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CONTESTED BOUNDARIES, CONTESTED PLACES:

AN EXPLORATION OF IRELAND'S

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CONTESTED BOUNDARIES, CONTESTED PLACES:

AN EXPLORATION OF IRELAND'S
CONTRIBUTION TO
NATURA 2000

SHARON BRYAN

A THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
TO THE DEPARTMENT OF SOCIOLOGY
UNIVERSITY OF DUBLIN, TRINITY COLLEGE

JANUARY 2009

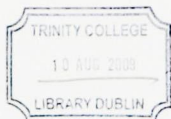
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SUMMARY

Natura 2000 is a network of protected ecological sites across the European Union considered important for biodiversity. Breaking with the traditional notion of “nature reserves”, designated sites include public, private and commonly held land. Drawing on ideas emanating from a Sociology of Scientific Knowledge (SSK), Actor Network Theory (ANT) and a dwelling perspective, this study explores the dilemmas and conflicts arising from attempts to implement the network in Ireland, and through doing so develops sociological themes around nature-society relationships, particularly those relating to ‘place’. Natura 2000 is conceptualized as an attempt to draw and manage lines or boundaries around ‘nature’ and ‘society’ – a process that entails the translation of ‘places’ into ‘habitats’. The study reveals the challenges and dilemmas facing those attempting to devise and manage these conceptual and geographic boundaries and explores the resistance to place translation by people on-the-ground.

The thesis employs qualitative research methods, drawing in particular on data derived from 59 qualitative interviews with key informants and landholders directly affected by site designation. It also draws on documentary analysis and participant observation. The research is divided into two phases. Phase 1 explores the process of Natura 2000 line-drawing at national level while Phase 2 consists of two case studies of contested line-drawing in specific places. The main findings of the study are outlined below.

In Natura 2000 there is a tension between “science-first” and “people-included” (Kelsey, 2003, Stoll-Kleeman et al, 2002) models of conservationism: it attempts to achieve a scientific objective, biodiversity conservation, while taking social, economic and cultural factors into account (Alphandéry et al, 2001). This entails repeated line-drawing exercises between what is considered ‘natural’ and what is considered ‘social’. Through an analysis of its implementation in Ireland, this thesis reveals Natura 2000 line-drawing as a highly controversial, socially mediated and politically negotiated exercise based on ‘uncertain’ and ‘incomplete’ science (Pinton, 2001), the boundaries of which are always contested.

The thesis also reveals the impracticalities of devising and managing conceptual and geographic boundaries between 'nature' and 'society' in particular locales. It shows how scientific uncertainties can plague decision-making processes and how these uncertainties can exacerbate conflict. It further shows how standardised, 'placeless' solutions can be insensitive to the particularities of place and how 'nature' continually exercises an agential role that can frustrate humanly-devised attempts to define, control or manage it.

While powerful lobby groups (both pro and anti designation) have enjoyed some input into line-drawing at national and EU levels, both case studies reveal the extent to which people on-the-ground played little or no part in these processes. In spite of integrationist rhetoric promising moves towards a more "people-included" model of conservationism, Natura 2000's "science-first" (Kelsey, 2003) methodology effectively displaces people-on-the-ground. The translation of place to habitat takes nature out-of-place and out-of-time: it reduces places to only that which can be viewed through the lens of 'science'.

Unlike lobby groups at national level who attempt to influence the process by drawing their own, *alternative* nature-society boundaries, ordinary landholders on-the-ground resist the 'scientisation' of their places by *not* drawing nature-society boundaries. They resist 'place as habitat' through a reliance on alternative local ways of knowing and relating to 'nature' and the habitual practices of dwelling-in-place.

Against the background of extensive socio-ecological change in rural Ireland, conservationists focus on protecting nature while local people focus on protecting their place. Through strikingly similar rhetorics of loss and catastrophe, both groups articulate concerns regarding the changing nature of these (for one reason or another 'special') places. The thesis concludes that resistance to designation is bound up with a broader sense of anxiety regarding changing rural lifestyles, livelihoods and experiences of place. These are further threatened by "science-first" (Kelsey, 2003) methods of nature conservation.

Acknowledgements

I would like to thank the people from Counties Cork, Kerry, Limerick and Mayo who generously gave up their time to take part in this study. They made this research possible, enjoyable, stimulating and extremely memorable. I am eternally grateful to each and every one of them. I must also thank the many others from throughout the country whose input into this study was equally crucial.

As every student knows, the most significant factor in pursuing a thesis is the support of a good supervisor. I was fortunate to work under the supervision of Hilary Tovey. Hilary provided critical input into the project from beginning to end: she dissected ideas with me along the way and read draft after draft of chapters in-the-making. During difficult periods she pulled me through and provided the encouragement I needed to get back on track. I cannot thank her enough for her guidance and support over these past few years. I must also thank Helen Thornbury in the Graduate Studies Office for her constant support and extraordinary kindness.

As a mother of two young children, one of whom was born during the course of this research, I depended heavily on the practical support of family and friends who frequently pitched in to provide babysitting services and other forms of practical support. My parents, Don and Anita Bryan were with me every step of the way. From childminding, to 'meals on wheels', washing, ironing and at times even counselling services, they provided unwavering support throughout the lifespan of this project. I will never be able to thank them enough. My mother-in-law, Marie and my wonderful friends Yvonne and Wendy also deserve special thanks for babysitting services at short notice, among other things.

Most of all, I must thank my husband Oisín for sticking with me! For holidays forgone, for so-called 'days-off' spent minding children, cleaning and cooking – thank you! For never doubting that I would one day finish this thesis and for being the one person wise enough *not* to ask me 'so are you nearly finished yet?' – thank you! I must also thank my children, Ciarán and Saoirse, for teaching me a few things about 'nature' (change, chaos, beauty, resilience..) and love.

This thesis was funded by an Environmental Protection Agency (EPA) scholarship.

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¹ The Annexes to these Directives are too long to include in full.

Abbreviations

BWI: Birdwatch Ireland

CAP: Common Agricultural Policy

DAFF: Department of Agriculture, Forestry and Food

DEHLG: Department of Environment, Heritage and Local Government

FIE: Friends of the Irish Environment

ICMSA: Irish Creamery and Milk Suppliers Association

IFA: Irish Farmers' Association

IPCC: Irish Peatlands Protection Council

IRDA: Irish Rural Development Association

IWT: Irish Wildlife Trust

KIO: Keep Ireland Open

NHA: National Heritage Area

NPWS: National, Parks and Wildlife, Service within the DEHLG (formerly Dúchas)

REPS: Rural Environmental Protection Scheme

SAC: Special Area of Conservation

SPA: Special Protection Area

SFP: Single Farm Payment

Chapter 1: Introduction

Section 1.1. Natura 2000

Protecting biodiversity ‘the variety of living organisms on earth’ (O’Riordan et al, 2002: 9), is now a significant aspect of international environmental policies. For the European Union and its Member States, biological diversity is considered a key route to sustainable development. Natura 2000, a network of ecologically important places across European Member States is the most ambitious EU biodiversity initiative to date. The network includes a wide diversity of terrestrial and aquatic habitats, encompassing an area of land and sea larger than any single Member State. Sites range from vast tracts of forestry, bog and coastal zones right down to small family farms or areas of scrubland.

The network is highly innovative in a number of ways. The very idea of a network of interconnected sites, rather than dispersed sites in isolation is novel in itself. An emphasis on site management *by* humans (rather than strict protection *from* humans) also signifies an important policy paradigm shift. The old “fortress conservationist” (Gbadegesin and Ayileka, 2000:89) narrative, in other words, has been replaced with a more integrated approach wherein human activities are no longer seen as necessarily detrimental to biodiversity and in many cases are deemed essential to its conservation.

The practice of nature conservation is thus taken out of ‘reserves’ and into new milieus as new actors (farmers, hunters, foresters, landholders etc) are enrolled in the process. While very much a science-based (or “science-first” (Kelsey, 2003)) conservation initiative in essence, Natura 2000 attempts to marry this with economic, social and

cultural considerations. With Natura 2000 we are understood to be 'living with nature'¹. It is an approach that promises new conceptualisations of the nature-society relationship.

Natura 2000 not only appears to blur the contours of the nature-society dichotomy, it also blurs the boundaries between the public and the private. The idea that biodiversity, our common natural heritage (i.e. a public value) can and should be protected through the designation of privately (as well as publicly) held land signifies a second policy paradigm shift (Laffan & O'Mahoney, 2004). Because designation brings with it a suite of potential (and frequently quite extensive) land-use restrictions, this intrusion into the private domain of the landholder has been a continual source of dispute and resentment.

In one sense Natura 2000 is just one part of a broader process of reinventing the countryside as part of the reform of the common agricultural policy (CAP) (Crowley, 2006). It is a process wherein new meanings are born for places, for people, for nature - and for relationships between them. It is a process wherein material nature is re-imagined and re-valued, frequently in more scientific terms, as new goals and visions are set for its future trajectory. In Natura 2000, one group's 'pest' or 'scavenger' can become another group's highly prized 'endangered species'. 'Land' is frequently reborn as 'landscape' as the 'producers of livestock' are re-cast as the 'producers of wildlife' (Crowley, 2006). In many cases these 'multifunctional' rural places, once centres of productionist agriculture, are re-designated as centres of conservation and consumption. They become the objects of 'the scientific gaze' (Tovey, 1994) for the purposes of ecological conservation and 'the tourist gaze' (Urry, 1995) for the purposes of leisure consumption.

¹ This is the title of the information booklet on Natura 2000 published by the Department of the Environment and Local Government (DEHLG) in Ireland. See Bibliography.

When people-place meanings and identities are crafted from afar and, moreover, are legally enforced, such meanings are perhaps inevitably contested. Equally contested, of course, are the real and perceived material restraints frequently arising from designation. Resentment is all the more palpable when changing conceptualisations of people-place relationships threaten existing livelihoods, lifestyles or cultural norms.

It is perhaps not surprising, therefore, that putting the Natura 2000 vision into practice across Europe has thrown up conflicts at many levels. From farmers resorting to hunger strike in Finland in the 1990's to Poland's more recent failure to comply with the process, implementing Natura 2000 has not been easy. Not one Member State met the original schedule for implementation set out in Habitats Directive (the network's founding Directive). Lack of political conviction, budgetary concerns and a reluctance to upset powerful vested interests at home were among the reasons for this foot-dragging.

In Ireland, Natura 2000 designation was so strongly contested by the national farming lobby that it became highly politicised (Laffan and O'Mahoney: 2004:12). The Habitats Directive was the only European Directive that received widespread public attention during the 'No to Nice' campaign in opposition to the Nice Treaty and its aftermath debate in 2001-02. It was also frequently used as a bargaining chip by the farming lobby in successive rounds of social partnership² agreements. (Laffan et al: 2004:12). Over the years, Ireland has received a suite of complaints (from 'reasoned opinions' to European Court of Justice rulings) for its failure to comply with all aspects of the Natura 2000 endeavour.

² Social Partnership is a form of neo-corporatism that evolved in Ireland from the mid-1980's onwards. See Chapter 6.

Conflict was not only experienced at national level but also felt locally at various 'flashpoints' around the country as the potential implications of designation began to emerge (Laffan et al, 2004). These site specific or place-based conflicts, often around issues of planning or land-use, featured regularly in both national and local media and these in turn fed into more politicised disputes at national level. These heated imbroglios were frequently framed in terms of particular species and habitats posing formidable threats to rural concerns, lifestyles and livelihoods. Blanket bog protection, for example, was seen to clash with sheep grazing and turf cutting practices while hen harrier birds of prey were seen as preventing windfarm and forestry developments. Other species and habitats of nature conservation interest from sand dunes and corncrakes to particular mussels, slugs and snails frustrated, curtailed and at times fully prevented the construction of a range of (often controversial) developments ranging from roads and golf courses to tourist developments and forestry.

While designation under Natura 2000 undoubtedly instigated country-wide concerns and disputes located in many urban as well as rural districts, there is no doubt that rural areas, particularly those in the relatively disadvantaged west were disproportionately affected. It is particularly ironic perhaps that the vast majority of designated sites (considered of high nature value) are located in poor quality agricultural lands where livelihoods are particularly vulnerable (Department of Agriculture and Food, 1999). In this respect O'Rourke asks

Is it just a co-incidence that nature has been particularly benevolent in these geographically disadvantaged areas or, as is commonly believed by the local people, is it simply a reflection of their own marginalisation and under-development? (O'Rourke, 2005:78).

While the manner in which Natura 2000 was transposed and implemented at Member State level varies considerably from country to country, one common complaint was the degree of consultation carried out with affected parties or the extent to which people on the ground were allowed to participate in the process. Some countries performed better than others in this respect. Ireland was noted as being among the least ‘participatory’ (O’Riordan et al, 2002:125). It was only through second-hand, often ill-informed media sources that most landholders learnt of the proposed designation of their lands. Few, if any, had a clear understanding of what designation would actually entail. In the absence of an effective public consultation procedure, misinformation and rumours - often propagated by the media – took on a life of their own. Unclear and sometimes conflicting information emanating from the state was seized upon by the anti-designation lobby who employed this to their political advantage. Some concerns (e.g. exaggerated land use restrictions) eventually turned out to be unfounded. The information vacuum that was allowed to develop was particularly fertile ground for politically-orchestrated scaremongering. An already mistrusting group of rural landholders became increasingly so.

In one sense, the farming community had a rather mixed experience of consultation. While officials within the main farming organisations were intensely involved in negotiations at state level (in particular around the issue of monetary compensation), most ordinary farmers on the ground enjoyed little or no direct communication from the state at either local or national level. Any information they did receive, it seems, emanated from the oft times rabble-raising media or the clearly disgruntled farming organisations. The extent to which these farming organisations fully represented the rather ‘mixed bag’ of affected landholders is also questionable. Not all affected

farmers, for instance, were actively affiliated with these organisations - nor indeed were all affected landholders primarily (or exclusively) farmers. Thus while these farming organisations presented themselves as 'the voice of affected landholders' the extent to which this voice was fully representative is highly questionable - and this in itself was part of the problem.

Conservationist groups were also aggrieved at being excluded from several rounds of negotiations between the Department of the Environment and the main farming organisations. Many highly experienced conservationists who had worked tirelessly in the field of conservation science and practice over the years clearly felt they had a legitimate stake in the process as well as a wealth of expertise that ought to be brought to the table. Many of those who had enjoyed a long history of involvement in the Natura 2000 project at European level, were clearly disturbed to find themselves side-passed at national level. Again this led to distrust in the states handling of the issue. Distrust on the part of conservationists, however, was in relation to what they perceived to be the state's 'cosy' relationship with farmers, or to put it another way, its reluctance to upset powerful vested interests. Whereas farming groups looked to the state to vent their objections to Natura 2000, conservationist groups looked directly to Europe as a means to ensure full state compliance with the process (Laffan et al, 2004).

To counter the farming lobby's self-portrayal as 'the voice of affected landowners', environmental/conservationist NGOs presented themselves as 'the voice of nature'. Clearly, however, the extent to which any group in society can vouch to speak objectively in this respect is highly questionable - and this was equally part of the problem.

