* and *naturalness* do not affect the uptake, interpretation and mobilisation of environmental restoration discourses (especially in the UK examples), with semi-natural (even socio-natural) landscapes dominating conceptualisations of the 'nature' of restoration. Interactions between nature and society are promoted – with society a part of nature, rather than detached from it. However, the concept of natural regeneration also contributes to and informs naturalness debates.

Concerns of *wildness* also inform environmental restoration discourses, and it is a wildness which is defined in terms of 'less-managed' areas, where natural forces may predominate, rather than as land never experiencing human intervention. The notion of an 'emotional wild' is also advanced – drawing upon pre-conceived (perhaps romantic) ideals – with 'wild' used to promote something stronger than merely 'natural' (in the sense of emphasising and accentuating those qualities of 'nature' that are beyond, or less affected/regulated by human intervention and manipulation). The concept of wild is applied within the case study sites, but only insofar as to distinguish those areas which have witnessed less human intervention, and are experiencing natural regeneration processes. 'Wild' is thus socially constructed as a quality of 'nature' that is sought in restoration practices. The concept of *wilderness* is not employed within discourses of environmental restoration, but it nevertheless informs the direction of the discourses, exemplifying the social construction of the landscape, and the relationships and interactions (or lack of) between society and nature.

The constructs of 'degradation', 'nature' and 'naturalness', and 'wildness' fit into the fivefold typology of restoration discourses, for they are deployed in ways

which set down parameters that restoration practices can operate within; determining the style/type of restoration that can take place on a site. The constructs also enforce some mechanism of control, in delimiting intervention and manipulation of the site. The composition of the typology is thus a reflection of the heterogeneity of the landscape condition.

Advancing particular features of environmental concepts provides not only a wider context within which multiple restoration discourses can operate, but also a flexibility to their rationalisation. As a consequence, restoration is embedded in its landscape context, as well as in socio-cultural, economic, political and legal contexts. Moreover, the (cultural) value attached to the landscape further informs restoration discourses, for the value of nature has guided past and present land uses, with restoration actions determining future value. Across the Eden Project, National Forest and Walden Woods sites, landscape values are not derived from aesthetics (there is no beautification rationale), but rather from ecological and ethical concerns (although practices may be aesthetic, for they are *designed*) (as Swart *et al* 2001). The value of nature is determined through society-nature interactions, and thus numerous values can be applied to a landscape, for it means different things to different people. A feature or quality of a landscape may be considered valuable for whatever reason by one group, yet it could be deemed unremarkable or marginal by another, complicating the mobilisation of restoration discourses. However, such values may explain why particular discourses appear to dominate. Discourses of restoration thus become very much a product of the times.

8.2.2 The Geographies of Environmental Restoration

Discourses of environmental restoration take as their foundation social constructs of 'nature' and 'naturalness', alongside the meanings and values attached to space and place, exploring how such meanings are utilised by society. Informed by the social context in which they operate, practices of environmental restoration are reflective of values, meanings and attitudes; and their spatial distribution. They are, however, more than simply 'reflective', and it is this aspect which gives them power and significance. As illustrated throughout the analysis, the discourses used to rationalise restoration are grounded in perception, cognition and interpretation, alongside an emotional component. Restoration discourses embody and distil beliefs about nature, landscape

and restoration that draw from geo-spatial, social, cultural, economic, political, and legal influences. What is classified as restoration is subject to change, dependent upon ecological, socio-cultural, political and economic structures.

Despite the presence of academic and practitioner definitions, the uptake, interpretation and mobilisation of environmental restoration discourses is much more fluid in practice. As evidence of this, 'geographies of environmental restoration' and an associated 'local dialect of nature' are employed to express the intricacies and specificities bound up in the discourses. 'Geographies of restoration' place geography (and particularly concerns of space and place, and scalar interactions) at the centre of discussions of environmental restoration, and thus respond to the concern of Murdoch (2004) that discourses can appear detached from geography. It is difficult to advocate a unified, essential reading of environmental restoration, when it is very much a context-embedded practice – hence the 'local' specifier. There is reflexivity in the restoration approach adopted, with the very techniques themselves disciplined by wider conceptions of sustainability, a point reinforced by the inclusion of sustainability in the typology of restoration discourses. Restoration is applied to a plethora of landscape types and conditions (as accounted for in the typology), with mobilisation determined by the action required. That is not to say, however, that the apparently contextually-embedded nature of practices and site specificities prevents any wider theorising about what is occurring elsewhere.

The Local Specificities of Discourses and Practices

This research has reinforced how nature, or more specifically societal understanding of it, is undeniably part of culture, with nature-society interactions lying at the core of environmental restoration discourses. A social construction perspective has the most to offer this research, for it spotlights the social (and cultural) construction of ideas about (and values of) nature and restored nature, in addition to how such constructs are rationalised and justified, and perhaps realised as dominant (or indeed dormant) discourses (drawing on Castree 2005; Marsden *et al* 2003; Cronon 1996a; Soper 1995; Wilson 1992). Essentially, it brings to the fore the multiple and competing meanings of 'nature'. One particular social construction of nature is also singled out for analysis – the material production of 'restored nature' (as Castree 2002; Robertson 2000; Harvey 1996; Smith 1990). Social construction is thus the major theoretical

framework underpinning this research. This thesis has sought to refocus attention back to the ways in which society engages with and experiences (restored) nature, and rationalises ideas thereof, profiling a range of responses created by individuals and organisations through this engagement, experience and rationalisation. Emerging from the research are social and natural particularities (or, rephrased, 'cultural norms') influencing the meta-narrative of how environmental restoration is interpreted and mobilised in space and place. A social constructionist perspective has the most to offer for interpreting these processes.

The research advances understanding of the complex connections between nature and society, specifically theoretical ideas of social nature and co-construction in relation to environmental restoration, with benefit to both geography and social science disciplines. It provides new empirical material on, and theoretical accounts of, the ways that 'nature' is utilised by different environmental organisations to bring about restoration, and how such 'nature' is manifested through restoration, thus extending environmental knowledge. In answering the research question which explored *the types of nature-society interaction that are bound up within the development of environmental restoration schemes*, some of the dominant themes to emerge in environmental restoration discourses have focused on balancing and regulating the demand for, and the supply, of nature; the interdependence between society and nature; lessons learned from manufactured and cultural landscapes; the importance of social and cultural history; community involvement; collaboration; and sustainable development (particularly the economic constituent), with restoration a catalyst for socio-economic change. Of these dominant themes, only one has translated into the fivefold typology – that of sustainability, in turn prioritising consideration of, and the necessity of, both environmental- and social restoration discourses.