The catch-all terms ‘consultation’ and ‘participation’ can of course mean many things, ranging from mere information provision to more deliberative and inclusive participatory practices. The Irish experience was one wherein even information provision in the most elementary sense was wholly inadequate. A variety of factors including budgetary and time constraints as well a culture of non-engagement within the relevant state authority appear to have been instrumental in this respect.

The absence of more meaningful participatory methods must also be understood in terms of the central role of science at the heart of the Natura 2000 project. In spite of its integrationist rhetoric, Natura 2000 is very much a top-down, “science-first” (Kelsey, 2003) [or “ecology-first”, (Stoll-Kleeman and O’Riordan, 2002)] conservation initiative. Its underlying methodology is premised on the supremacy of expert knowledge systems. The entire designation process, for example, begins with lists of species and habitat types considered worthy ‘of Community interest’ as decided by networks of pan-European ecological experts. From European right down to local levels, the dominance of a techno-scientific discourse permeates all aspects of Natura 2000. In such expert-led, technocratic fora, there is little room for other ways of knowing or relating to nature. Such an approach runs contrary to more deliberative and inclusive participatory methods.

Natura 2000’s attempts to integrate economic, social, and cultural factors in its decision-making processes are continually in tension with this scientific methodology.

Irrespective of competing land-use claims and counter-claims, Natura 2000 legislation states that the ‘favourable conservation status’ of a site or species must be protected, except in ‘exceptional’ circumstances. The bottom line, therefore, is a scientific decision

against which all other competing concerns and interests must be gauged. Exactly when, where, and how economic and social-cultural factors are to be taken into account has been the subject of much controversy (Scannell et al, 1999; Alphandéry et al, 2001).

There is a tension, in other words, between an “ecology first” or “people included” model of conservationism (Stoll-Kleeman et al, 2002), a tension largely emanating from ambiguities and contradictions inherent in the Habitats Directive (Pinton, 2001). This has been the source of much confusion. While conservationists claim that site boundaries are being ‘redrawn’ for socio-political (rather than scientific and thereby ‘objective’ and ‘impartial’) reasons (Clerkin, 2002) and insist that this runs contrary to the correct application of the Directive, landholders claim that the science-led designation process is completely at odds with the notion of a more holistic approach wherein socio-economic or cultural factors are taken into account. There are conflicts, in other words, about where the lines should be drawn between ‘nature’ and ‘society’ (Irwin, 2001), the rigidity or malleability of these boundaries and the extent to which science alone should be entrusted to devise them.

Natura 2000 science has come under criticism from various sources (Pinton, 2001; Ledoux et al, 2003; Waterton, 2002). In spite of the innovative policy-paradigm shifts previously mentioned its scientific methodology is somewhat out of step with more recent paradigm shifts within the science of ecology. According to Berkes (2004):

the science of ecology and the various fields of applied ecology seems to be in the midst of 3 conceptual shifts: a shift from reductionism to a systems view of the world, a shift to include humans in the ecosystem and a shift from an expert-based approach to participatory conservation and management (Berkes 2004, 622; see also Levin, 1999; Bradshaw & Bekoff, 2001; Ludwig, 2001).

While Natura 2000 undoubtedly signals a significant shift towards a more 'humans in the ecosystem' approach (at least in principle), its overall philosophy remains at odds with the other two conceptual shifts. Its "no net loss" policy (Ledoux et al, 2003) is based more on a static and reductionist understanding of ecosystems than a more dynamic systems approach. As Ledoux et al argue, 'the system of designated areas and no-net-loss either seems to ignore dynamic ecosystem changes [.....] or fails to make sufficient allowance for natural change, or for co-evolutionary feedback effects' (Ledoux 2000: 257, see also Turner et al, 1998). Also, as previously mentioned Natura 2000's "science-first", expert-led methodology does not sit easily with more participatory styles of ecosystem management. While European Union policy statements strongly advocate local participation in site designation and management, the manner in which Natura 2000 is transposed and implemented nationally is largely a national decision.

The corollary of all this is that the policies and practice of Natura 2000 in Ireland (as indeed in many other European Member States) are somewhat out of step with recent paradigmatic shifts in ecological thinking. These new conceptualisations of social-ecological relations are well articulated in a number of inter-disciplinary ventures and networks cross-cutting both the natural and social sciences. In such fora, new approaches to social-ecological knowledge embracing the complexities, uncertainties and subjectivities of nature-society relations are gaining momentum. Natura 2000 in Ireland as of yet, however, is largely oblivious to such developments.

At the time of writing, the politicised conflict at national level appears to have subsided perhaps partly quelled by a bilateral agreement with the main farming organisations. Site specific conflicts, however, often around issues of planning or land-use continue to play

out at local level. On the part of landholders there remains a general resistance to Natura 2000 on the ground. Such resistance, however, is frequently negotiated in terms of livelihood vulnerabilities and other aspects of local well-being including issues around people-place relationships and identities.

Section 1.2. Thesis Objectives and Outline of Content

This study is funded by an Environmental Protection Agency (EPA) scholarship based on a proposal to explore aspects of the conflict surrounding Ireland's contribution to Natura 2000. As the research progressed my initial interest in exploring conflict developed into a broader interest in exploring Natura 2000 as a 'line-drawing' exercise between 'nature' and 'society' (or the 'natural' and the 'social') (Irwin, 2001). The study explores the dilemmas and challenges facing those attempting to devise and manage these boundaries and the resistance of those attempting to challenge them.

Objectives

The overall objectives of the study are:

1. To develop a sociological understanding of Natura 2000 as experienced in Ireland.
2. To contribute towards less bounded and dichotomous sociological understandings of nature-society relations.
3. To make recommendations, where possible, for less divisive and more effective forms of nature conservation.

Outline of content

Part I

The thesis is divided into two parts. The Chapters in Part I (Chapters 1 to 4) introduce and discuss Natura 2000 at EU level and provide the main theoretical arguments that will be drawn on in Part II. Following this introductory Chapter, **Chapter 2** outlines the background to and the context of Natura 2000, which is conceptualized as both a place-making and a line-drawing exercise, as the boundaries between the ‘social’ and ‘natural’ were painstakingly negotiated at EU level and areas were simultaneously zoned as ‘habitat’. **Chapter 3** moves on to consider how sociology (a discipline premised on understanding society) and ecology (a discipline premised on understanding nature) have traditionally tried to ‘draw’ or ‘pin down’ these shifting ontological and epistemological boundaries. Recent paradigm shifts in both disciplines have problematised these boundaries as well as those between ‘lay’ and ‘expert’ ways of knowing and relating to nature. New, integrative, multi and trans-disciplinary approaches are increasingly attempting to dissolve strict nature-society boundaries, a development associated with a fresh focus on the concept of ‘place’ as a potentially promising integrative concept. Through exploring this concept of place more closely – a concept that is key to understanding Natura 2000 - **Chapter 4** considers three sociological accounts attempting to transgress the realist-social constructionist divide, and considers their potential utility to this thesis. In this Chapter, I argue that a comprehensive understanding of Natura 2000 as experienced in Ireland requires us to draw on three sociological accounts: namely, a Sociology of Scientific Knowledge (SSK), Actor-Network-Theory (ANT) and a dwelling perspective - all of which provide useful insights into nature-society relationships and issues relating to knowledge, boundaries and place.

Part II

Part II begins with a Chapter outlining the research methods employed (**Chapter 5**). **Chapter 6** considers the dilemmas and conflicts ensuing from the Natura 2000 line-drawing and place-making process at national level. This Chapter and the case study Chapters that follow show how these nature-society boundaries are negotiated, devised and/or managed in fields of competing interests, identities and expertise, all underpinned by relations of power. We will see how the cultural boundaries of the science (Gieryn, 1999) entrusted to devise these lines is challenged by those who wish to breach or expand them and defended by those who wish to contract and solidify them. The science applied in the end is the context specific, contingent outcome of all manner of socially negotiated phenomena, from legal requirements to political power plays (Gieryn, 1999).

The case study Chapters, **Chapters 7 and 8** also explore some of the emergent dilemmas apparent in these line-drawing exercises at local levels. Both case studies consider the challenges faced by those attempting to draw or manage these boundaries and the resistance of those seeking to challenge them. In drawing geographic and cognitive boundaries for hen harrier birds of prey, the inherent uncertainty of this process plagued the decision-making process and intensified conflict. In the Owenduff Nephin Complex, managing and maintaining similar boundaries was complicated by the particular challenge of managing commonly-held land through policy prescriptions aimed at individuals instead of communities. Both cases studies reveal how the particularities of places can thwart management objectives based on universal, standardised solutions, and how 'nature' continually exercises an agential role that can effectively frustrate even the best attempts to control or manage it.

The case studies explore two phases in the place-making process: pre and post designation, or in other words, the devising of boundaries and attempts to manage them. Thus while **Chapter 7** explores Natura 2000 place-making as 'habitat' under construction and the overt, politicised forms of resistance that this engendered, **Chapter 8** considers more subtle forms of 'everyday resistance' (Scott, 1985) at the post-designation stage. We will see how on-going 'everyday' resistance occurs as fundamental aspects of the line-drawing exercise remain contested and certain place-making assumptions are continually challenged. Drawing on the findings of *both* case studies, Chapter 8 ends with a section exploring the unevenly felt implications of Natura 2000 at local level and how this has resulted in some negotiated support for designation. This negotiated support is nevertheless tainted with an underlying resistance to place translation.

In returning to the theme of place as a bridging or integrative concept, **Chapter 9** focuses on a central source of conflict between local people and Natura 2000: namely the clash between place as habitat and place as experienced locally. Drawing on relational understandings of place, the Chapter explores: how these 'hybrid' places were co-constructed by people (not least local people) over time; how they were translated into 'habitats'; and all that was 'lost in translation'. It further compares and contrasts the interpretative frames employed by 'lay' and 'expert' 'knowledge agents' (Wynne, 1996). The Chapter ends by considering an interesting similarity in terms of how both nature conservationists and local people articulate their concerns for the future of these, in one sense or another 'special' places. Chapter 10 discusses the findings.

Chapter 2: Natura 2000 Line-Drawing and Place-Making at European Level

This Chapter presents the origins, policies and practices of Natura 2000. After an opening section introducing biological diversity and the European Directives established to protect it, Section 2 shows how Natura 2000 emerged at the confluence of EU environmental and agricultural policies as part of a broader process of re-inventing the countryside. Under Natura 2000 then, some places were 're-branded' or zoned as 'habitats' (Green, 2005, Campbell, 2005). Section 3 traces the emergence of Natura 2000 as the shifting boundaries between 'nature' and 'society' were negotiated and temporarily 'settled', however ambiguously. While line-drawing in Natura 2000 rests heavily on the authority of science, section 4 reveals the fluidity of the boundaries between 'science' and 'non-science'. The final section discusses some of dilemmas and tensions experienced when attempting to devise and manage nature-society boundaries.

Section 2.1. Natura 2000: Biological Diversity and the Habitats Directive

The signing of the Convention for Biological Diversity (CBD) at the Rio Earth Summit in 1992 brought concern for our planet's dwindling biological diversity to global, public attention as never before. Unlike previous conventions which focused on specific biodiversity concerns (such as the RAMSAR convention on wetlands, and the Convention on International Trade in Endangered Species (CITES)), the CBD endeavored to present an overarching framework for global biodiversity management. With Rio, then, biodiversity, as a relatively 'new' environmental concern, was

effectively catapulted onto the global policy-making arena. Under the CBD, over 150 signatory states committed themselves to significantly reducing the rate of biodiversity loss by 2010. Questions of species loss, habitat destruction and invasive species - issues that 10 years prior were largely perceived as the concerns of marginal communities of ecologists and conservation biologists - had become an increasingly legitimate aspect of many governments' policies.

Biological diversity (or biodiversity in short) is defined under the Convention for Biological Diversity (CBD) as 'the variability among living organisms from all sources including inter alia terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of eco-systems'(UNEP, 1992). In very simple terms, then, biodiversity refers to the variety of living organisms on earth, a variety that is measured at three levels: at the level of ecosystems or habitats; at the level of species; and at the genetic level (See O'Riordan et al, 2002:9).

As the charter within which nature conservation and other issues relevant to biodiversity should be addressed on a worldwide basis, the CBD set out three main objectives: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising from the use of genetic resources.

While the CBD was agreed in 1992 there is an on-going process to further elaborate what is needed to implement it. One central factor in this respect is that each contracting party (these include individual states but also inter-state or regional organisations, such as the EU (then ECC)) is required to develop strategies, plans or programmes aimed at achieving the Convention's stated objectives, and to integrate biodiversity conservation concerns into a wide range of policy areas (see Article 6 of the CBD). Ireland, for example, (at least in principle) does this through its National Biodiversity Strategy (Department of Arts, Heritage, Gaeltacht and the Islands, 2002).

In ratifying the Convention, Ireland along with all EU Member States and EU itself as an institution, has agreed to refrain from acts which could defeat the objective and purpose of the convention. Ratification, however, does not have a binding effect. Signatory parties are thus expected, but not legally obliged, to pursue the objectives of the convention in their own jurisdictions.

The EU Habitats Directive, adopted in the same year as Rio, is the main community instrument safeguarding biodiversity. While often perceived as a response to the Convention, the Directive had already been under discussion throughout the 1980s as part of the EU environmental action plans. It was 'essentially the result of lobbying by wildlife groups nationally and Europe-wide, together with their technical advice as to what species, and particular habitats, provide the best protection for the range of wildlife regarded as vital for European biodiversity' (O'Riordan et al, 2002:122). The objective of the Habitats Directive is 'to contribute towards ensuring biodiversity

through the conservation of natural habitats of wild fauna and flora' in the European territory of the EU Member States (Council Directive 92/43/EC) (see Appendix 1).

It attempts to do this primarily through the establishment of Special Areas of Conservation (SACs) for natural habitats and wild flora and fauna considered 'of Community interest' to biodiversity. Its forerunner, the 1979 Birds Directive, establishes sites known as Special Protection Areas (SPAs) for wild and migratory birds (see Appendix 2). The Habitats Directive, then, brings all of these conservation sites together through the establishment of the Natura 2000 network. This EU-wide ecological network of designated sites (both SACs and SPAs) is considered to be the centrepiece of EU nature and biodiversity policy. As stated by former EU Commissioner for Environment, Margot Wallstrom, 'the aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats' and to contribute as such 'to the general objective of sustainable development' (European Commission, *Managing our Heritage*, n.d.).

Section 2.2. Natura 2000 place-making at the confluence of EU environmental and agricultural policies

EU Nature/Biodiversity Policies

Before looking more closely at Natura 2000, it is important to place this in the context of the EU's evolving nature/biodiversity and agricultural policies, and more specifically the convergence of those two policy agendas (Visser et al, 2006).

EU nature conservation initiatives date back to the first Environmental Action Programmes in 1973 when nature conservation priorities were first established. Progress in this respect has been gradual. It was ten years before specific financial instruments were created for nature conservation. Nonetheless, since 1973 five more Environmental Action Programmes (EAPs) have followed and we are currently on the 6th. This current policy programme (running from 2002-12) lists nature and biodiversity protection as one of its priorities. The European Biodiversity Strategy provides a framework for developing more specific community policies and instruments. The strategy is complemented by a series of action plans (e.g. for agriculture, national resources and fisheries) which are considered tools for integrating biodiversity into policy making and activities. This strategy and its accompanying plans thus satisfy EU obligations under Article 6 of the CBD.