What emerges from discussion with project actors is a distinction between those discourses applied to definitional debates, and those discourses which exercise dominance in wider policy and practice debates. As evidence of this, at a theoretical and definitional level, environmental restoration is constructed as solely an environmental act (with dominant discourses those prioritising replication and return, repair, and the removal of anthropogenic influences). When considered at an operational level, the focus shifts to the restoration of both the environment and

society (realised through dominant discourses of sustainability and the restoration of natural capital (alongside repair)), encouraging community participation and engagement in restoration practices. Despite this distinction, the fivefold typology (Sections 6.2.1 and 8.2.1) is nevertheless fully represented by practical examples of environmental restoration. Jordan's (2003) idea of restoration as performance, and associated ideas of world renewal, initiation into community, and celebration exemplify these manifestations within the case studies.

This thesis also highlights some of the inherent difficulties and tensions bound up in projects which are striving to effect environmental (and social) benefits and change through the medium of restoration. The research has contributed to academic literatures on the social construction(s) of (restored) nature by supplying new material on the complex and sometimes contradictory understandings of environmental restoration, principally from the perspective of 'producers' of restoration.

Turning attention to the material social construction of restored nature, ideas of social nature are also brought into play, to better understand how nature as a material object can be appropriated in capitalist terms. The (produced) socio-nature (indeed 'third nature' (Kitchen *et al* 2006)) of environmental restoration practices is very much context-embedded (as Marsden *et al* 2003), framed by site specificities and particularly social constructions of, and attachments to, the landscape. There is a degree of both localisation and standardisation inherent in restoration discourses, and as a consequence, the concept of 'site' is incredibly important to restoration discourses, addressing issues of scale, and the wider landscape context. Material, spatial and temporal contexts are considered, with the mobilisation of environmental restoration discourses the latest manifestation (or layer) of the landscape. Restoration is a malleable process, drawing upon past and present (and projecting future) uses of a tract of land. It is for this reason that the idea of cultural landscape restoration (as Naveh 1998, 1994) – restoring both nature and associated cultural attachments to a site – has been drawn upon throughout this thesis, for it synthesises interactions between nature and culture, which can be expanded to encompass society more generally.

The projects analysed here have indeed not only focused on the restoration of 'nature', but also on restoring society's relationship with nature (a point reinforced in Light 2008, 2000). All three case studies have at their foundation the promotion of

positive society-nature interactions, reflected in their conceptualisation by project actors as social (and cultural) landscapes. Restored nature is a medium through which the case studies work to construct societal ties with the physical environment (and understand the value of the environment) albeit in markedly different ways. The Eden Project, National Forest Company and Walden Woods Project are restoring and promoting a societal connection with the land – be it through illustrating the relationship between plants and people, social forestry, or connecting the land with the literature of Thoreau – frequently highlighting the significance of community relationships. Through a focus on the (socio-) or (semi-)natural, the case studies reconstruct socio-natural lives (in the sense of bringing the interplay and interactions between nature and society to the fore of daily life), albeit in different ways. Restoration can seek to establish a 'sense of place', restoring faith and confidence in an area, for it (re-)establishes a connection between society and nature – and thus an identity – which in turn can bolster participation in, and stewardship of, the tract of land in question. As to the outcomes, however, the benefits to the public accrued from restoration practices are often read from increased visitor numbers, with implications for the management of the site. The value attached to a landscape is also significant, for restored land can have a previously unrecognised cultural value (particularly if the site, prior to restoration, was neglected or considered as marginal).

The socio-natural features of environmental restoration discourses are also informed by different constructions of the need for environmental restoration, and associated concerns of manipulation and intervention. For project actors, the need for intervention is constructed in two ways: (i) society should always intervene, acting as a vanguard for the conservation and protection of the environment, and (ii) society should intervene when it is deemed 'necessary', with the first conviction the most prominent across the three case study sites. The notion of a 'restoration guilt' serves as a motivation to restore, with discourses revealing a somewhat redemptive process (supporting the view of Jordan (2003), amongst others). The degree of manipulation and intervention imposed by restoration discourses (whether through landscape change, societal involvement) is assessed in terms of appropriateness. The examples of restoration practices presented throughout this analysis support this claim, with an example being the favouring of soft engineering approaches over hard engineering.

Restoration practices can do no more than emulate or represent a previous landscape condition, but they can also create landscape conditions previously unrecorded on a site. Decisions are grounded in claims about what is most appropriate to the context, in turn introducing a degree of selectivity to restoration practices. Concepts of landscape integrity are fundamental, as found in claims that restoration practices support where possible what is already present on a site (promoting the importance of a reference point), as well as ensuring that actions are compatible with the wider landscape context. Rationalisations of practice are also reflective of demands on the landscape, and perceptions of 'disturbance' already present in the landscape. Environmental restoration has a role to play in land use planning, but external (planning) issues also inform restoration decisions – principally, concerns of land use, transport, and socio-economic development.

Although none of the case studies explicitly focuses upon restoration to a previous condition, environmental restoration discourses are nevertheless informed by the historical context attached to the sites (echoing the importance Hall (2005) attaches to nature myths and history myths). The Walden Woods Project not only has its connection to Thoreau, but the conceptualisation of the landscape as marginal – and thus unwanted – land; the Eden Project draws upon its links back to the china clay industry; and the National Forest Company connects with agriculture, extractive industries, and development uses. Acknowledgement of the significance and influence of a landscape on society is essential in rationalising and planning for restoration.

The adoption and integration of a social construction epistemology has underlined the significance of the rationalisations and justifications bound up in discourses of environmental restoration, and the interplay between nature and society. At the same time, however, such an approach is incomplete for it also neglects and downplays other aspects that mould restoration discourses. In particular, through an emphasis on the *meanings* and *values* attached to 'nature' and 'restored nature', there is a blurring and lack of separation between material and social forms of nature; and thus social construction does not allow for the study of nature-as-other. To this extent, it would be risky to regard arguments in environmental philosophy as simply another discourse. A social construction approach also overlooks the significance of networks in restoration knowledge(s) and practices (as realised through ANT), in which actions by humans and 'non-humans' are bound together.

Scalar Interactions and Restoration Networks

It is through networks and collaborations that dominant (and in some instances, dormant or latent) discourses of restoration, and associated environmental meanings, are disseminated and become dormant, yet this is an under-studied aspect of environmental restoration, and one this thesis attempts to invigorate. For this reason, one of the research questions set out to analyse *the extent of, and the barriers which impede, collaborations and partnership working with other environmental organisations.* Through the construction of detailed accounts of the restoration networks and collaborations embedded within the Eden Project, the National Forest Company and the Walden Woods Project, the research provides new information on the different scales of project operations, in addition to the transfer of knowledge and meanings across these networks. Although each case study focuses on a particular locality, the significance of the projects, and the contribution to environmental restoration discourses (and policy) is evident at a local through to national and international level (a quality advocated by Rydin 2005). The research has identified several factors which could inform, and provide implications for, policy – chiefly, what is revealed through the constructs 'geographies of restoration' and a related 'local dialect' of nature. These are moulded by scalar politics and interactions (Milbourne *et al* 2008), and the context-embeddedness (and mobility/transferability) of particular ideas and ideals, particularly the many manifestations of 'nature', and within that, signifiers of 'degraded', 'restored', and 'healthy', amongst others.

The multitude and extent of collaborations are a reflection of the remit and objectives of projects. For both the Walden Woods Project and the National Forest Company, collaborations are largely grounded in activities occurring within the geographic boundary of the site. In contrast, all Eden Project collaborations are external to the site, at both national and international scales. Such collaborations and networks are employed in different ways, signifying differing intent. Collaborations with the Walden Woods Project are primarily to bolster the conservation of Thoreau Country and advance Thoreau's philosophy; while for the Eden Project, collaborations are a medium through which to highlight and tackle issues, and raise awareness of other environmental efforts around the world. Within the National Forest, collaborations and partnership working are a major vehicle in the delivery of Forest

creation, with the NFC principally overseeing and guiding activities. To a very minor degree, the projects are also supporting and establishing other projects and ventures.

In addition to the dissemination of restoration (and broader environmental) knowledge(s) through collaborative and partnership projects, there are further approaches to knowledge transfer, both formal and informal (see Cox 1998). Formal knowledge transfer is realised through the hosting of conferences, public lectures and seminars onsite; environmental education programmes; Working Groups; staff exchanges; books; DVDs; newsletters; and articles within the print media. Informal knowledge transfer takes the form of onsite interpretation; but also personal connections with colleagues in other organisations; through word-of-mouth; and pamphlets and advertisements. Within all these processes, particular social constructs of 'nature' and 'environment' are promoted, but such clarity is not extended to 'restoration'. Despite informal distinctions in terminology when rationalising and justifying practices on the ground, no dominant restoration discourse (reflective of the typology) is advanced by project actors when formally reporting such practices. Instead, restoration is defined in general terms of 'recovery' and 'repair' (after SER International 2004), while addressing the dual issues of restoring not only 'nature', but also society's relationship with nature. However, this may simply reflect a desire by the projects to appeal to, and retain, the widest audience. Clearly, there is a social dimension to the way in which 'restoration' is constructed, in which the audience for particular messages is highly relevant.

As each restoration scheme is defined by its context, there is a uniqueness attached to each site, a sentiment that is at times embellished in order to set it apart from other schemes. In such situations, similarities between projects are often downplayed. There are particular meanings and claims emerging from such a conceptualisation, with implications for restoration theory and practice, alongside policy creation. Emotive and symbolic language is often employed by project actors to reinforce the positive impact that restorative action can have, and to (re)assign value and significance to a landscape.

The Implications for Wider Restoration Discourses and Practices

The extent to which environmental projects can influence wider restoration policy discourses provided the focus for another of the research questions. Although no

restoration actions put forward by the three projects have been formalised – and thus adopted as policy or common practice by other practitioners – the projects have nevertheless served as benchmarks, with ideas taken forward informally. Discourses of restoration are embedded in their context, but key ideas inherent in the discourses are transferable (indeed transferred), and thus applicable to multiple contexts, highlighting principles of Best Practice. Table 8.1 further serves as evidence of the transferability of key restoration themes, highlighting concurrent applications of discourses (also compare with Table 7.1). Advocacy (of conservation and restoration concerns) is integral to the Walden Woods Project, and, while important for Eden and the National Forest Company, is organised slightly differently, subsumed within a 'lobbying' rhetoric.

As reinforced in the fivefold typology, restoration discourses can be rationalised in varying and distinction ways, to reveal multiple manifestations of restoration practice on the ground. At the Eden Project, restoration practices are revealed in the *site stabilisation* and *revegetation* (prioritising repair), as well as in the *creation of a manufactured landscape on a neglected site*, to highlight the interplay between nature and society (sustainability; social regeneration). Across National Forest sites, examples of restoration practices feature as an *aid to Forest creation*, and through that, *socio-economic regeneration* (restoration of natural capital; repair; sustainability; social regeneration). Restoration practices at the Walden Woods Project are represented through *shoreline restoration*, returning a landscape to a prior condition to reconnect with environmental literature (replication; removal of anthropogenic influences); the *capping and restoration of a landfill* (repair; removal of anthropogenic influences); the *creation of an interpretive trail* (repair; removal of anthropogenic influences; natural regeneration); and the *removal of invasive species* (replication). The above examples illustrate the potential available to (and within) restoration discourses, a result of a fluidity and instability of terminology and definition.

Despite the dominance of particular restoration discourses, conflict surrounds whether these approaches do indeed qualify as *restoration*, but at the foundation to all is the idea of creating or restoring natural capital to 're-green', and the significance of landscape integrity and appropriateness. As such, policy discourses for environmental restoration are complicated – but not restricted – by definition, for such multiplicity

allows for deviation and mutation of restoration discourses. There thus exists a freedom of approach amongst practitioners to direct restoration as appropriate for the landscape context.

That said, the projects have contributed to, are present within, and are guided by land use planning documents – both general and specialised – which could shape wider restoration practice and policy. Within Walden Woods, this relates particularly to inclusion in open space plans, and within the National Forest, in forestry policy and guidance. In parallel, there are several policy influences which inform and guide restoration efforts within the case studies – these are grounded in environmental planning, be it land policies, regulations, or protection mechanisms. As such, the case studies draw upon the supra-local to help rationalise what they do. Further influences steering restoration discourses encompass ideas, practices and experiences (both positive and negative) from other organisations and projects, in some instances acting as a catalyst for action. Such ideas are modified and thus embedded within individual projects. Linked to such lesson drawing, however, is a degree of political purchase, and also moral authority.