Successive revisions of the Treaties, in particular the 1997 Amsterdam Treaty, have strengthened the legal basis of this policy. The Amsterdam treaty introduced 'sustainable development' as an overarching objective of EU policies. It states that the EU seeks to 'promote a harmonious, balanced and sustainable development of economic activities'. It also signaled the emergence of an environmental incorporation mandate by stating that: 'environmental protection requirements must be integrated into the definition of community policies and activities (...) in particular with a view to promoting sustainable development'. These laudable goals, however, are thwarted by two fundamental problems: sustainable development remains an ill-defined, superficial

and arguably self-contradictory concept; and the 'policy integrationist' rhetoric for achieving it remains an illusive aspiration.

Sustainable development is a notoriously slippery concept. Based on an assumed interdependence between economic growth and environmental protection (an assumption that is at the very least questionable), it presents us with a 'unitary discourse' that we can all ascribe to without any real threat or challenge to the status quo. Indeed, as Irwin points out 'it is very difficult to be *against* it' (Irwin, 2001: 43, author's emphasis). Employed by conservationist groups, business interests, politicians and bureaucrats alike, the concept is stretched to the point of being meaningless. The World Commission on Environment and Development (1987) defined it as 'development that meets the needs of the present without compromising the needs of future generations to meet their own needs' (World Commission on Environment and Development, 1987). Beyond this, however, what this actually entails and the extent of change that might be required to achieve it is rarely discussed. Leaving aside quantifying the needs of future generations for a moment, drawing a line between the needs of the many and desires of the few in the present day is far from straightforward.

Integrating environmental protection strategies into the definition of EU policies and activities has also proven problematic. The EU Biodiversity Strategy states that its four biodiversity action plans are 'tools for integrating biodiversity into policy making and activities' (European Commission, 1998). While there has certainly been some progress in this respect, the extent to which they actually achieve this is questionable.

There are policy conflicts at every turn. A World Wide Fund for Nature report highlights the way agricultural subsidies and payments under EU Structural Funds are obstructing the objectives of Natura 2000 (WWF, 1999).

As regards agricultural policies, moreover, it is often suggested that agri-environment initiatives such as Ireland's EU funded Rural Environmental Protection Scheme (REPS) (a scheme whereby payments are made to farmers who farm in accordance with certain environmentally friendly principles, see Chapter 6) merely tinker with the existing system by encouraging a limited form of tokenistic nature conservation in some areas while allowing productivist agriculture to continue unabated elsewhere (Tovey: 1997).

Nonetheless, some progress has been made. Cross-compliance measures under the Single Payment Scheme for farmers, for instance, now require a minimum of certain environmental standards as a condition for receipt of EU monies. Mechanisms devised to incorporate environmental concerns into other policy areas include Strategic Environmental Assessments (SEAs) and Environmental Impact Statements (EIAs). SEAs are assessments of the effects of certain plans and programmes on the environment (including certain programmes relating to forestry, fisheries, energy, tourism, telecommunications and so on) (see EU Directive 2001/42/EC). Environmental Impact Assessments are systematic examinations of likely impacts of specific development proposals in specific sites (See Directive 97/11/EC amending Directive 85/337/EEC).

One major obstacle to the effective integration of environmental concerns into other policy areas relates to the multi-level organisational structure of the EU polity.

Drawing on Jordan (2001), O’Riordan et al (2002) have argued that:

the European Commission does not have a strategic sustainability nerve centre in its pattern of policy making. There is no mechanism for bringing the various innovative interpretations needed of economic health, environmental integrity and social well-being (p118).

Another major hurdle to integration is the unequal forces of political power underpinning certain policy directions while undermining others (O’Riordan et al, 2002: 118, see also Gee, 1997). The aforementioned WWF report describes how several far more powerful policies (such as transport, infrastructure and forestry) are continuing to push land uses and other economic activities in an unsustainable direction (WWF, 1999:15). One major obstacle in this respect is the EU’s inability to incorporate fiscal measures without the unanimous support of its 27 Member States (O’Riordan et al: 118 see also Gee 1997: 97-103). Because those likely to lose most from any ecological tax reform (such as oil, gas, paper, cement, agriculture and other powerful lobbies) frequently ‘hold the ear’ of finance ministers who negotiate these decisions at EU levels, powerful lobby groups have an effective veto in this crucial area (O’Riordan et al, 2002: 118).

EU Agricultural Policies

The Natura 2000 project must also be understood in the context of an evolving EU Common Agricultural Policy, and more particularly, the convergence of that policy

agenda with Natura 2000 objectives and DG environment's policy agenda more broadly (Visser et al, 2006).

After 2 decades of commodity production-linked support for EU farmers, by the late 1980's the over-production of agricultural produce was becoming problematic on several fronts. As a suite of agriculture related environmental concerns (including the eutrophication of water, soil depletion and habitat loss) became a source of concern for many across the EU, the financial implications of heavily subsidised food production became a pressing issue at institutional level. Crowley explains how:

'Environmentalists' views were adopted by the EC in the eighties because their goals synchronized with the goal of cutting the funding that went to agriculture. Economic efficiency was thus framed in ecological terms (Crowley, 2006:132).

At the same time as all this, pressure to curb EU market interventionism began to mount at each successive General Agreement on Tariffs and Trade (GATT) (now World Trade Organisation, (WTO)) round of negotiations where the CAP was increasingly seen as an unacceptable barrier to global trends towards market liberalisation. Across Europe public sympathies for EU farmers (perceived to be 'milking the system' for private gain while denigrating the environmental 'commons') were also wearing thin. Environmentally, politically, financially and socio-culturally then, the old system was no longer seen to be viable. A coalition of concerns and interests thus converged to necessitate the reform of the CAP and the birth of the agri-environment.

The emergence of the agri-environment began with the McSharry reforms of 1992. Here, for the first time in 3 decades of interventionist support for farmers, agri-environmental services (payments for farming measures designed to impact less on the environment) were publicly rewarded. Following this major turning point, successive CAP reforms saw agri-environment measures continually gain in importance. With Agenda 2000, the Rural Development Regulation (1257/99) was introduced as the “second pillar” of the CAP. Under this second pillar integrated rural development measures were put on equal footing with direct and indirect mainstream support, and cross-compliance and modulation were introduced - all aimed at promoting sustainable rural development (Visser et al, 2006:2).

Ongoing pressure to reform the productionist “first pillar” resulted in Regulation 1762/2003 which decoupled subsidies from agricultural output from 2005 onwards. This means that farmers now receive a once-off annual farm payment (Single Farm Payment or SFP) for which they need to comply with certain environmental standards (i.e. cross-compliance). In the meantime, the “second pillar” continues to develop. From January 2007, a new rural development regulation (regulation 1698/2005) ‘explicitly integrates the hitherto separate Natura 2000 in an effort to come to a unified strategy for sustainable rural development’ (Visser et al, 2006: 3).

Central to this overall strategy is the concept of a ‘multi-functional countryside’ (Crowley, 2006:76). This has been described as countryside dedicated to ‘the production of renewable raw material for non-food purposes or the energy sector, rural

tourism, marketing of high-quality produce or the preservation of our cultural heritage' (Fischler, 1997: 36). This new vision reflects policy concerns about the transition from a productivist and protectionist model to open competition on the world market and a new concern for food security, environmental conservation and social welfare in the countryside (Crowley, 2006:76; see also Symes, 1992).

Natura 2000 as Place-making

All of these policy developments have enormous implications for changing people-place and people-nature relationships on the ground. The diversity of ways in which societies relate to their physical environments has been explored by Urry, who identifies four main forms of 'interface':

stewardship of the land so as to provide a better inheritance for future generations living within a given local area; *exploitation* of land or other resources through seeing nature as separate from society and available for its maximum instrumental appropriation; *scientisation* through treating the environment as the object of scientific investigation and hence of some degree of intervention and regulation; and *visual consumption* through constructing the physical environment as 'landscape' (or townscape) not primarily for production but embellished for aesthetic appropriation (Urry, 1995: 174).

Rather than suggesting a definitive shift in emphasis from any one form of the above to another, recent EU agri-environment policy changes suggest rather a zoning of places in respect of their relative functions and relationships with people.

As previously argued, policy changes instigated back in the 1980's were to some extent underpinned by an economic rationale. During this period the EU began to realise that in cold, harsh economic terms it had considerably more farmers than it (i.e its *economy*)

needed. To remain competitive in the global market, new functions had to be created for 'surplus populations' (Tovey, 1994) of less productive farmers. Crowley (2006) drawing on Commins (1990) explains how:

From as early as 1990, a pattern of land use was being established throughout the EU, including Ireland, 'whereby a category of productive farms co-exists with a growing proportion of holdings that must be "allocated other roles" as "resource managers" in the rural economy' (Crowley, 2006 citing Commins, 1990).

Following Urry's four main forms of 'interface' then, we can see how some places, formerly centres of exploitation in the form of intensive agricultural production of the 'land', for instance, were re-zoned at EU level as centres of scientific interest (in the form of 'habitats') and visual consumption (in the form of 'landscapes'). A process began whereby less productive farmers were enrolled as managers of wildlife (instead of livestock), caretakers of landscape (instead of land) – and/or indeed as producers of renewable energy and niche environmental or cultural heritage products, while providing all manner of amenity and recreational services. Under both eras of CAP and CAP reform respectively however, prior *local stewardships* of these places, it seems, were under-acknowledged while the ramifications of each policy turn on pre-existing forms of local stewardship are highly significant (as we will see in Chapters 8 and 9).

Natura 2000 is thus in one sense part of a broader place-making exercise at European level as some rural, often 'peripheral' places are reconstituted as 'habitat' by upstream forces from further afield. Campbell argues that:

...with the new global rationalisations of food economies (Goodman, 2002), many places have become designated as appropriate for biodiversity rather than agriculture and their post-productionist regional economic futures have been

planned with a view to exploiting their landscapes and cultural heritage (Campbell, 2005:298).

Thus under Natura 2000 (and the reform of the CAP more generally) many rural areas are 'regionally repackaged' in this way (Campbell, 2005:298, see also Green, 2005).

This repackaging can be extended to entire countries as Ireland is sometimes alluded to as "the green treasury of Europe" (Schouten, 1994, cited in Visser et al, 2006:2) just as Slovenia has been described as a 'biotic park' in that 35% of the entire country was recently designated under Natura 2000 (Boh, 2004:1). While redefining relatively remote and depopulated areas as sites of natural significance can be seen as a strategy to increase their 'viability', Green's study of the 're-branding' of Epirus in Northwestern Greece (from "hostile backwater" to "natural wilderness") finds that the process effectively reinforces 'past hierarchies distinguishing more marginal (and more 'natural') places from more central (more 'cultural') places' (Green, 2005:abstract).

Section 2.3. The establishment of Natura 2000: Negotiating boundaries between Nature and Society

The 1979 Birds Directive was the first piece of European legislation enacted to halt the decline in species, in this case wild birds. This was effectively a response to a decade of mounting pressure from European citizens and conservationist NGO groups regarding the negative impact of shooting, pollution, drainage and other land-use changes on wild bird populations. Under this Directive, Member States were obliged to take measures to maintain a sufficient diversity and area of habitats for the 175 species of birds listed in Annex 1 of the Directive. While the Birds Directive lays down a range of protective

measures for the protection and management of all wild birds, a key element is habitat protection.

This Directive received a very mixed reception. While for some countries it was unproblematic in that it simply reinforced existing legislation, for others including the French, Spanish and Italians, the 'potential threat to the cherished cultural practice of shooting wild birds, especially song birds, led to much opposition and non-compliance' (O'Riordan et al, 2002: 120).

The Habitats Directive of 1992 had wider ambitions. Focusing on all manner of species and their habitats, it set out to establish an ecological network with a uniform legal framework for all sites. The Directive identifies over 200 habitat types and 700 species of plants and animals considered of 'Community interest': Annex I lists natural habitat types (e.g. from blanket bogs to coastal lagoons) and Annex II lists animals and plant species (e.g. from the bottle nosed dolphin to the Killarney fern). These are further divided into priority and non-priority species and habitats (priority meaning those in immediate danger of disappearance). On the basis of these lists, Member States are obliged to designate Special Areas of Conservation and to maintain them 'at favourable conservation status' (see further ahead).

Both Directives then effectively create protected areas or designated places of ecological significance. While the latter Directive supercedes the former in many respects, both follow same structural logic. As Linehan points out, 'the broad structure

of European provisions on protected areas is to firstly lay down the *requirement to designate* or establish the protected area in question and then to lay down the particular control or *framework for control* which is to operate within that type of protected area' (Linehan, 2005: 7, emphasis added). Lines between nature and society, in other words, must be first drawn and then controlled, managed or protected.

Unlike the more ambiguous text of the Habitats Directive (to which I will return later), the original Birds Directive was worded more definitively, outlining 'clear' and 'unqualified' obligations to avoid pollution or deterioration of the special areas 'or any disturbance affecting birds within them' (Linehan,2005:7). The lines between nature and society were drawn rigidly: the natural world was afforded strict protection from the social world. Difficulties arising on foot of subsequent European case law, however, resulted in the moderation of this more definitive text, followed by the less certain and more imprecise text of the Habitats Directive.

The Birds Directive's more definitive line-drawing between 'nature' and 'society' was challenged at an early European Court of Justice (ECJ) Decision (known as the Leybucht Dykes Case C-57/89). In this case German authorities proposed modifying a designated SPA on the grounds that the reinforcement of a water dyke in the Leybucht Harbour was necessary to prevent flooding to the point of endangerment of human life. Attention was drawn, therefore, to problems surrounding the original stringent controls disallowing all forms of habitat modification in all circumstances. The ECJ ruled that modification to the site could only be justified on exceptional grounds and 'for such

exceptional grounds to exist there had to be a public interest superior to the Birds Directive's ecological objectives' (Linehan, 2005: 9). While in this case such exceptional grounds clearly existed, in its overall interpretation of the case, the ECJ crucially held that 'economic and recreational interests' could not be interpreted as 'exceptional'.

As the implications of this landmark case became apparent, political pressure grew to change the original unqualified controls within the Birds Directive so as to take such exceptional factors into account. This had obvious implications for the subsequently drafted Habitats Directive which, when it was eventually passed in 1992, contained provisions that permit interference within *both* SPAs and SACs on exceptional public interest grounds *including*, in some instances, economic and social considerations. Under the all encompassing Habitats Directive then, SPAs and SACs are subject to the same less stringent, although highly ambiguous controls as outlined in Article 6 of the Habitats Directive. The lines between 'nature' and 'society' were thus drawn more flexibly but also, as we will see later, more ambiguously.

A central concern of this Chapter is to explore the science upon which nature-society line drawing is premised. This involves asking why some species and habitats were chosen as worthy of conservation and not others; and what steps need to be taken to protect them. Before doing this I will describe the procedural steps involved in designating sites under Natura 2000, an understanding of which is necessary to the discussion that follows.

Steps in the Designation Procedure

Under the Habitats Directive there is a 3 stage procedure for SAC designation (see Figure 1).