Visibility within environmental arenas further serves to bolster the extent to which environmental projects can inform wider restoration policy discourses. Such visibility in large part rests with the multifarious operations of the case study projects, and thus the potential to contribute to numerous debates (and the Eden Project, at least, is a spectacle). However, visibility is also dependent upon how the projects and their operations are defined, with outreach an important consideration in achieving this. The case study projects are influential on a local through to national scale, with a strengthening international audience and arena. The idea of scale and scalar politics is important here: Eden has local through to global impacts, and the NFC and the WWP both exhibit regional and national (with developing international) influences. This is in part explained by a growing environmental awareness amongst society, alongside a growing governmental 'demand' for the symbols and services that these restoration projects provide. The capacity of the projects to inform restoration policy discourses is, however, restricted by concerns of funding, space, political issues, and fear.

8.2.3 Moving Beyond Pandora's Box to see Restoration as Redemption

Emerging from the research (and particularly from project practitioner discourses revealed by the interview data) is the idea of the practice of environmental restoration as an act of redemption (an idea expressed elsewhere in Jordan 2003; Higgs 2003, 1997; Rolston 1994), a consequence of what could perhaps be termed a 'restoration guilt'. It is a guilt which is manifested in anthropologically-induced environmental damage. The analogy with Pandora's box is particularly apt here, for when all the ills of mankind were released (in this instance, environmental degradation and destruction), hope alone remained (realised in the redemptive power of environmental restoration). There is an emotionality attached to environmental restoration, and what makes the emotional loading of restoration so powerful is the growing availability of resources – both public and private – now channelled to the idea that lost values of landscapes should be restored, to deliver a wide array of new social and ecological functions. Beliefs about the redemptive power of restoration thus play increasingly strongly into the rationalisation of landscape change. The idea of 'putting something back' for nature, thus countering narratives of environmental 'loss' (Harrison 1993), exerts a hold on the popular imagination.

Tied in with the theme of redemption is the power attached to 'prodigal son' stories. Framed within the context of restoration discourses, such stories can be used to explore the (reckless) 'waste' of resources and subsequent attempts to improve or remedy the environmental condition, with an opportunity to express repentance for such waste. In this regard, restoration discourses and practices thus 'forgive' and move on from 'ill-judged' interventions in the environment, through promoting an ethic of participation in and stewardship of the environment. Furthermore, the parable of the prodigal son captures the evident social and moral power of the 'return of the lost', explicitly valuing the bringing back of 'the lost' into favour (over that which never 'strayed' in the first place).

Drawing parallels between environmental restoration and the parables of both Pandora's box and the prodigal son has allowed for reflection on wider culturally ingrained ideas and moral beliefs. Not only does it link with how respondents describe the actions of projects, but it also provides a way of thinking about the resonance of discourses, and subsequently where priorities and motivations lie.

8.3 New Research Agendas

In acknowledging issues of reflexivity, and limitations emerging through the research design and methodology, I wish to briefly address two improvements which are identifiable for this (and related future) research. First, extended periods of study with the Eden Project, the National Forest Company and the Walden Woods Project allowed for research to be conducted through participant observation, semi-structured interviews, and a visual ethnography; but the research may have been further supplemented by an accompanying work placement. Such a placement would have bolstered the development of a 'thick description' (Geertz 1973) of each project, and provided a more detailed insight into (a research-specific element of) its operations. By further emphasising the *participant* aspect of participant observation, there may also have been opportunity to be involved with restoration-related activities.

Second, the research has focused upon the viewpoint of the 'restorer' (via key project actors within the case studies), to examine (dominant) discourses and practices of environmental restoration. One potential research strategy that builds upon this current research would be to focus on the inter-relations between 'elite' discourses and visitor perceptions. This would provide both internal and external constructions of environmental restoration, and through that, additional analysis of the (perceived) nature of restoration.

Through discussion and analysis of the multiple and contested nature(s) of environmental restoration, this research has drawn together numerous environmental debates and contemporary issues. Several themes developed in, and emerging from, this doctoral thesis could provide and become the focus of further research within the field of environmental restoration, and contribute to geography and social science more broadly. There is one significant theme which I consider worthy of further academic investigation – the idea of restoration as redemption.

There remain many unanswered questions as to why so many people are fascinated with the idea of environmental restoration, and the consequences of such a fascination. Drawing upon the ideas of redemption and restoration 'guilt', and of 'putting something back', future research could conceptualise the links between geographical, ethical and emotional dimensions of the relationship between society

and 'restored space', to examine how nature is *experienced*, and thus provide new insights into the valuing and appreciation of the restored environment. Focusing on how (restored) natures are experienced by 'elite producers' underpins the idea, but attention could also be directed towards 'consumers' of restored nature, for this is much under-studied in the social science of restoration. Academics such as Cowell (2003, 2000, 1997), but also Adams (2003), Eden (2002) and Eden *et al* (1999) to some extent, have been critical of restoration 'producers', but have said relatively little about 'consumers'.

In exploring the emotionality bound up in restoration discourses and practices, the research could address the basis and nature of appeal of restoration in terms of redemption, and the material and social consequences of such appeal. This in turn would spotlight what society is indeed 'redeeming' through the act of environmental restoration, and what is produced through restorative practices. Such research has the potential to contribute to understanding of the hybrid society-nature interconnections bound up within practices of environmental restoration, such as those of engagement and experience. It could also work towards unpacking the emotional politics surrounding the representation of nature and restored nature. Moreover, the research could explore the function of a 'relational sensibility' as a motivation for (restorative) action, that is, why society should engage in environmental restoration.

Restoration discourses and practices remain 'on uneven ground' – fuelled by the instability, fluidity and ambiguity of terminology and rationales – but this is not necessarily a bad thing. Instead, it should be viewed as an opportunity for the continued (re-)interpretation of what it means to 'restore'; an indication and reflection of where priorities lie in reversing environmental destruction and degradation.

APPENDICES

Appendix 1: Glossary of Second-Tier Case Studies

Atlantic Coast and Valleys Project

The Atlantic Coast and Valleys Project (a Landscape Partnership HLF Project) works to restore important habitats on the north Cornwall coast – particularly those encouraging the return the Large Blue butterfly and the chough, which have disappeared due to changes in farming practices. The ACVP combines historic landscape restoration and habitat reclamation; alongside skills development/training, access, landowner and community involvement, and economic development. Due to a refusal of funding by the HLF in 2007, the ACVP is no longer able to progress as initially planned.
Connection with: Eden Project.

Caddo Lake Institute

The Caddo Lake Institute, located in northeast Texas, is working towards the protection of the ecological and socio-economic integrity of Caddo Lake and its wetlands and plant and wildlife habitats.
Connection with: Walden Woods Project.

Conkers Discovery Centre

A visitor attraction pioneered by the Heart of the National Forest Foundation, Conkers is located at the heart of the Leicestershire Forest Park, on the site of the former Rawdon colliery at Moira, and combines indoor and outdoor activities.
Connection with: National Forest Company.

Department of Conservation and Recreation

The Department of Conservation and Recreation is the steward of the state parks system within Massachusetts, protecting, promoting and enhancing natural, cultural and recreational resources.
Connection with: Walden Woods Project.

Estabrook Woods Alliance

The Estabrook Woods Alliance is working towards maintaining the integrity of Woods as an educational, ecological and historical resource for Middlesex School, in Concord, MA. However, the Middlesex Board of Trustees has already developed part of the Woods for sport uses.
Connection with: Walden Woods Project.

Forest Research

Forest Research is the research agency of the Forestry Commission. It is the principal organisation in Britain involved in forest and tree-related research.
Connection with: National Forest Company.

Forestry Commission

The Forestry Commission is the government department responsible for the protection and expansion of Britain's forests and woodlands, within that, increasing their value to society and the environment.
Connection with: National Forest Company.

Friends of Thoreau Country

Friends of Thoreau Country is a grass-roots organisation established to lobby for the conservation of Deep Cut Woods in Concord, MA, and thus prevent the development of the Woods for playing fields.
Connection with: Walden Woods Project.

Heart of the National Forest Foundation

A partnership of business, the community and the public sector, the Heart of the National Forest Foundation is creating a wooded parkland at the heart of the National Forest. Ultimately covering 1,000 acres, the Leicestershire Forest Park will support the restoration of derelict coalfields. At the heart of the Leicestershire Forest Park is Conkers Discovery Centre.
Connection with: National Forest Company.

HEATH Project

A stewardship scheme, the HEATH (Heathland: Environment, Agriculture, Tourism and Heritage) Project, funded through Interreg and the Heritage Lottery Fund, is working in a number of regions across northwest Europe. These are predominantly Cornwall (England), Pembrokeshire (Wales), Brittany and Normandy (France), and Hoge Veluwe National Park (Holland). Across Cornwall, it aims to reintroduce (sustainable) heathland management and grazing practices onto 55 sites (in West Penwith, the Lizard and St Agnes), "reconnecting sites, advocating good land management techniques, encouraging local community involvement and promoting heathlands as a valuable resource" (HEATH Project 2006). The sites comprise private land, commons, and National Trust and Natural England land, across 3,500 hectares.
Connection with: Eden Project.

Land Use Consultants

Land Use Consultants is an environmental consultancy, with its principal offices in London, specialising in planning, design, and management.
Connection with: Eden Project.

Landlife

Landlife, and its National Wildflower Centre, is based in Liverpool, and works predominantly within urban and urban fringe areas to create areas for wildflowers (and wildlife) which have sustainable links to the community.
Connection with: Eden Project; National Forest Company.

Lost Gardens of Heligan

A garden restoration project located near Mevagissey in Cornwall, the Lost Gardens of Heligan covers more than 200 acres, and includes the Northern

Gardens (restored productive gardens and pleasure grounds), The Jungle, the Wider Estate and Lost Valley, and Horsemoor Hide and the wildlife project.
Connection with: Eden Project.

Massachusetts Audubon Society

Mass Audubon works to protect the 'nature of Massachusetts for people and wildlife', predominantly achieved through the creation and protection of wildlife sanctuaries, alongside (education) programmes.
Connection with: Walden Woods Project.

Post-Mining Alliance

The Post-Mining Alliance, operating out of the Eden Project, acts as a forum for the promotion of good practice in post-mining regeneration, addressing environmental and socio-economic issues. Developed as a partnership between the Eden Project and Rio Tinto in 2002, the Post-Mining Alliance has evolved to also encompass Anglo American, Imerys, and the Land Restoration Trust.
Connection with: Eden Project.

RESTORE The North Woods

RESTORE The North Woods seeks to 'promote the restoration and permanent protection of New England's wild places'. The organisation is working towards (i) the creation of a 3.2 million acre Maine Woods National Park; (ii) the recovery of displaced and endangered wildlife; and (iii) the recovery and protection of wild forests in New England (RESTORE 2007).
Connection with: Walden Woods Project.

Sand County Foundation

The Sand County Foundation in Wisconsin works towards sustainable and ethical land management practices and partnerships for the benefit of communities and the physical landscape – drawing upon the ethos put forward by Aldo Leopold (1949) and exemplified through the Leopold Memorial Reserve.
Connection with: Walden Woods Project.

Sasaki Associates, Inc

Sasaki Associates is an interdisciplinary planning and design firm, with offices in Watertown, MA, and San Francisco, CA, providing consulting and design services in the fields of planning and urban design, landscape architecture, architecture, interior design, eco-technologies, graphic design and strategic planning.
Connection with: Walden Woods Project.

Staffordshire Wildlife Trust

Staffordshire Wildlife Trust works to protect and maintain the wildlife and 'wild' landscapes of Staffordshire, promoting understanding of, and enjoyment and involvement in, the environment.
Connection with: National Forest Company.

Thoreau Society

The Thoreau Society is dedicated to promoting Thoreau's life and works through education, outreach, and advocacy.
Connection with: Walden Woods Project.

Walden Pond Board of Directors

The Walden Pond Board of Directors is an advisory board to the Department of Conservation and Recreation.
Connection with: Walden Woods Project.

Walden Pond State Reservation

Walden Pond State Reservation, a subdivision of the Department of Conservation and Recreation, comprises 462 acres of protected open space, including Walden Pond, a National Historic Landmark.
Connection with: Walden Woods Project.

WildWorks

WildWorks is a landscape theatre company, based in Cornwall.
Connection with: Eden Project.

Woodland Trust

The Woodland Trust is a prominent woodland conservation charity in the UK, dedicated to the protection of native woodland heritage.
Connection with: National Forest Company.

Appendix 2A: Project-wide Interview Schedule

Eden Project; National Forest Company; Walden Woods Project

I am a PhD researcher from the School of City and Regional Planning at Cardiff University, examining discourses of environmental restoration within environmental organisations. Three case studies have been selected: two are located in the UK – the Eden Project in Cornwall, and the National Forest Company in the English Midlands; with the third located in the US – the Walden Woods Project in Lincoln, MA. Through this interview, I hope to gain an insight into the operations of the project, alongside more individual opinions and perceptions of the project.

Name of Project.....

Name of Interviewee.....**Job Title**.....

Background

A. When was the project established?
B. How long have you worked for the project?
C. What did you do before?
D. Could you describe your role within the project?
E. What are you working on at present?