Stage 1

The Annexes to Habitats Directive list generic 'habitat types' and 'species' considered valuable or of 'Community interest', as drawn up by networks of ecological experts across the EU (see Section 4). On consideration of these lists, Member States must devise national lists of 'proposed Sites of Community Importance': sites hosting the flora, fauna and habitats deemed 'of Community interest'. These must be chosen in line with criteria set out in Annex III, such as degree of representativity, the quality of the habitat, the size and density of the population of the species concerned, the degree of isolation of the species relative to its natural population range, surface area occupied and so on. The lists are then transmitted to the Commission to consider and review. Each proposed site on the list must be accompanied by a detailed Natura 2000 form presenting an overall synopsis of the site and the grounds for its inclusion in the network. These standardised forms enable the Commission to judge the merits of each case (Scannell et al, 1999:67).

Stage 2

On the basis of these national lists and in collaboration with Member States, the Commission then adopts lists of 'Sites of Community Importance' (SCIs) broken down

into bio-geographical regions, on the basis of a European biogeographical regions map. Ireland is part of the Atlantic region together with the UK, the Netherlands, parts of France, Belgium, Spain and Germany. This crucial task of defining the definitive lists of sites is carried out in collaboration with ecological experts from the European Topic Centre on Nature Protection (ETC/NPB) based in Paris, a 'topic centre' of the European Environment Agency, which is an advisory body to the Commission. Representatives of the ETC/NPB and the Commission organise biogeographical scientific seminars 'to evaluate the proposed lists with independent scientific experts chosen by the ETC/NPB, European NGO experts appointed by the European Habitats Forum and representatives of Member States concerned' (Laffan et al: 2004: 7, Scannell et al, 1999:77). In some instances, the inclusion of additional sites considered 'exceptional' is recommended by the Commission. Any such recommendation must be accompanied by scientific evidence vouching for their ecological worthiness.

Stage 3

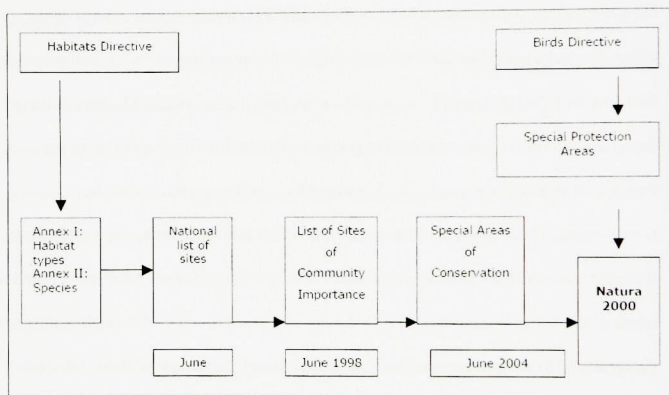
Once a site is selected as a SCI, the terms of the Directive state that the Member State must formally designate it as a Special Area of Conservation (SAC) within six years. During this period, 'conservation measures' must be put in place to ensure that these sites are maintained at, or if necessary restored to, 'favourable conservation status'. It is important to point out, however, that while EU Directives stipulate certain ends to be met, there is a large discretionary element in terms of how these are achieved. Under the Habitats Directive, Member States can choose to employ management plans and/or statutory, administrative or contractual measures. Thus while all EU Member States

are legally obliged to ensure that the sites in their jurisdiction are maintained at a 'favourable conservation status', there is considerable variety in terms of *how* this is being attempted across Europe. As I will explain later, there are also interpretation difficulties with respect to what this actually means and how to ensure it.

SPAs

The procedure for designating sites as Special Protection Areas (SPAs) under the Birds Directive is less convoluted. The Directive requires Member States, among other things, to designate SPAs for birds requiring special attention, including vulnerable and rare species listed in Annex I and migratory species. It also obliges Member States to designate wetlands of international importance. Under this Directive all sites are designated in a single phase by the Member States without reference to the Commission. These are then directly incorporated into the network. The Commission, however, can and does seek to ensure that the areas designated are adequate within the terms of the Birds Directive (DEHLG, *Living with Nature*, n.d.). Although authority to designate SPAs rests at national level, Member States 'cannot avoid their Article 4 obligations.....through failure or delay in classifying an area as a SPA' (Linehan, 2005:7). This was established at a European Court of Justice (ECJ) ruling against Spain (Case C-355/90). In this case, Spanish authorities had allowed a range of 'damaging activities' to take place in the Santona Marshes area. Although the area had not been designated as a SPA, the ECJ found this to be 'irrelevant' (Linehan, 2005:8). It ruled that credible scientific evidence existed to confirm that the place *ought* to have been designated: it was home to sufficient quantities of Spoonbill, listed under Annex I

of the Birds Directive. The ECJ also adjudicated that the list of Important Bird Areas (IBA) as produced and regularly up-dated by Birdlife International will be acknowledged as the authoritative, scientific basis in declaring SPAs. The choice of an IBA is based on numbers of birds, using what is known of the size of a bird population and how it has been changing. Thus while the task of 'line-drawing' initially rests with Member States it can be contested by higher 'line-drawing' authorities.



Source: Taken from Natura 2000 Newsletter 1996, Issue 1, DG Environment

The timetable envisaged for the 3 step designation process fell markedly behind schedule. Not one Member State met the June 1995 deadline for the selection of national lists of sites and it was two years later before some limited progress was made in this respect. In 2001, Germany, Greece, France, Portugal, Belgium, Italy and Ireland were all reprimanded by the Commission for their failure to produce complete

lists of proposed SCIs (O’Riordan et al, 2002:124). Among the reasons for this foot-dragging were lack of political conviction, budgetary concerns and a reluctance to upset powerful vested interests at home. Following a reasoned opinion by the European Commission, the European Court of Justice pronounced judgment on Ireland on 11 September 2001. As late as 2006 Ireland was still found to be ‘inadequate’ in terms of its designation of SPAs.

Section 2.4. Natura 2000 Science

Establishing the Annexes

The species and habitats ‘annexed’ under the Habitats Directive were drawn from a hierarchical classification of European habitats devised by the CORINE Biotopes project in 1989. As part of a broader environmental research programme, the CORINE Biotopes project’s aim was to identify and describe biotopes and habitats ‘of major importance’ so as to provide a working database to facilitate biodiversity policy-making (European Communities, 1991). The project, which took place over several years, involved the extensive input of teams of national experts from the various Member States.

Annexes to the Habitats Directives (and Annex I in particular) were heavily based on the CORINE hierarchical classification system (which was the only existing classification at European level). On the basis of this, the Commission drew up draft lists of species and habitat types considered to be ‘of Community interest’. After several rounds of discussions with national experts this draft list eventually resulted in the final versions published as Annexes to the Directives, which includes references to

the habitat type codes used in the CORINE Biotopes Technical Handbook). The Annexes to the Birds Directive were drawn up in the 1970s based on input from ornithological experts, particularly those associated with Birdlife International.

The inventories of birds, habitat types and species annexed to both Directives (on the basis of being considered worthy or in need of protection) then, were essentially devised on the basis of the combined scientific and technical expertise of networks of ecologists, botanists, marine biologists and other specialists across Europe. The Directives are thus fundamentally underpinned by a “science-first” (Kelsey, 2003) conservation methodology with science continually cited as the bedrock of the entire endeavour. The methodology for actual site selection by Member States, as we will see later is based exclusively on ‘scientific criteria’ and the authority of science is continually appealed to in the event of disputes at EU, national and local levels.

Although science is frequently presented as the embodiment of nature, the boundaries between science and policy, facts and values (and of course nature and society) are less definitive than Natura 2000 rhetoric would appear to suggest (see Chapters 3 and 4). Studies exploring CORINE and Natura 2000 processes of knowledge production highlight the ambiguities, uncertainties and value-judgments implicit in these processes (Pinton, 2001; Waterton, 2002; van Oudheusden, 2005).

Van Oudheusden shows how the CORINE Biotopes classification system took place at the boundary area of science and policy. She explains how:

The project was to fulfill political aims more than scientific ones. It has been used later for policy purposes, never again for purely scientific purposes (van Oudheusden, 2005:6).

According to Pinton (2001) this pivotal project (the central reference document in devising the Habitats Directive) 'was not approved by all of the scientists' (ibid: 337). A reading of the scientific papers relating to the devising of these lists, she argues, reveals 'widely varying levels of taxonomic perspectives' and 'leaves the feeling that the scientists do not unanimously see them as scientifically sound' (ibid: 337). The scientific terms within the Directive thus remain 'vague' and the methodology underpinning them is ambiguous (ibid: 339). The scientific basis of Directive, she concludes is 'uncertain, incomplete and controversial' (ibid: 329).

The scientific rationale behind the choice of habitat types and species 'of Community interest' was far from clear. As Pinton ask 'were the habitats and species on the list chosen because of their rarity, meaning that they are remarkable or because of their ecological function? What "referential" is used for them and what justifications were given?' (Pinton, 2001:337). To fully understand the significance of this question we must consider an evolving debate within ecology

Berkes (2004), Adams (2003), Callicot et al (1999), among others have discussed recent conceptual shifts in ecology, one of which being a shift from reductionism to a systems view. The shift towards a systems view entails a move away from the old 'command and control' approach based on 'linear cause-effect thinking' and 'mechanistic views of nature' as 'productive, predictable and controllable' (Berkes,

2004: 622). This new systems approach to ecology, often termed 'non-equilibrium' ecology, dismisses the notion of any natural equilibrium or 'balance of nature'. Nature, from this perspective, is dynamic and highly variable (see also Adams, 2003:228). Callicot et al (1999) refer to this new thinking as 'functionalism' and contrast this with the old school of 'compositionalism'. Compositionalists, they argue, focus more on protecting the component parts of ecosystems (from human interference) whereas functionalists focus more on protecting the processes or functions of ecosystems (of which humans are considered a part).

Science-based criticisms of Natura 2000 seem to reflect this debate. Natura 2000 rhetoric suggests a move towards more integrated nature-society relations in line with more functionalist thinking. On the other hand, Ledoux et al (2003) have described the Natura 2000 network as 'a "no net loss" policy in so far as it requires all Natura 2000 areas to be protected from deterioration and damage' (p 258). They go on to argue that 'the philosophy' that underlies Natura 2000 'either seems to ignore dynamic ecosystem changes (including those linked to climate change) and the consequent management problems, or fails to make sufficient allowance for natural change, or for co-evolutionary feedback effects' (Ledoux et al, 2003: 258, see also Turner et al, 1998). The Birds and Habitats Directives thus 'rely on a static approach to biodiversity protection' (ibid: 258).

Insufficient and absent scientific knowledge of European species and habitats was a major stumbling block faced by those devising the annexes. While some countries with

a history of nature conservation had national ecological databases to draw on, others such as Ireland had huge knowledge gaps and little or no baseline data. In many cases what they had, moreover, was fragmented and in various incompatible scales and formats.

As Waterton explains:

Lack of attention or lack of knowledge of a particular species, genus or habitat type in particular classifications or national inventories of habitats caused anomalies in the way that the European CORINE biotopes classification was constructed. Some of the semi-natural habitats relevant to Ireland, for example, are absent from the CORINE classification, due to a lack of documentation of those habitats in Irish conservation inventories and nomenclatures (Waterton, 2002: 195).

Divergent cultural constructions of nature further complicated the task. Species with a particular symbolic or heritage value in some Member States were supported more than others. Countries without a long-standing culture of nature conservation were less inclined to support the inclusion of certain native species, especially those of minor anthropocentric interest. Species and habitats unfortunate enough to have no one willing or able to 'champion their cause' were therefore sidelined whereas those fortunate enough to be well-liked (emblematic species) or well-researched were much more likely to gain the privileged 'annexed' status. Pinton's research reveals that

There were valuable species in Corsica which were removed because there was no-one there to defend them..... (an expert) (Pinton, 2001:337).

The list partly reflected the pressures of scientists who drew it up and also their positions with respect to their own countries. In this way some species which are endangered but are not found in English speaking countries were not classified as priority species (the case of the European mink was mentioned). On the other hand, species or habitats common in France but rare in northern

countries were protected (case of the stag beetle or Luzulo-Fagetum beech forests) (Pinton, 2001:337).

In this respect, criticisms have been leveled at the negotiation and arbitration procedures employed. A French scientist interviewed in Pinton's study explains how:

The first skimming involved keeping only the habitats that were significant for Europe. Then, during the political negotiation phase, the scientists were pushed aside and some member states defended themselves better than others. The political tendency in any case was to shorten the lists. We considered the habitats one after the other and if no-one complained the habitat was removed. (Pinton, 2001:337)

These annexed lists of species and habitats 'of Community interest' thus emerged from a process of negotiation wherein divergent scientific viewpoints, cultural attitudes and political factors were all jostling for position. Trying to standardize the complexity of ecological realities (with all their inherent uncertainties and subjectivities) across such a vast and culturally heterogeneous area was clearly a monstrous task. As Irwin argues: 'while standardization offers the promise of a common set of operating principles, implicit cultural and institutional factors may work in the opposite direction' (Irwin, 2001: 128).

While it is perhaps not surprising that the Directive and its annexes reflect the cultural commitments, choices and interests of those who devised it, the Commission 'defends a purely scientific approach' (Pinton, 2001:337). In fact the scientific basis of Natura 2000's methodology is continually cited in its legal and informative publications and brochures. According to Oliver (1995), the scientific and objective nature of the

approach 'is essential for the credibility and the proper application of the Directive' (Oliver, 1995 cited in Pinton 2001:337).

Also, while the Directive is presented as a 'scientific' response to 'biodiversity' loss, it is also draws heavily on the more cultural notion of 'heritage'. The Commission's information booklet on the network, for example, is entitled '*NATURA 2000 Managing Our Heritage*' (European Commission, n.d.). The very notion of protecting nature through inventories of flora and fauna reflects earlier notions of wilderness protection and a prioritization of emblematic species (Pinton, 2001). This suggests a hierarchical approach where 'special' nature is prioritized over 'ordinary' nature (see Chapter 9). Pinton notes how this is 'somewhat contradictory to the original vision of the network which was envisaged by some as a move away from earlier notions of conservation in terms of emblematic species and the drawing up inventories' (Pinton: 2001:336).

Site 'controls' or management

Article 6 of the Habitats Directive is concerned with the management of these sites (both SACs and SPAs) and as such plays a pivotal role in the Directive. However, it is generally considered the most problematic article in terms of interpretation. First, it requires Member States to establish appropriate 'conservation measures' – which as previously mentioned can take a variety of forms. It also requires them to 'take appropriate steps to avoid (-) the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated' (Council Directive 92/43/EC).

In this respect it states that:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.

Activities taking place in close proximity to, as well as inside the actual boundaries of protected areas must also be subject to these assessments. What actually constitutes 'an appropriate assessment', however, has been the source of much debate. For example, the use of EIAs to assess forestry developments in Irish sites has been a bone of contention with the forestry lobby who insist on their inappropriateness for this purpose.

The Directive goes on to state that:

the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned.

Following from the implications of early ECJ decisions (as mentioned earlier) exceptions to this, however, are envisaged under certain circumstances, i.e.:

if, in spite of a negative assessment (...) and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature.

In these circumstances, nature-society boundaries can be drawn with a degree of flexibility.

Stricter criteria are applied where a site hosts species and/or habitats listed as 'priority'. Here, more rigid boundaries must be respected. The only mitigating considerations which may be raised are those relating to human health, public safety or the environment.

Crucial concepts and phrases such as 'favourable conservation status' and 'site integrity' are highly subject to interpretation:

A broad definition of the term 'favourable conservation status' is given in the Habitats Directive (Article 1 of the Directive, see Annex I) but there remains a lack of clarity in the interpretation of this term or the means by which to implement it. There is a risk that, at the moment, it can be interpreted in many different ways, to suit different, and often conflicting, purposes. This ambiguity makes it challenging to implement (Halahan et al, 2003, WWF, on-line).

Although O'Riordan et al (2002) describe how 'ecological integrity is the linchpin of the Habitats Directive' (p139), the term remains contested (as we will see in Chapter 3) and difficult to apply (as we will see in Chapter 7).

Deciding upon what constitutes 'reasons of overriding public interest' is also an ongoing source of debate and ambiguity. The word 'public' is important here. As Linehan explains:

Purely private interests or developments will not suffice although, of course the dividing line will not always be clear and in some cases it may be possible to argue perhaps for a public benefit or interest deriving from or being associated with, a largely private plan or project. (Linehan, 2005:13)

That these reasons can now include those of 'a social and economic nature', extremely broad categories in themselves, further complicates the situation. The pivotal Article 6

of the Habitats Directive is thus rife with interpretative 'grey areas'. As we will see in Chapter 7, this creates great uncertainty for those charged with implementing the scheme at national and local levels.

Implicit in the Habitats Directive is the application of the precautionary principle which requires that the conservation objectives of Natura 2000 should prevail where there is sufficient uncertainty (European Commission, 2001; Cooney, 2005). A European Commission paper providing methodological guidance to Member States on the provisions of Article 6 states that:

In carrying out the necessary assessments it is important to apply the precautionary principle and the focus of the assessment should be on objectively demonstrating, with supporting evidence, that there will be no adverse effects on the integrity of the Natura 2000 site. Where this is not the case, adverse affects must be assumed (European Commission, 2001:25)

The precautionary principle, however, entails a degree of subjectivity in relation to how risks are assessed. Cooney describes how there exists 'very little shared understanding' of the term in the context of biodiversity (Cooney, 2005:13). Application of the term is further complicated by difficulties ascertaining what 'integrity' actually means.

Section 2.5. Discussion

It is generally accepted that the Habitats Directive and the Natura 2000 network signaled a paradigm shift in European nature conservation policy. There are at least two dimensions to this.

First, a new emphasis on habitat 'management' by humans (rather than strict 'protection' from humans) suggests a discernible shift away from the old "fortress conservationist" (or "fences and fines") narratives (Gbadegesin and Ayileka, 2000:89) and towards a more integrated approach - i.e. one that perceives human activities as not *necessarily* detrimental to biodiversity protection. It is, in other words, a move away from what O'Riordan et al have referred to as the "jewel in the crown philosophy" of 'safeguarding living museums of biodiversity' (O'Riordan et al, 2002:115). The desirability of appropriate human interaction with (or management of) such sites is clearly articulated in a Natura 2000 information brochure which states that:

The preservation of biodiversity (...) may require human activities to be maintained or encouraged. For instance, some types of meadows have to be mown or grazed so that they do not become fallow which would lead to the disappearance of certain endangered species (European Commission, *Managing Our Heritage*, n.d.).

Site designation, then, does not automatically prohibit current or future human activities or developments on the site. Depending on the specific circumstances of particular sites, activities such as building, farming, fishing, forestry or various leisure activities may often continue apace with relatively little change if any required. But while there is no 'a priori' prohibition of activities or developments, human activities *must remain compatible* with the conservation aims of the designated site. This compatibility can be judged on a case by case basis.

In its literature on Natura 2000, the Commission is keen to dispel any perception of Natura 2000 as a network of strict nature reserves or indeed as an impediment to economic development. A report commissioned by the EU entitled '*Promoting the*

Socio-Economic Benefits of Natura 2000 identifies a variety of 'potential socio-economic benefits' within such sites ranging from direct employment creation, rural development as well as purely environmental benefits (WWF, 2002). These potential benefits are rarely embraced in Ireland either at national level (see Chapter 6) or at more local levels (see Chapters 7 and 8).

The Commission is also keen to stress that although the network may include some pre-existing reserves, most of the land included is likely to continue to be privately owned. As we will see later in the Irish context, however, land-use restrictions and prohibitions can and do occur irrespective of ownership. This has led to bitter resentment of the network throughout Europe.

This intrusion into national land-use strategies including that of privately owned land, suggests a second shift. Clerkin and Flynn (1999) explain how 'the Directive is 'unusual in that it impacts upon spatial planning which until recently has been regulated by domestic legislation only' (p9). In the same vein, Grist describes the Habitats Directive as 'the first intrusion by Brussels into the control of land use within EU Member States' (Grist, 1997:88).

Other innovative aspects of the Directive and its envisaged network can be linked to its more "integrated" approach to nature-society relations. Its originality, in other words, 'lies in the wish to reconcile a scientific objective, biodiversity preservation, while taking economic, social, cultural and regional requirements into consideration'

(Alphandéry et al, 2001:311). While highly ambitious, however, this more integrative approach has in some ways been its achilles heel. Drawing on the French experience of implementing the Habitats Directive, Alphandéry et al comment that 'the difficulties in combining the scientific and social dimensions of the Habitats Directive have incessantly posed problems' (Alphandéry et al, 2001:312).

The Natura 2000 project - from site consideration and selection to land management and planning decision-making - involves repeated line-drawing exercises between what is considered 'social' and what is considered 'natural' (see Chapter 3). The epistemological, cultural, political and practical difficulties associated with 'drawing the line' between nature and society in terms of nature conservation, however, are not to be underestimated. At the centre of many ensuing tensions and ambiguities in this respect is the pivotal role of science as a unique form of knowledge that vouches to speak objectively for nature (Irwin, 2001, Wynne, 1996, Yearley, 1991).

This presents a number of dilemmas for those charged with implementing the project. How, when and to what extent social, cultural and economic factors should be taken into account has been a frequent source of concern and confusion. References in both Directives to social, cultural and economic factors were (and still are) regularly cited by landholders who insist that these should have been taken into account at the designation stage.

Article 2(3) of the Habitats Directive states that “measures taken” pursuant to the Directive shall take account of economic, social and cultural requirements and regional and local characteristics. Because the selection of sites might be considered a “measure”, Scannell et al point out that ‘it could therefore be argued that Member States, in selecting sites, could take account of the factors listed in Article 2(3)’ (Scannell et al, 1999:66). Early European case law, however, suggests the contrary, i.e. that such *non-scientific* factors be considered only at the site management stage. Scannell et al argue that:

The philosophy of the Habitats Directive would appear to mandate selection of sites on scientific criteria only while reserving consideration of other factors to the controls stage. There is still some scope for an argument that, particularly in identifying sites (other than priority sites) for protection, Member States have some discretion to take economic, social and cultural requirements, etc. into account (Scannell et al, 1999:67).

Another related dilemma concerns the timing, nature and extent of consultation carried out with affected landholders. This has been a continual source of controversy across most, if not all EU Member States. The particular resistance of Finnish forest owners to the Natura 2000 project, for example, was attributed to the absence of a ‘genuine opportunity to take part in the planning process’ (Hiedanpää, 2002:115). The flexible nature of a Directive as a legal instrument, i.e. one that specifies the ends but not the means of what is required, means that although ‘public consultation’ is continually urged by the Commission, there is no legal obligation on Member States to do this. While some countries (such as Germany and the UK) seem to have made at least some progress with respect to ‘the incorporation of local interests and a broad range of values

and outlooks', O'Riordan et al (2002:125) explain how others such as Ireland, Italy and Greece on the other hand have done 'very little' in this respect.

A fundamental difficulty facing all Member States is that Natura 2000's methodology is by its very nature, a top-down, science-led approach to conservation. Its scientific methodology allows for relatively limited input from those non-scientists affected by it. Whether in relation to the choice of species and habitat types 'worth' protecting or the manner in which individual places are selected, boundaries drawn and management measures devised, the centrality of science means that 'public consultation' can arguably never really extend beyond the realm of 'information provision' (see Chapter 8).

In the Habitats Directive and Natura 2000 then, there exists an apparent tension between a "science-first" and a more "people included" model of conservationism. These two contrasting perspectives, as Stoll-Kleeman and O'Riordan explain 'shape the framework for biodiversity management worldwide' (2002:163).

Biodiversity initiatives have traditionally operated within a "science-first" model of environmental decision-making (Kelsey, 2003) an approach sometimes referred to as "fortress conservation" or "fences and fines" which 'emerged in its purest form in the colonial period when conservation was "imposed from the top"' (Gbadegesin and Ayileka 2000: 89 cited in Stoll-Kleeman and O'Riordan 2002:162). Today, while such extreme methods are no longer practiced and there is a definite shift towards more

participatory arrangements, the underlying assumptions of a “science-first” approach remain embedded in many contemporary conservation plans and projects. Such assumptions include a clear dichotomous understanding of ‘nature’ and ‘society’, the perceived need to ‘protect’ the former from the latter and the view that science alone can inform and advise us in this respect (see Chapter 3).

“People-included”, on the other hand, refers to the shift towards including humans as integral components of the ecosystem and a belief in the ability of humanity to actively benefit, as well as threaten biodiversity. On this view, we should manage ecosystems in terms of a sustainable balance between the ‘integrity’ of nature and human concerns, interests and livelihoods (see Stoll-Kleeman, 2001a; O’Riordan et al, 2002, Pretty et al, 2002) . The concerns and conditions of local people, therefore, must be included in ecosystem management decision-making processes. Perhaps even more significant, however, is that a “people-included” approach is more focused on allowing *other ways of knowing and relating to nature* to be considered alongside scientific ones. When used in this respect, “people-included” is often compared to a “science-first” model that ‘assumes a hierarchical relationship in which scientific knowledge is elevated above other knowledge systems (Kelsey, 2003). “People-included” thus places greater emphasis on ‘integrating multiple knowledge systems’ (Kelsey, 2003) and allowing for ‘competing forms of rationality’ (Robertson et al, 2003) between and among so-called ‘lay’ and ‘expert’ knowledges of nature (Wynne, 1996).

Conclusion

This Chapter has shown how Natura 2000 emerged at the convergence of EU nature conservation and agricultural policies as an effective place-making exercise. In charting the development of Natura 2000 as a controversial line-drawing exercise between 'nature' and 'society', it considered some of the dilemmas and tensions felt in devising and managing these lines at EU level. Natura 2000 depends heavily on the authority of science, which is presented as the legitimate line-drawing authority. In constructing Natura 2000, however, the boundaries between science and non-science were culturally and politically negotiated (see Chapter 4). This Chapter revealed the 'uncertain, incomplete and controversial' science (Pinton, 2001) that was relied upon to draw and manage these nature-society boundaries – a science that would later be drawn on to legitimise 'place-making' at more local levels.

The next two Chapters provide the theoretical basis of the thesis. Chapter 3 explores how sociology and ecology have attempted to draw and increasingly blur, or question, the dividing line between nature and society, and how new inter-disciplinary thinking points to the notion of place as a useful integrative concept. Chapter 4 then takes up this concept of place – a concept that is *key* to understanding Natura 2000 – and explores the extent to which three sociological accounts engage with notions of knowledge, boundaries, place and 'place boundaries' in ways that can assist our understanding of Natura 2000 conflicts.

Chapter 3: Conceptualising Nature and Society

Attempts to manage 'nature' by 'society' under Natura 2000 raise some interesting questions regarding nature-society relationships. How should we conceptualise these relationships? How do we 'know' nature? What light can a sociological account shed on questions of 'nature', 'biodiversity' or 'ecosystem' management?

Asking such questions immediately raises ontological and epistemological dilemmas about nature and society and, in particular, where we draw the line between the two. In this Chapter, therefore, I address the age-old nature-society dualism wherein nature and the natural world are conceived to be separate from society and the social world. The effects of this dualism have been far-reaching. By locating humanity outside nature and identifying the social as the antithesis of the natural, it has encouraged an effective division of labour between the natural and social sciences (Irwin, 2001). It is through the epistemology of the natural sciences, therefore, that we seek to know nature, and through the epistemology of the social sciences that we seek to know society (Irwin, 2001; Sutton, 2004). From this perspective, a rather peripheral role is assumed for sociology in addressing issues of biodiversity and eco-system management – an assumption that this thesis would like to challenge.

This Chapter will consider how sociology (a discipline premised on understanding society) and ecology (a discipline premised on understanding nature) have grappled with this dualism through attempts to draw, and increasingly blur, the lines between nature and society. Remarkably similar paradigm shifts in both disciplines have also encouraged a blurring of the conceptual the boundaries between 'lay' and 'expert' knowledges of

nature. Epistemological similarities between sociology and ecology, I argue, support a more central role for sociology in nature conservation research than traditionally envisaged. The Chapter ends with a section exploring some new inter-disciplinary concepts and ventures cross-cutting the natural and social sciences. These suggest alternative and insightful ways of 'knowing' nature and conceptualising nature-society relations - ideas that will be taken up and employed in later Chapters, especially in Chapter 10.

Section 3.1. Sociology and the nature-society dilemma

Environmental concerns have always posed a challenge to the discipline of sociology in that they raise what Newby (1991) referred to as 'foundational problems'. 'The very *raison d'être* of sociology' he argued 'has rested upon identifying and demarcating a disciplinary paradigm quite distinct from and irreducible to the natural and the biological' (Newby, 1991: 7). Drawing on enlightenment assumptions of a nature-society dichotomy and the ancient Greek philosophy of identity through negation, sociology identified the 'social' as the antithesis of the 'natural'. Thus while the social world was carved out as the legitimate realm of sociological study, the natural world was 'fenced off' as the legitimate realm of the natural sciences (Irwin, 2001). In fact, the natural world was viewed with some suspicion. Wary of the worst excesses of biological reductionism and essentialist thinking, sociology in large part devoted itself to deconstructing 'the natural'. Assumptions of 'naturalness', regarding for instance, gender, race and sexuality were effectively dissected under the sociological microscope and subsequently proclaimed as social in origin. Patriarchy, racism and essentialist assumptions were thus opened up to scrutiny as cultural diversities were explored and embraced. This questioning of 'the natural' has undoubtedly been central to the explanatory power (and hence many

achievements) of sociology. At the same time, however, an 'institutionalised suspicion of the 'non-social'' (Sutton, 2004: 2) has effectively restricted its explanatory scope, leaving a whole range of 'environmental' or 'natural' concerns on the fringes of the sociological endeavour¹.

In recognition of this epistemological dilemma, in 1978, two US sociologists 'made a bold call for a paradigmatic shift in the discipline of sociology' (Goldman and Schurman, 2000:563). According to Catton and Dunlap (1978) a 'new environmental paradigm' was needed to replace the old 'human exemptionalist paradigm'. Such a paradigm, they argued, would overcome 'sociology's traditional and deep-seated reluctance to acknowledge the relevance of the physical environment for understanding contemporary societies' (Catton and Dunlap, 1978: 17). While the extent to which such a paradigm shift has occurred remains questionable, there has at least been a significant refocusing of discussions around a more critical analysis of social-natural relations. Central to all this has been the realist versus social constructionist debate.