How was the project initiated and originally developed?

A. What were people trying to change?
B. How was the project funded/financed?
C. What factors informed the location of the project?
D. What local planning issues are currently informing project activities?

Could you describe the project to me in terms of its objectives and main activities

A. What are the aims of the project?
B. Have these activities changed over time? How?
C. What are the main departments/teams within the project?
D. How does the project approach environmental issues?
E. How does the project balance conservation, education and research themes?

What connections and networks exist with other ecological projects?

A. Who was/is involved?
B. Are you aware of any similar projects?
C. Do experiences from elsewhere act as a catalyst for work undertaken here?
D. To what extent have conservation/preservation experiences been integrated?
E. How are ideas communicated and transferred?
F. Is the project prevalent in supporting and establishing other projects in the [UK/US] and abroad? If so, where?
G. To what extent does the project have a symbolic status? How important is this?
H. What links exist with other environmental interest groups?

What wider influence has the project had on projects, practices, and policy elsewhere?

A. Is the project influential in local, national, and international arenas? How?
B. Do key project actors have a role to play?
C. Are you aware of any project practices which have been adopted by policy makers?
D. Do you think the project is successful in wider environmental arenas? Why?
E. Does a growing environmental awareness amongst society have implications for the project?
F. Have any project 'innovations' been adopted by organisations/experts/tourists/ local residents?
G. Does the project have a role to play in local planning issues?
H. Are there any limitations faced by the project?

How do you think the project is perceived by those outside the EP/NFC/WWP community?

A. Media constructions (local, national, international); visitors; local residents
B. How do you promote the project to other groups (communities, schools, the media, the tourist board)?
C. What do people consider to be positive elements of the project?
D. Are there any negative reactions to the project?

To what extent does 'environmental restoration' feature within the project's operations?

A. What does restoration mean to you?
B. To what ends do you consider restoration, regeneration and rehabilitation to be distinct terms?
C. In what respects are they connected?
D. Is the term 'restoration' used by the project?
E. Why should we restore? How?
F. When should society intervene?
G. What is being restored on-site? Is it working?
H. What environmental management techniques are employed?
I. How would you define terms such as wild, degraded, restored?
J. How is 'nature' defined and valued on-site?
K. Is the project landscape 'natural'? Why?

How would you like to see the project develop over the next few years – 5, 10, 20 years?

A. On-site
B. In a wider environmental context
C. Do you see any conflicts and tensions continuing/surfacing?

Are there any questions you want to ask me, or any other points you would like to make?

Appendix 2B: Project Networks Interview Schedule

Environmental Organisations with Links to Eden/NFC/WWP

I am a PhD researcher from the School of City and Regional Planning at Cardiff University, examining discourses of environmental restoration within environmental organisations. Three case studies have been selected: two are located in the UK – the Eden Project in Cornwall, and the National Forest Company in the English Midlands; with the third located in the US – the Walden Woods Project in Lincoln, MA. Through this interview, I hope to gain an insight into the operations of the project, alongside more individual opinions and perceptions of the project.

Name of Project.....

Name of Interviewee.....**Job Title**.....

Background

A. When was the project established?
B. How long have you worked for the project?
C. What did you do before?
D. Could you describe your role within the project?
E. What are you working on at present?

Could you describe the project to me in terms of its objectives and main activities

A. What are the aims of the project?
B. Have these activities changed over time? How?
C. What are the main departments/teams within the project?
D. How does the project approach environmental issues?
E. How does the project balance conservation, education and research themes?

What types of links exist between [project name] and the EP/NFC/WWP?

A. How did it come about? When? Why?
B. Who was/is involved?
C. Are ideas communicated and transferred? How?
D. Are conservation, education and research major components?
E. Are there any conflicts?
F. What are the key differences?
G. Do you have links to any other environmental or ecological projects?
H. Are you involved in any partnerships/collaborations? (projects, publications...)

What effect (and impact) has the EP/NFC/WWP had on [project name]?

A. Has the project benefited from increased awareness – publicity by association?
B. Do any problems exist?
C. What direction would you like to see the EP/NF/WWP take in the future?

What wider influences have the EP/NFC/WWP and [project name] had on projects, practices, and policy elsewhere?

A. Is the project influential in local, national, and international arenas? How?
B. Do key project actors have a role to play?

C. Who do you see as key project actors from the EP/NFC/WWP and [project name]?
D. Are you aware of any project practices which have been adopted by policy makers?
E. Do you think the project is successful in wider environmental arenas? Why?
F. Does a growing environmental awareness amongst society have implications for the project?
G. Have any project 'innovations' been adopted by organisations/experts/tourists/ local residents?
H. Does the project have a role to play in local planning issues?
I. Are there any limitations faced by the project?

To what extent does 'environmental restoration' feature within the project's operations?

A. What does restoration mean to you?
B. To what ends do you consider restoration, regeneration and rehabilitation to be distinct terms?
C. In what respects are they connected?
D. Is the term 'restoration' used by the project?
E. Why should we restore? How?
F. When should society intervene?
G. What is being restored on-site? Is it working?
H. What environmental management techniques are employed?
I. How would you define terms such as wild, degraded, restored?
J. How is 'nature' defined and valued on-site?
K. Is the project landscape 'natural'? Why?

How would you like to see the project develop over the next few years – 5, 10, 20 years?

A. On-site
B. In a wider environmental context
C. Do you see any conflicts and tensions continuing/surfacing?

Are there any questions you want to ask me, or any other points you would like to make?

Appendix 3: List of Interview Respondents

Interview Respondents	*Identifier in Analysis*
Atlantic Coast and Valleys Project	
ACVP Development Manager	PM
Caddo Lake Institute	
President	M
Conkers Discovery Centre	
General Manager	M
Department of Conservation and Recreation	
Deputy Commissioner Planning and Engineering	PL
Eden Project	
Foundation Director	ED/SC
Senior Scientist	SC
Project Researcher	SC
Tertiary Education Coordinator	ED/SC
Landscape Project Manager	LA
Director of Learning	ED/SC
Sustainability Director	LM
Science Project Officer	SC
Chief Executive	M
Director of the Post-Mining Alliance	PM
Artistic Director (*WildWorks)	ED
Gardens for Life Coordinator	ED/LM
Partnerships Programme Manager	PM
Estabrook Woods Alliance	
Board of Directors	PM
Forest Research	
Land Regeneration Biochemist, EHSD	SC
Project Leader, EHSD	PM
Forestry Commission	
Forest District Manager for the West Midlands	LM
Area Forester	LM
Friends of Thoreau Country	
President	H/SC
Executive Director	M
Heart of the National Forest Foundation	
HNFF Project Director	M
HEATH Project	
Project Manager	PM
Land Use Consultants	
Principal	LA
Landlife	
Senior Project Manager	PM
Leicestershire County Council	
Forestry Officer	LM
Environmental Manager	LM
Lost Gardens of Heligan	
Manager of the Productive Gardens	SC