The debate, in brief, questions the extent to which the environment is a natural and objective reality and/or a series of socially constructed realities. For realists, who stress the independent causal powers of nature, the scientific facts of biodiversity, for example, exist 'out there' for the scientific community to uncover and convey to the lay public. Once armed with the facts, the public can then make informed decisions on how to act. Sociology's role, from this perspective, is to examine the 'social challenges' and 'social impacts' associated with such developments (Irwin, 2001:85). For constructionists, on the other hand, the 'facts' of nature regarding biodiversity, are a social phenomenon which cannot be understood independently of the socio-cultural contexts (scientific,

institutional, economic, legal) within which they were constructed (see Hannigan, 1995). Because science and nature do not operate in a cultural vacuum, no one community, whether scientific or otherwise, can represent the only, legitimate 'voice of nature'. Sociology's role, from this perspective, is to examine the process whereby certain knowledge claims *acquire* factual status (Irwin, 2001).

From a very early stage in this study, I felt that simplistic, polarised or extreme versions of either of either approach would be of limited value for the purposes of this study. Social constructionist accounts that deny (or seriously downplay) the materiality of nature or realist accounts that would deny (or seriously downplay) the socio-cultural influence in how we strive to understand or attribute meaning to it, were therefore abandoned. Whether broadly realist or social constructionist in orientation, most sociological accounts as Castree and MacMillan explain, '*share an inability to imagine human-nature relations in a nondichotomous way*' (Castree et al. 2001:210, italics in original). Ironically, then, the social constructionist-realist divide is in one sense a replication of society-nature dualism wherein either side conceptualises nature-society relations by attributing causal powers primarily to *either* 'nature' *or* 'society'. In doing so, however, both sides fail to recognise their mutually constitutive nature.

Attempts to move beyond a strict realist-social constructionist divide may thus hold the greatest promise for sociological advancement in this area, providing the most useful and insightful accounts of so-called 'environmental' issues. Such attempts include the works of Macnaghten and Urry (from a broadly dwelling perspective) Alan Irwin (drawing heavily a Sociology of Scientific Knowledge (SSK) approach) and those

adopting Actor-Network-Theory (ANT) (Callon and Latour, 1981; Callon, 1986; Eden et al, 2000).

Drawing heavily on Ingold's articulation of a dwelling perspective that contests conventional divides between nature and culture (see Chapter 4), Macnaghten and Urry suggest that the 'natural' and the 'social' are bound together within 'embedded social practices' (Macnaghten and Urry, 1998). These practices, they argue are constituted through discourse (the meanings we attribute to nature and how we express them), through embodiment (how we sense or experience nature), through changing conceptions of space and time and through models of human activity (including theories of human nature and capabilities). Through the example of the Lake District in England they illustrate how changing social discourses of the place (from wild, 'barren and frightful' to 'unspoiled' and beautiful) are linked to changing meanings associated with practices of experiencing nature (from land clearing and farming to more recent tourist activities such as hill-walking). Sensual experiences of nature once interpreted as 'dirty and uncivilised', are increasingly seen as 'positive and life-affirming' (Sutton, 2004: 68-69 making reference to Elias 2000 [1939]). There is no one objective nature 'out there' but rather a multitude of 'contested natures' embedded in daily life. Sociology, from this perspective, therefore, should focus on exploring our sensual, embodied experiences of nature and the meanings we attribute to them through these changing social practices.

Another alternative to the realist-constructionist impasse has been provided by Alan Irwin. Rather than granting priority to either social or natural realms, Irwin argues that 'we need to examine the particular construction of these categories within specific cultural, institutional and ecological settings' (Irwin, 2001: 28). Drawing on the work of

Bruno Latour and a sociology of scientific knowledge tradition, Irwin discusses how environmental concerns have a 'hybrid' or 'co-constructed' character (Irwin, 2001). Genetically modified food scares, BSE outbreaks and so on, he argues, cannot be categorised as either social or natural phenomena but rather 'weave together elements of both' (ibid:174). The natural-social dichotomy, he argues, thus 'crumbles when confronted with the hybrid and co-constructed character of social and environmental processes and practices' (ibid:26). Central to Irwin's argument is the notion of co-construction. Because both environmental and social problems 'draw upon the same nature-culture nexus', the 'social', he argues, constructs *not only* the 'natural' *but also* the 'social' (ibid: 175). So rather than questioning 'where to draw the line' between what is social and what is natural, the role of environmental sociology from this perspective, is to examine 'this very process of line-drawing' as it occurs within specific social and environmental contexts (ibid).

Sutton, among others, while acknowledging the advances made by Irwin and Macnaghten and Urry has criticised both approaches for being 'essentially social constructionist' (Sutton, 2004:74). In spite of their stated claims to move beyond the realist-social constructionist divide, Sutton argues that they 'remain closer to social constructionism than realism' and 'do not really build in the effectivity of the natural on the social' (ibid). So while both accounts offer useful and illuminating accounts of how human meanings are attributed to nature, the materiality of nature (and its agential role in socio-ecological change), he argues, is left somewhat understated. In providing more questions than answers regarding society-nature relations, social constructionist accounts are difficult to apply to policy-making circles. While Sutton's comments are insightful and will be taken up again Chapter 10, it might be argued that his criticism misses the point, which is to

think beyond the realist-social constructionist debate and nature-society conceptual boundaries.

Another attempt to move beyond the nature-society dualism is Actor-Network-Theory. This is an approach, in contrast, that *explicitly* acknowledges the active, material effects of the natural on the social, although it dispenses with these categories in its analysis. In fact ANT sits perhaps closer to realism than social constructionism. This approach attempts to dispel the nature-society dualism characteristic of modern thinking by envisaging the world through 'amodern' eyes. Only by so doing, it is argued, can we really appreciate the 'hybrids' or 'quasi-objects' that make up our ontologically impure world. In urging us to think relationally, ANT proposes that 'things' (including humans) are only definable *in relation to* other things. Socio-natural relations are thus best perceived in terms of networks involving unique alignments of humans, animals, technologies and other materials in relations which vary in stability and over space and time. Agency, from this perspective, is not necessarily linked to intentionality, but understood rather "as a relational effect generated by..... interacting components whose activity is constituted in the networks of which they form a part" (Whatmore, 1999: 28). Because non-humans are understood to play a part in this agency as much as humans do, the term 'actant' is sometimes preferred to that of 'actor'. Our modern, common-sense understanding of these hybrids as either 'social' or 'natural' is the result of a post-hoc attempt by analysts to oversimplify or 'purify' this complexity.

Both SSK and ANT draw heavily on the concept of hybridity. According to Bruno Latour, a sociologist who has been closely associated with both a sociology of scientific knowledge (SSK) and actor-network theory (ANT), (and whose extensive work on

'hybridity' has greatly contributed to both), the appeal of hybrids is largely their ability to transgress traditional boundaries. Thus hybridity expressed in terms of social-natural 'hybrids' is a particularly useful 'bridging concept' – bridging not only the social-natural dualism but also social constructionist and realist accounts of social-natural relations.

In all of these above mentioned accounts, attempts to deconstruct the social-natural dualism suggests a similar deconstruction of the lay-expert knowledge dichotomy. Macnaghten & Urry (1998) argue that 'at the heart of many environmental disputes between lay and expert forms of knowledge lie contestations over different senses, and over the relative role of the senses, as opposed to more abstract and cognitive forms of knowledge' (p133). Ingold's dwelling perspective, (see Chapter 4), upon which they base much of their thinking underlines the importance of the skills, sensitivities and orientations that develop through engaged practices with non-human nature in particular environments. According to Irwin and a Sociology of Scientific Knowledge (SSK) approach, it is only through adopting an 'agnostic stance' in relation to *all* environmental knowledge claims that we can explore the manner in which these 'hybrids' are constructed, contested and defended in particular social, scientific and institutional settings (Irwin, 2001). From this perspective, therefore, we cannot simply 'know' nature by appealing to the natural (*or* indeed the social) sciences – or the legitimate experts thereof. Because no one account (whether socio-cultural or epistemological) can provide unmediated access to nature, 'lay' and 'expert' knowledges of nature, therefore, are considered on an equal footing (*ibid*). Although ANT accounts are often less explicit in their treatment of lay and expert forms of knowledge, their dissolution of nature-society boundaries through notions of networks of relational hybrids precludes the idea of bounded ontological domains which can be explored along traditional disciplinary lines.

Section 3.2. Ecology and the nature-society dilemma

As with sociology, ecology has equally grappled with the social-natural dichotomy:

Ecology has struggled since its inception with the issue of how to deal with humans. They have been considered on one side to be just another animal and therefore appropriate for inclusion in ecology. On the other side, they have been treated as so obviously different and socially complex to be avoided at all costs (Pickett, 1997:195 cited in Robertson and Hull, 2003:403).

Discernible shifts towards more integrated thinking, however, are clearly predominant (Berkes, 2004). As with sociology, however, such moves remain the subject of some controversy.

In this respect, Callicot et al identified two schools of ecology or conservation philosophy that differ in their perceptions of humanity's relationship with nature. Compositionalists tend to locate humans outside nature, whereas functionalists tend to perceive humanity and nature as part of one dynamic complex adaptive system in which humans are an integral part (Callicot et al, 1999). Compositionism perceives the world 'through the lens of evolutionary ecology'. It is 'an entity-orientated, biological approach to ecology that begins with organisms aggregated into populations' (ibid: 23). Functionalism, on the other hand, perceives the world 'through the lens of ecosystem ecology'. It is essentially 'a process orientated, thermodynamical approach to ecology that begins with solar energy coursing through a physical system that includes but is not limited to the biota' (Callicot et al, 1999: 23 paraphrasing Odum, 1968). In simple terms, therefore, compositionalists focus more on protecting the component parts of ecosystems from human interference whereas functionalists focus more on protecting the processes or functions of ecosystems of which humans are considered a part. The rather crude and overly simplified distinction presented here is clearly more fluid and nuanced in reality. If perceived as two ends of a

continuum, many ecologists lie somewhere in the middle and others espouse aspects of both schools. Overall, however, the extreme compositionalist world-view of strict nature-society boundaries is being questioned as the 'natural' and the 'social' are increasingly perceived as inextricably linked.

As pointed out in Chapter 1, ecology and applied ecologies are in the midst of three interrelated conceptual shifts: namely, from reductionism to a systems view, from a view of humans located 'outside' nature to a view of humans located 'inside' nature, and from expert-based forms of conservation management to more participatory methods (Berkes, 2004:624; see also Levin, 1999; Bradshaw and Bekoff, 2001; Ludwig, 2001).

These conceptual shifts are all interrelated. The two former shifts, for example, are clearly linked to the shift towards more participatory methods. The shift towards a systems view entails a move away from the old 'command and control' approach based on 'linear cause-effect thinking' and 'mechanistic views of nature' as 'productive, predictable and controllable' (Berkes, 2004: 622). In its place is a 'complex systems' view of nature where nature is understood as complex, chaotic and ever-changing. This complexity suggests that our knowledges of nature will never be perfect or complete. Attempts to manage nature, therefore, must be adaptive and flexible rather than hierarchical or 'top-down'. This necessitates close cooperation, risk sharing and a learning environment between management agencies and local people (Berkes, 2004:624).

The shift towards including humans in the ecosystem is equally related to a shift away from 'expert only' styles of management. Given that we are all part of ecosystems, it is

urged that we consider dynamic interactions between human and non-human nature, rather than viewing people merely as “managers” or “stressors” (Berkes, 2004: 623; see also Kates et al, 2001). ‘Putting humans back into the ecosystem’ as Berkes explains, ‘requires using all possible sources of ecological knowledge as may be available’(Berkes, 2004: 623).

In spite of these recent conceptual shifts, however, ecology remains fertile ground for ‘contested natures’ (Macnaghtan and Urry, 1998). As evidenced by Callicot et al’s elucidation of functionalism and compositionism, there is still no disciplinary consensus on humanity’s relationship to nature, on how natural systems work, and on which terminology we should use to describe or ‘construct’ them. Of particular significance, in this respect, are the ecological concepts employed by either school. For instance, while compositionist discourse tends to employ concepts such as: ‘biological diversity’, ‘biological integrity’, and ‘biological restoration’, functionalist discourse tends to employ ‘ecosystem services’, ‘ecosystem health’, ‘ecological rehabilitation, ‘adaptive management’, ‘sustainable development’, and ‘ecological sustainability’ (although of course all are often used indiscriminately) (Callicot et al, 1999: 23). Such terms are significant in that they explicitly reflect differing emphasises on the significance of ecosystem ‘composition’ or ecosystem ‘functions’.

The term, biological diversity has undoubtedly achieved a particular prominence. Premised on the notion that ecological crisis is threatened by an accelerated loss of species and habitats, biodiversity is:

the rallying cry currently used by biologists to draw attention to this crisis and to encapsulate the Earth’s myriad species and biological processes, as well as a host of values ascribed to the natural world (Takaacs, 1996: 9).

The birthchild of a number of prominent and passionate biologists in the 60s who went on to create the applied sub-discipline of conservation biology, biological diversity is thus an inherently value-laden concept. As Takacs explains,

By activism on behalf of what they call biodiversity, conservation biologists seek to redefine the boundaries of science and politics, ethics and religion, nature and our ideas about it (ibid).

The term, in other words, was coined and invented by a group of passionate scientists who confessed to 'loving nature'. This 'elite' group of biologists aimed 'to forge a new ethic, in which biodiversity's multiplicity of values would be respected, appreciated and perhaps even worshiped'(ibid).

Interviews carried out with these founding fathers of biodiversity reveal widely divergent definitions of the concept (ibid). Put simply, the term represents an attempt to move beyond 'endangered species' and 'wilderness' notions of conservation to a more holistic focus on the complete array of natural organisms at various levels (genetic, species and ecosystems) and their interactions and functions. Exactly what all this means in any given context, however, is often vague and unclear. Even the relatively simple notion of species remains open to debate.

Like biodiversity, the species concept is a construction that blends the abstract with the concrete. In *conservation biology*, Martha Rojas writes that "there is no agreement on what species are, how they should be delimited, or what they represent". Different definitions of what constitutes a species have different implications for conservation, and each definition poses problems for recalcitrant taxa such as plants and asexual organisms. Current debates in US conservation swirl around whether, for example, the Florida panther and the red wolf are distinct species or merely hybrids (Takacs, 1996:53).

The term's vagueness, for some, however, is its strength. In an interview with Takacs, Ehrenfeld, one of the 'founding fathers' of the concept, confessed not having a formal definition of biodiversity, adding: 'I think its one of those wonderful catchwords like

sustainable development, that, because it's vaguely defined, has a broad appeal, like motherhood' (Takacs, 1996: 47).

The link between biological and cultural diversity is also unclear. While cultural diversity is rarely mentioned in official definitions (such as that of the CBD and in turn the EU Habitats Directive) it is often incorporated into applications of the concept. For instance, the "ecosystems approach" as developed by the Conference of the Parties to the CBD is one that 'recognizes that humans, with their cultural diversity, are an integral component of many ecosystems'(CBD, on line).

Indigenous groups, moreover, are often presented as guardians of biodiversity or 'keepers of knowledge about biodiversity' whose resources 'must be won' if we are to succeed in conserving biological diversity (Takacs, 1996: 44). A reading of COP and Natura 2000 documentation, however, suggests that there is no clear understanding or consensus as to how these two inter-relate and the relative intrinsic or instrumental worth of cultural diversity in all of this. There is a growing tendency, however, to promote the notion that 'diversity has worth':

Some biologists who boldly assert that biodiversity is a normative good associate the claim with the more widely familiar one that cultural diversity is a normative good (ibid: 43).

Appeals to cultural diversity by those advocating biodiversity may be a response to counter perceptions of biodiversity advocates as 'imperialist eco-fascists' (ibid:44).

Biodiversity thus remains a contested and highly debated concept. For some the term is an 'empty shell' (Pinton, 2001 drawing on Blondel, 1995) so broad, so vague that it has become meaningless. It is often presented in ecocentric terms as a 'value in and of itself'

(Pinton,2001:331) because ‘no one can say with certainty what biological diversity is useful for’ (ibid, drawing on Parizeau, 1997). At other times it is presented in more anthropocentric terms, as providing essential ecosystem ‘goods’ and ‘services’.

Following trends towards more functionalist thinking in ecology, however, the term is increasingly associated with the notion of maintaining system ‘functions’ and abilities to ‘adapt’ to change over time. This is often linked to the notion of systems ‘resilience’ which will be explained later in this Chapter. Ideas around biodiversity, from this perspective, are frequently underpinned by the central issue of uncertainty (Cooney, 2005). Because we do not know how many ‘species’ exist, or the parameters of their ‘habitats’ and because we do not know how all manner of social-ecological phenomena interact in particular circumstances, we cannot assess the implications of allowing this natural diversity to diminish so radically. On the grounds of all this uncertainty it is argued that we should maintain sufficient diversity as a precautionary measure.

In spite of the term’s current hegemony in nature conservation policies, in academic circles there has been some debate as to whether biological diversity should be replaced with biological integrity as the ‘*summum bonum*’ of conservationism (Callicot et al, 1999:23). According to Angermeier and Karr (1994), the (re-)introduction of ‘alien’ or ‘exotic’ species into an ecosystem may artificially increase its biological diversity but compromise its biological integrity (defined as ‘native species populations in their historic variety and numbers naturally interacting in naturally structured biotic communities’(Callicot et al, 1999:23 drawing on Angermeier and Karr, 1994). This was the case in Clear Lake California when the introduction of 16 new species of fish made it a more diverse aquatic community, but extirpated 5 species of its native fish, two of

which are now globally extinct (Callicot et al, 1999:25, see also Moyle, 1989).

Ecosystem integrity was thus compromised. Also, because the lake composition is now similar to many other aquatic communities, biological diversity decreased at a different scale (i.e. ecosystem diversity as opposed to species diversity) (ibid). For some ecologists, biological integrity is thereby a more useful concept. As outlined in Chapter 2, the Habitats Directive, while established to protect 'biodiversity' also relies heavily upon this concept of 'integrity': the natural 'integrity' of Natura 2000 sites must be afforded protection from 'social' interference, although it is not always clear how this 'integrity' is understood (see Chapter 7).

Hunter (1996) argues that the concept of integrity is problematic in that it makes certain normative assumptions regarding the 'natural state of nature'. Equally questionable, therefore, is the concept of restoration which refers to 'the process of returning as nearly as possible a biotic community to a condition of biological integrity' (Callicot et al, 1999:25; see also the Society for Ecological Restoration, 1997). If, as functionalists would emphasise, ecosystems are in 'a continual state of flux' (Hull, 2003: 403) we might ask 'what past biotic community composition and structure in a given area should be selected as the target for restoration efforts?' (Callicot et al, 1999: 26).

The concept of ecosystem health is equally problematic. Hunter describes how ecosystem health is 'an appealing term because it is so easy to understand intuitively given our personal understanding of human health' (Hunter, 2000: 573). On viewing a forest that has recently experienced a fire or a hurricane, few people, he points out, would consider it a healthy eco-system - 'yet from the perspective of a woodpecker or bark beetle a forest with hundreds of dead trees is very healthy indeed' (ibid:573). The

illusive 'naturalness criterion' is clearly 'fraught with problems' (Callicot et al, 1999:26 drawing on Hunter, 1996).

Far from being impartial measures of an independent nature, therefore, such terms embody a multitude of human value-judgements, assumptions, desires and anxieties. As they vie for paradigmatic hegemony, 'the language of these various discourses determines what exists, what is good and what is possible' (Herndl and Brown, 1996, pp3-4; cited in Robertson & Hull 2003:402).

Section 3.3. Epistemological similarities?

A closer look at this concept of 'naturalness' and the associated 'native-exotic' species problematique reveals interesting parallels between sociological and ecological paradigms. The extreme compositionalist view that all human interference is 'unnatural' reflects a realist perspective that locates humanity outside nature's ambit. But as ideas of naturalness and pristine nature are increasingly questioned, remarkably similar questions are being posed within sociological and ecological/conservationist communities. In a similar vein to Callicot et al's questioning of 'restoration' ecology, sociologist Cindi Katz asks 'who determines what a 'good landscape' is' and 'to which period is the political ecology to be restored?' (Katz, 1998: 57).

Ecology's attempt to resolve the native-exotic species question is rife with sociological concepts. It has been suggested that classification difficulties arise when 'a recent immigrant that arrived by a natural process of dispersion is an exotic' while 'a long established naturally dispersed immigrant is a native' (Callicot et al, 1999:26, see also

Westman, 1990). Thus whether or not a 'non-indigenous species' eventually becomes 'naturalised'

...might be determined by an additional ecological criterion: to what extent is the species in question a good citizen of its new biotic community? Does it displace or adversely affect its native and naturalised neighbours? Perhaps only long-established *and* well-behaved species should qualify as naturalized. (Callicot et al. 1999: 27).

Such reasoning is replete with ambiguous but inherently *social* constructions of citizenship, place, belongingness, deviance and so on.

In light of the above therefore, sociology and ecology are perhaps epistemologically closer than commonly acknowledged or portrayed. Both disciplines have been troubled by the social-natural dualism and through engagement with it they have sought to explore and critique it. This, in turn, has led them to question the lay-expert dichotomy.

Through blurring the boundaries between nature and society *and* between scientific and other ways of knowing and relating to 'nature', they have encouraged more reflective and inclusive approaches.

At the same time they have also grappled with strikingly similar epistemological identity and legitimacy issues. Wavering between science and philosophy, logical-positivism and self-reflexivity, neither discipline exhibits paradigmatic or methodological unity.

Worster (1994) refers to ecology's 'persistent identity crisis', arguing that ecology has never been quite sure whether it is primarily a 'science or a philosophy of interrelatedness' (Worster, 1994: 471, cited in O'Rourke, 2005:79). A similar tension exists in sociology. While elementary sociological textbooks underline sociology's scientific methodology describing such methods as 'implementations of a general research process along hypothetico-deductive lines', a Sociology of Scientific

Knowledge (SSK) approach rejects logical-empiricist epistemology, in favour of a contextual understanding of scientific practice (Lynch and Boden, 1997:481). In support of the latter view, Lynch et al explain how conventional sociological conceptions of theory and method promote a misguided 'asociological conception of science' in order to legitimise sociology's 'inclusion among the sciences' (Lynch et al, 1997: 482). The 'epistemic flattening' espoused by a SSK approach, they argue, 'provides a valuable antidote to current anxieties about the coherence and status of sociology' (Lynch et al, 1997: 481).

Scientific legitimacy is often partly determined in terms of placement on a hard-science/soft-science vertical continuum (the harder the science the more legitimate, the softer the science the less legitimate). Criteria for placement on such a continuum are derived from a positivist world-view. Hard science, therefore, is logical- empirical, deductive, generalisable, quantitative and above all 'objective'. Soft science, on the other hand, is theoretical, inductive, contextual, qualitative and largely 'subjective'. While a sociology of scientific knowledge would question such classifications, and reject all claims of objectivity, this hard-science-soft-science distinction remains highly influential. The so-called 'hard facts' of physics or biology, for instance, are continually portrayed as essentially objective and thereby irrefutable, while the 'soft facts' of sociology, anthropology or politics are perceived to entail human values and aspirations and are thereby questionable or less 'scientific'. Yet the boundaries of science, as Gieryn argues, are rhetorical and cultural in essence:

The sociological question is not whether science is really pure or impure or both but rather how its borders and territories are flexibly and discursively mapped out in pursuit of some observed or inferred ambition – and what consequences, and for whom? (Gieryn, 1999:23)

Ecology occupies an interesting position in this schema in that it is often considered the softer of the hard sciences (Robertson and Hull, 2003). For example, unlike the so-called 'hard' sciences of chemistry or physics that construct quantitative, predictive, law-like generalisations, there are no commonly accepted scientific laws of ecology (Robertson et al, 2003). It is rather 'a science of the particular' – a science 'consisting mainly of hypotheses, models, case studies and rules of thumb' (ibid: 404, see also Shrader-Frechette and McCoy 1993; Shrader-Frechette, 1995).

It is also divided between those who engage in 'physics envy' (a desire to emulate the so-called 'hard' sciences) and those who embrace the complexity and uncertainty of its contextual and particularistic approach. Representing the latter view, Sagoff (1988) has argued that 'the absence of simple, quantitative, predictive, law-like generalisations in ecology is simply a fact about nature and has nothing to do with the status of ecology as a science' (Sagoff, 1988:161 cited in Robertson and Hull, 2003). Borden argues that:

living systems are open to uncertainty and new arrangements; it is the study of this openness that makes an ecologically perspective both necessary and interesting. Good ecological science will invariably have a large element of unpredictability. While ecosystem studies strive for thoroughness, they will always be subject to novelty and uniqueness. Indeed, it may be important to guard against false precision or the apparent need for it (Borden, 1993: 300 cited in Robertson et al, 2003, see also Botkin, 2000).

Interestingly, a similar point was made by Weber (1962) as regards sociology and the essential complexity of society and social systems.

Section 3.4. The role of sociology in questions of habitat management?

In light of the above, therefore, if the divide between sociological and ecological epistemology is more porous than generally assumed, what implications does this have

for the appropriate role of sociology (and the social sciences more generally) in exploring questions of biodiversity and ecosystem management?

Joanna Endter-Wada et al (1998) have explored the contributions of the social sciences in the micro policy area of ecosystem management in the United States. Social considerations they argue, 'are usually limited to political decision-making processes and to the development of environmental education'(Endter-Wada et al, 1998: 892). There is a well-established division of labour whereby natural scientists are entrusted with establishing the ecosystem science and social scientists are called upon to manage conflicts, avoid litigation, educate the public and improve public participation processes (ibid). As it stands, therefore, social scientists' main contributions lie in 'applying their understanding of human behaviour to an analysis of conflicts and processes for managing them' (ibid: 894). But this, they argue, is to severely underestimate the potential contribution of the social sciences to ecosystem management.

The social science aspect of ecosystem management, they argue, has two distinct components: one concerns mediating public involvement in ecosystem management decision-making processes while another concerns integrating social considerations into ecosystem science (ibid: 891). As suggested earlier there is clearly much greater emphasis on first component.

Endter-Wada et al's second component of integrating social concerns into ecological science has received much less recognition. Recent paradigmatic shifts aside, the science of understanding ecosystems remains, in the main, the purview of the biophysical or natural scientists. Endter-Wada et al attribute this to 'enlightenment, religious and

intellectual traditions that viewed humans as separate from nature' (ibid: 895) reflecting once more the enduring nature of our nature-society dualism.

Their observation regarding this overlooked second component is also supported by Norton's study of research efforts that attempt to integrate ecological science with analyses of social values (Norton, 1998:354). Otherwise laudable research efforts, he argues, have all followed what he has termed a 'serial approach' where ecological description is followed by evaluative discourse. 'There is one language that describes the world and another that evaluates it and these languages are deployed in serial fashion' (ibid). Norton describes how this approach is based on a 'false image' of an 'ideal environmental decision-maker' armed with all the necessary 'descriptive ecological facts', fully aware of the diversity of public values, interests and preferences before deciding on a policy geared to maximise the public good (ibid). It is equally based on two mutually reinforcing myths: 'the myth of a complete science' and 'the myth of a value-neutral science' (Norton, 1998: 355).

In response to the question set out at the start of this section, I would argue that sociology can provide many useful and insightful contributions to issues around biodiversity and ecosystem management. While issues of participation and conflict management are not unimportant, there is no reason for sociology to limit itself to these areas. Sociologists of science suggest that we delve into ecological science, revealing the range of human values, judgments and choices within it. Irwin's approach, while drawing on Latour and a SSK tradition, proposes that we explore the process of line-drawing between nature and society. This entails not only delving into the science normally entrusted to draw these lines but also taking into account its application in particular contexts. The notion of 'co-

construction' through conceptual line-drawing also allows us to consider scientific and non-scientific worldviews in tandem. As processes of line-drawing between nature and society continually occur in both scientific and non-scientific circles, this approach allows us to extend our analysis beyond that of 'what scientists do'. Gieryn's articulation of "boundary work" which will be discussed further in the next Chapter, takes a similar approach to Irwin but focuses rather on the process of line-drawing around the boundaries of 'science' as it is distinguished from 'non-science'.

Other approaches such as ANT and Dwelling (as the following Chapter will explore) may also provide insights into how knowledges of nature (both lay and expert) are produced: the former reveals how scientific forms of knowledge achieve a certain placelessness while the latter reveal how lay forms of knowledges are more grounded and embedded in place (see Chapter 4).

Section 3.5. New 'social-ecological' approaches

These new approaches to society-nature relations (discussed here as paradigm shifts in sociology and ecology) are well-articulated through a number of inter, multi and trans-disciplinary concepts, ventures and networks, frequently cross-cutting both the natural and social sciences. The hybrid nature of environmental problems, as Latour argues (1992) makes them impossible to explain through the established academic disciplines. Disciplinary boundaries 'are struggling to keep apart what the hybrids tell us cannot be separated' (Irwin, 2001: 85, see also Latour, 1992). These approaches include those promoting 'citizen science' (Irwin, 1995), 'sustainability science' (Kates et al, 2001), a more 'public ecology' (Robertson et al, 2001, 2003) and those involved in the work of the 'resilience alliance' (Berkes et al, 2002).

While all of these provide diverse insights into various aspects of social-ecological relations, they all focus (to greater or lesser degrees) on the *complexities, uncertainties and subjectivities* at the heart of social-ecological knowledge. They are all concerned, in other words with *how* we know social-ecological systems (SES), for *what purpose* we wish to do so, and *who* (what actors, stakeholders) should have a legitimate role in this process of knowledge construction. Here, I will briefly present the ideas of two such approaches: those advocating a more ‘public ecology’ and those contributing to the work of the ‘resilience alliance’. I will return to these once more in Chapter 10 where I will consider their significance to the findings of this research.

According to Robertson and Hull (2003) there is, although clearly in the minority, ‘a new breed of self-reflexive, explicitly normative, public interest scientists’ worldwide who are practicing a more ‘public ecology’ - although they may or may not use such a term (Robertson & Hull, 2003: 407, see also Noss, 1994; Roebuck and Phifer, 1999; Lele and Norgaard, 1996).