Massachusetts Audubon Society	
Director of Capital Assets and Planning	PL/LA
Assistant Director for Legislative Affairs	SC
Director, Ecological Extension Service	SC
National Forest Company	
Chief Officer Land Use	PL
Chief Executive	M
Woodland Officer	LM
Chief Officer Land and Project Development	PL/LM
Incentives and Land Management Officer	LM
Funding and Partnerships Officer	PM
Biodiversity and Access Officer	LM
Chief Officer Corporate Services	FI
Community Liaison Officer	C
RESTORE The North Woods	
Executive Director	M
Sand County Foundation	
Program Director; Community Based Conservation Network, Africa	PM
Sasaki Associates, Inc	
Principal	PL
South Derbyshire District Council	
Head of Leisure and Community Development	C
Staffordshire Wildlife Trust	
Director	M
Thoreau Society	
Executive Director	M
Walden Pond Board of Directors	
Chair (*Sasaki Associates, Inc)	LA
Walden Pond State Reservation	
Park Supervisor	LM
Assistant Park Supervisor	LM
Walden Woods Project and the Thoreau Institute at Walden Woods	
Land Conservation Coordinator	LM/SC
Director of Education	ED
Curator of Collections	ED
Assistant to the Executive Director	PM
Executive Director	M
Former Land Conservation Coordinator	LM
Bookkeeper	FI
Woodland Trust	
Campaign Development Officer, Tree for All	PM
Maynard, WB; author: *Walden Pond: A History* (2005)	H

C	Community Development	**LM**	Land Management
ED	Education	**M**	Senior Management
FI	Finance	**PL**	Planning
H	History	**PM**	Project Management
LA	Landscape Architecture	**SC**	Science

Appendix 4: Objectives of the Research Design

Tracing the Research Questions through to the Research Methodology

Research Questions/Theory	*Literature Review Themes*	*Data Required*	*Methods*
What types of nature-society interaction are bound up with the development of environmental restoration schemes?	• Social nature • Cultural constructions/the nature-culture debate/cultural landscapes • The production of nature • Restoring natural capital • Nature writing	• Factors leading to the development (and location) of the projects • Project activities • Roles of staff/previous experience • Nature-society connections • Political issues • Funding approaches • Cultural constructions of restoration/role in influencing discourse • Restoration 'perspectives' and material consequences	• Participant observation • Semi-structured interviews with project staff • Semi-structured interviews with those involved with the establishment of the project • Visual ethnography • Document analysis
In what contexts are particular discourses of environmental restoration employed in practice, and with what justifications and consequences?	• Environmental morality • Environmental ethics, and the moral implications of restoration • Restoration as 'faking nature'; an 'artifact' • Planning gain and environmental compensation • Management and practice of the ER discourse • The remit of restoration/what is good restoration?	• How ER is defined/why different discourses exist • New 'generational knowledges' • Why differences matter/are important • Application of restoration discourses	• Participant observation • Semi-structured interviews with project staff • Semi-structured interviews with projects with links to the case studies • Visual ethnography • Document analysis
What types of environmental meanings are produced by these projects (and through what processes)?	• The question of nature • 'Naturalness' • The 'end of nature' debate • Knowledges of nature • Wildness and wilderness • The value of nature/valuing nature • Restoration: conservation vs. degradation • Goals for restoration	• The production and consumption of environmental meanings created intentionally (and unintentionally) by the projects – how innovations are communicated, processed, and assessed; and utilised by external groups • Knowledge transferred and represented elsewhere (lesson drawing)	• Participant observation • Semi-structured interviews with project staff • Semi-structured interviews with projects with links to the case studies • Visual ethnography • Document analysis

To what extent can environmental projects influence wider restoration policy discourses?	• Measuring restoration success • Should we always restore? • The role of policy discourses in informing restoration decisions • Stakeholders involved	• The status of the projects at a local, national, and international scale • The power they wield to inform policy decisions • The function/position of key project actors in environmental knowledge networks • The role of transnational pressure groups • Whether restoration discourses operationalised by the projects are drawn upon by policy makers	• Participant observation • Semi-structured interviews with project staff • Semi-structured interviews with projects with links to the case studies • Document analysis
What is the extent of, and what barriers impede, collaborations and partnership working with other environmental organisations?	• Communication and knowledge networks	• The extent to which external programmes have been adopted but adjusted • Whether elements from different programmes have been combined • Whether experiences from elsewhere have acted as a catalyst for new ideas within the projects • The influence of the projects on other environmental projects • The support they give in other countries	• Participant observation • Semi-structured interviews with project staff • Semi-structured interviews with projects with links to the case studies • Document analysis

Appendix 5: Connecting Ideas in NVivo

Aligning Emergent Nodes and Research Questions

Research Questions/Theory	*Coding System: Nodes*
What types of nature-society interaction are bound up with the development of environmental restoration schemes?	• Aims and objectives • Funding and finance • Geography of space and place • Integrity of the landscape • Landscape quality • Liability • Local planning issues • Mine closure • Mining legacy • Nature-society-economy relations • Project practices • Shifting focus • Social enterprise • Sustainable development
In what contexts are particular discourses of environmental restoration employed in practice, and with what justifications and consequences?	• Approaching environmental issues • Balancing conservation, education and research • Contradictions • Cross-disciplinary • Environmental education • Environmental management techniques • Examples of environmental restoration • Integrating conservation and preservation experiences • Manipulation and intervention • Regeneration • Rehabilitation • Restoration • Restoring natural capital • Subtleties in terminology • Using an ER rhetoric • Why should we restore
What types of environmental meanings are produced by these projects (and through what processes)?	• Degradation and devastation • Media constructions • 'Natural' return • Nature and naturalness • Negative readings of the projects • Positive readings of the projects • Public perception • The value of nature • Wild • Wilderness
To what extent can environmental projects influence wider restoration policy discourses?	• Adoption of project practices as policy • Advocacy • Benchmark • Best practice • Climate change • External influences as a catalyst • Future plans • Implications of growing environmental awareness • Influences on the global-local • Limitations

	• Policy influences • Visibility in wider environmental arenas
What is the extent of, and what barriers impede, collaborations and partnership working with other environmental organisations?	• Knowledge transfer (formal) • Knowledge transfer (informal) • Links with interest groups • Project networks and collaborations • Promoting the projects • Supporting and establishing other projects • Symbolism • Unique

Appendix 6: Environmental Education Programmes

Implications for the Interpretation and Mobilisation of Restoration Discourses

Approaching Walden

Approaching Walden, a 'professional development summer seminar for high school educators and graduate students', is a place-based, interdisciplinary workshop employing Thoreau's ethic and experience at Walden Woods as a model. As such it "provides teachers with the skills needed to lead their students in a study of their home community" (WWP 2007c); supporting the idea of constructing a curriculum that is place-based. The themes of the 2007 seminar (with which I was involved) addressed Thoreau's Community, Thoreau the Naturalist, Thoreau and Social Conscience, Thoreau the Transcendentalist and Putting Thoreau's Words into Action. Whilst the content of the seminar is not explicitly linked with environmental restoration, it is providing different approaches to reading the environment, and as such, may inform the interpretation and subsequent mobilisation of restoration discourses.

World Wide Waldens

World Wide Waldens is grounded in the belief that "Each town should have a park, or rather a primitive forest, of five hundred or a thousand acres, where a stick should never be cut for fuel, a common possession forever, for instruction and recreation [...] inalienable forever. Let us keep the New World new, preserve all the advantages of living in the country" (Thoreau 1859 in Thoreau 2007:405-406). The programme seeks not only to put Thoreau's words into action, but also encourage environmental stewardship projects, develop understanding of environmental ethics, and, as an Internet-based programme, connect globally with other 'student environmental leaders' (WWP 2007b). Advocacy of global environmental issues is sought; "to use the environment as the common thread that binds us all" (M, WWP Interview 5). As a consequence, World Wide Waldens advances the practice of restoring natural capital through the creation, alongside stewardship and management, of such areas.

Gardens for Life

Gardens for Life, an Eden Project venture, emerged out of a concern for food education, citizenship education, and fair trade. It works in collaboration with schools

to "create gardens, grow food crops, and develop international partnerships and learning resources" (Eden Project 2007:14). The Gardens for Life approach parallels the Eden Project's own approach – to use plants as a medium for activity – and is explained on site within the Global Garden exhibit (as depicted in Figure A6.1).

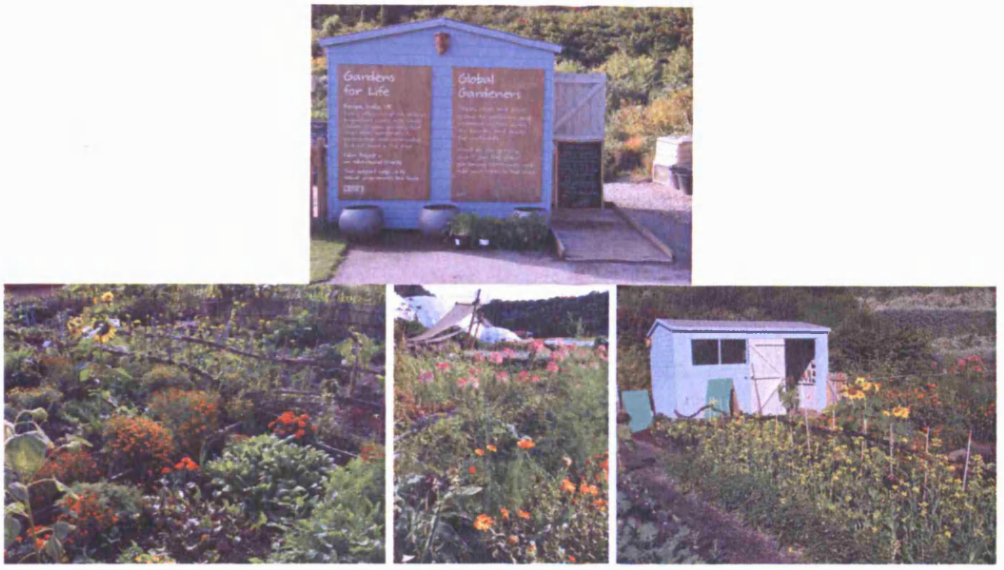


Figure A6.1 | The Global Garden exhibit at the Eden Project; top: Gardens for Life and Global Gardeners, bottom left, centre and right: the Global Garden.

The pilot project, based in schools in Kenya, India, and also Cornwall, Bristol and Gloucestershire, witnessed differing elements of the 'school gardens' being promoted and advanced. In Kenya, the focus was on food security, and community involvement; in India, it was an innovative response to the 'school garden' due to constraints of space, and the gardens as an education activity; and in the UK, the context was school grounds development, outdoor learning, and healthy food, with an emphasis on design (ED/LM, Eden Project Interview 12; Field Journal: Eden Project). Waste land has been restored for gardens in a number of cases, and playgrounds that were under tarmac have been developed – a new view of school grounds is promoted (ED/LM, Eden Project Interview 12). There are elements of environmental restoration in the project, but it is not a central theme. As with many projects, it is the material basis, but not necessarily the environmental message.

Mud

Drawing upon the disconnect between young people and the environment (as in Louv 2006), the Mud Between Their Toes programme at Eden "reconnects young people, in

and out of school, to their environment enabling them to experience, understand and celebrate their sense of place and purpose in the natural world and human community; locally and globally" (Eden Project 2007:13). Mud will link the global (as represented through the Eden Project) with the local (be it the local natural environment, the local community, home, or school), and serves to encourage experiential and creative approaches to learning in outdoor spaces. As with Approaching Walden, the implications for environmental restoration rest with the indirect outcomes of the Mud programme, to the extent of fostering awareness and concern for the wider environmental condition, and of the interactions between nature and society.

Tree For All

Tree For All is a Woodland Trust initiative, which within the National Forest operates in partnership with the NFC, the British Trust of Conservation Volunteers, SDDC Environmental Education Service, Snibston Discovery Park, and the FC. Launched in 2004, it is the most ambitious children's tree-planting project undertaken in the UK, with plans to plant 12 million trees over the next five years, in addition to advancing environmental education. Tree For All aims to involve one million children, and provide them with the opportunity to make a positive difference (Woodland Trust Interview); and through that, target social inclusion. As such, the programme supports the NFC's wider mission of Forest creation – thus supporting the restoration of natural capital – alongside promoting society-nature interactions. Tree For All uses a variety of social practices to carry out the restoration, which in turn produce interesting connections with wider environmental management and socio-cultural practices.

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