Public ecology is:

an approach to environmental inquiry and decision making that does not expect scientific knowledge to be perfect or complete. Rather, public ecology requires that science be produced in collaboration with a wide variety of stakeholders in order to construct a body of knowledge that will reflect the pluralist and pragmatic context of its use (Robertson & Hull, 2003: abstract).

Public ecology is thus an attempt to reveal the uncertainties and subjectivities in all scientific attempts to draw lines between nature and society. In an article entitled ‘Public ecology: an environmental science and policy for global society’, Robertson and Hull (2003) set out their ideas for the development of this more public ecology. They call for

a science that is trans-disciplinary and applied, contextual, adaptive, multi-scalar, integrative, accessible and explicitly normative-evaluative. It is beyond the scope of this study to look at these features in detail (for a complete and more detailed review of the features of public ecology see Robertson & Hull, 2001 and 2003). As these are all clearly inter-related, however, a few general comments can be made.

Public ecology embraces the concept of 'post-normal' science as an alternative to 'positivist' science. The term 'post-normal' (Funtowicz & Ravetz, 1995) is used to describe scientific knowledge embracing many of these above-mentioned features:

In [the] "normal" state of science, uncertainties are managed automatically, values are unspoken and foundational problems unheard of. The post-modern phenomenon can be seen in one sense as a response to the collapse of such 'normality' as the norm for science and culture. As an alternative to post-modernity..... a new, enriched awareness for the functions and methods of science is being developed. In this sense, the appropriate science for this epoch is "post-normal" (Funtowicz & Ravetz 1995:146 cited in Robertson & Hull, 2001).

From the perspective of 'post-normal' science 'the key to good science is a participatory process with open dialogue and paradigmatic debate' (Song and M'Gonigle, 2001:985 cited in Robertson & Hull, 2003). This is a qualitatively different vision from the 'normal' scenario where the key to good or 'sound' science is the acquisition of 'hard', reliable facts. From this perspective 'the model for scientific argument is not a formalised deduction but an interactive dialogue' (Funtowicz and Ravetz, 1995:147 cited in Robertson & Hull, 2003).

Central to this vision of public ecology is a 'bio-cultural' view of nature that 'embraces humans as active and integral components of the ecosystem' and suggests the 'limited effectiveness of conservation strategies that privilege biological diversity over cultural

diversity' (Robertson & Hull, 2003:400). It therefore explicitly requires a multi- or trans-disciplinary combination of the natural and social sciences, acknowledges the normative dimensions of all knowledges of nature and thus allows for the legitimate input of lay and expert forms of expertise. There is an important role, in other words, for what Brian Wynne has referred to as 'non-disciplinarity', i.e. the experienced-based knowledge and skills of people on-the-ground (Wynne, 2005: speaking at SoBio Conference).

Although the notion of public ecology is not without its difficulties, as I will discuss in Chapter 10, what is particularly interesting about this approach is its whole-hearted acknowledgment of the uncertainties and subjectivities inherent in conservation decision-making, coupled with a (some might say utopian) belief that such cultural diversities can be accommodated through dialogue in a shared vision of social-ecological sustainability.

The Resilience Alliance is a network of natural and social scientists and nature management practitioners who collaborate to explore the dynamics of social-ecological systems (SES) for the purpose of building sustainability. Central to this approach is the concept of social-ecological resilience, which is why the approach is sometimes referred to as 'resilience science'. Resilience is defined as 'the capacity of a system to absorb disturbance, undergo change and still retain essentially the same function, structure, identity, and feedbacks' (Resilience Alliance, on-line). Resilient social-ecological systems are understood to be characterised by complexity, diversity and hence flexibility – they have the potential, as such 'to sustain development by responding to and shaping change in a manner that does not lead to loss of future options' (Berkes et al, 2002:1).

What is particularly interesting about this approach is its attempt to explain the purpose of biodiversity, rather than presenting it as a indisputable value in and of itself, as is so frequently the case. Biodiversity, here, is understood to contribute to systems resilience - and a resilient social-ecological system is synonymous with ecological, economic and social sustainability. Diversity provides the adaptive capacity to cope with unpredictable change. The diversity that we need to support and cultivate, however, is not limited to natural diversity. We must also nurture a diversity of ways of 'knowing' nature. Iterative, grounded methods of learning where people build skills and knowledge 'by-doing' are more flexible and adaptive than large centralised responses. Proponents of the resilience school thus encourage learning contexts where people on-the-ground can build skills and sensitivities to situated nature. It draws heavily on a dwelling perspective (Berkes et al, 2002).

Also of particular interest is an attempt to address the interconnectedness of 'social' and 'ecological' issues - hence the term 'social-ecological systems'. These are defined as integrated systems 'in which the dynamics of the social and ecosystem domains are strongly linked and of equal weight' (Resilience Alliance, on line). The resilience alliance thus explore the changing contours of nature-society relations through drawing less rigid lines between the 'social' and the 'natural'.

The resilience of social institutions is considered as important for overall social-ecological resilience as issues of species and habitat diversity.

The adaptive capacity of all levels of society is constrained by the resilience of their institutions and the natural systems on which they depend. The greater their resilience, the greater is their ability to absorb shocks and perturbations and adapt to change. Conversely the less resilient the system, the greater the vulnerability of institutions and societies to cope and adapt to change. Social-ecological

resilience is in part determined by the livelihood security of an individual or group (Berkes et al, 2002:12).

By maintaining diversity we build the adaptive capacity of all levels of nature-society to adapt to change. This adaptive capacity is constrained not only by the resilience of the natural systems upon which we all depend but also by the resilience of our social institutions (i.e. the habitualised behaviours, patterns, norms and rules governing society).

The following quote explains the significance of diversity with respect to this resilience:

Natural systems are inherently resilient but just as their capacity to cope with disturbance can be degraded, so can it be enhanced. The key to resilience in social-ecological systems is diversity. Biodiversity plays a crucial role by providing functional redundancy. For example, in a grassland ecosystem, several different species will commonly perform nitrogen fixation, but each species may respond differently to climatic events, thus ensuring that even though some species may be lost, the process of nitrogen fixation within the grassland ecosystem will continue. Similarly, when the management of a resource is shared by a diverse group of stakeholders (e.g., local resource users, research scientists, community members with traditional knowledge, government representatives, etc.), decision-making is better informed and more options exist for testing policies. Active adaptive management whereby management actions are designed as experiments encouraging learning and novelty, thus increases resilience in social-ecological systems (Resilience Alliance, on-line).

Drawing on ideas emerging at the interface of ecology, ecological economics and rural sociology, Adger (2000) explores the usefulness of resilience as a characteristic for describing the social and economic situation of a social group. In a paper entitled 'Social and ecological resilience are they related?', Adger defines social resilience as 'the ability of communities to withstand external shocks to their social infrastructure' (ibid: 361). On the basis of research into the privatization of mangroves in Vietnam as well as a number of other studies, Adger suggests that 'there is a clear link between social and ecological resilience, particularly for social groups or communities that are dependent on ecological and environmental resources for their livelihoods' (ibid: abstract).

He points to Freudenberg (1992) who shows how communities dependent on a single mineral resource are severely constrained in their ability to adapt. While often actively encouraged to diversify (to avoid cyclical economic swings) these communities find themselves constrained by landscape, distribution of resources, access to technology and training resources (Adger, 2000).

This is not to suggest, however, that resilient ecosystems enable resilient communities or that ecological dependency is the only factor determining social vulnerability. South-east Asian communities heavily dependent on coastal resources maintain social resilience despite their dependency on a single ecosystem. This is due to a host of complex institutional arrangements: 'local level property rights associated with coastal resources for example, are complex mixes of state, private and regulated and unregulated commons, often nested within each other and all changing and evolving over time' (Adger, 2002: 353 see also Walters, 1994, Adger and Luttrell, 2000). Vulnerability and resilience, then, must then be contextualised by these social and institutional factors.

Thus resilience (which is a loose antonym for vulnerability), he concludes, depends on the diversity of the ecosystem as well as the institutional rules which govern the social systems (Adger, 2000: 354). Some of the key factors underpinning the socio-economic aspects of resilience include the nature of economic growth, the distribution of income among populations, and the stability of livelihoods and levels of social capital. Social resilience, thus, he argues, may be an important component of the circumstances under which individuals and social groups adapt to change, including environmental change.

Both resilience science and public ecology are based on an understanding of natural and social systems as inherently complex, interrelated and unpredictable. This is the essence of 'complex systems' thinking. As Levin argues: 'there is an emerging understanding that many of our resource and environmental problems are complex system problems' (Levin 1999, cited in Berkes, 2002:2). Such complexity, it is argued, presents a huge challenge for disciplinary approaches: 'phenomena whose causes are multiple, diverse and dispersed cannot be understood, let alone managed or controlled, through scientific activity on traditional disciplinary lines' (Jasanoff et al, 1997 cited in Berkes et al, 2002:2). Complex systems thinking is at the basis of many new integrative approaches (Berkes et al, 2002: 2).

In highlighting uncertainties, both approaches emphasise the need for contextual or place-based knowledges of nature, endlessly tuned to local human conditions and practices. Such knowledge, in other words, is locally-born and adaptive. The principles of adaptive management, whereby management actions are designed as experiments encouraging learning and novelty are thus equally at the heart of both new approaches. Robertson and Hull describe adaptive management as a 'cornerstone' of more public ecology (2002); while resilience science considers it a means of 'ensuring systems resilience' (Resilience Alliance, on-line).

What seems to be emerging from both (and many other) new approaches to social-ecological relations then, is a concern with the significance of 'place'. This is a concept which the next Chapter will argue holds considerable promise as a means of 'reconnecting' the 'social' and the 'natural'. Robertson and Hull describe adaptive management as 'an inductive hands-on approach to ecological knowledge [that] allows

for conceptualisations of *places*, projects and problems to evolve as new knowledge of each is acquired' (Robertson et al, 2001: 975, emphasis added). Environmental knowledge they argue 'should be particular both to the people using it and to the *places* where it is used (idem: 974, emphasis added). Berkes (2004) following Kates et al (2001) supports this requirement for 'place-based models' because 'understanding the dynamic interaction between nature and society' he argues, 'requires case studies situated in particular *places*' (Berkes, 2004:624, emphasis added).

Of course there is no doubt that a concern for place has always been important in ecological thinking: a focus on species and habitat interactions in particular contexts necessarily entails the study of emplaced phenomena. Until relatively recently, however, such places were predominantly theorised almost entirely in terms of their biophysical or material characteristics: a place was essentially a 'habitat' or 'ecosystem'. In line with these new conceptual shifts, however, 'ecosystems' are increasingly referred to as 'social ecological systems' (SES) while the significance of place-based knowledge, skills and practices are increasingly recognised as central to understanding how such complex systems work. Unfortunately, however, as I will explore in later chapters of this thesis, this new academic thinking has yet to make any real impact on ecological policy or practice, at least in Ireland.

Conclusion

This Chapter explored how sociology and ecology have attempted to draw lines between 'nature' and 'society' but are increasingly finding them impossible to sustain. This blurring of conceptual boundaries is also associated with a questioning of the divide between 'lay' and 'expert' ways of knowing and relating to nature, which has

implications for participatory decision-making in nature conservation: what actors, in other words, should be allowed a role in devising and managing these boundaries? New inter and trans-disciplinary concepts and collaborations suggest that place-based approaches to understanding and managing 'nature' provide insightful ways forward in this respect. These less rigid and more inclusive approaches to nature-society relations - approaches also embracing the complexities, uncertainties and subjectivities inherent in all knowledges of nature - are highly instructive and will be drawn on in later chapters of this thesis. The next Chapter provides the main ideas underpinning this thesis, and draws these together around a discussion of knowledge, place and boundaries.

¹ Sociology's 'questionable heritage' in relation to environmental concerns has been the subject of much debate (Redclift and Benton, 1994). Some have argued for a revision of the classical texts, which, they argue, reveal fruitful and instructive engagements with environmental concerns (including those re-reading Marx (see O'Connor, 1994) or more recently Norbert Elias (see Sutton, 2004)). Others, however, including Catton and Dunlap (1978), Latour (1992) and Irwin (2001) have stressed the need for a paradigm shift based on a more integrative conceptualisation of nature-society relations.

Conceptualising Natura 2000: Knowledge Places and Boundaries

The objective of this Chapter is to set out the theoretical ideas that will be employed in Part II of the thesis and to pull these together around a discussion of knowledge, place and boundaries. In this Chapter, I return to the three sociological accounts mentioned in the previous chapter: accounts that attempt to transgress the materialist/idealist schism of realism/social constructionism. After an opening section introducing the significance of place and boundaries, Section two of this chapter argues that Irwin's articulation of a sociology of scientific knowledge (SSK) based on 'line-drawing' exercises between 'nature' and 'society' is a fruitful way of conceptualising Natura 2000 (Irwin, 2001). Gieryn's analysis of 'boundary-work' further allows us to explore the contested nature of these scientifically-drawn boundaries (Gieryn, 1999). This section also draws on insights from ANT, where the mobility of 'translated' knowledge travels through space to gain an apparent 'placelessness': these processes of translation in Natura 2000 strip places of their inherent 'hybridity' and 'relationality' (Watson, 2003). The central insight of a dwelling perspective, namely that nature and culture are always bound together in places (Cloe & Jones, 2001) is then presented as an alternative to Natura 2000's de-contextualised notion of places as 'habitats'. The final section of this Chapter draws these various strands together, outlining the ideas that will underpin the remaining chapters of this thesis.

Section 4.1. Place and Boundaries

Devising, negotiating and managing the shifting boundaries between nature and society (or the 'natural' and the 'social') lie at the heart of the Natura 2000 endeavour - which is also an attempt to protect nature primarily through the notion of 'places as habitats'. Knowledge, boundaries, place, and indeed place-boundaries as we will see later, are thus in one way or another central to any understanding of the Natura 2000 project and its discontents.

A sociology of scientific knowledge explores the epistemological process of boundary drawing between the social and the natural and, in doing so problematises the existence of definitive boundaries between science and non-science, facts and values and so-called 'lay' and 'expert' knowledges of nature (Irwin, 2001; Gieryn, 1999). An ANT approach, by contrast, attempts to describe an ontological reality without society-nature boundaries while a dwelling perspective depicts (and at times encourages), the experiential reality of emplaced human-nature relations in everyday life – providing thus accounts that deny any real existence of these (and other) conceptual divides and boundaries.

But what do these approaches have to say, if anything, about the concept of place? It is worth noting that place is a concept that, as Watson (2003) argues, has had a particularly difficult time in sociology over the last two decades as conventional academic conceptualisations of place 'appear to have outlived their usefulness' (p145). Fixed, rigid and overly-determined accounts of place 'blind to trans-local processes and

the inequalities that result from them' were considered too 'sedentary, static and parochial for social sciences increasingly concerned with tracing the flows, processes and hybridity of subjects, identities and spaces' (ibid).

In fact, sociologists, as Gieryn has argued:

....have given the appearance of not being interested in place – perhaps preferring to leave the matter to specialists from geography or fearing that environmental determinism would rob social and cultural variables of their explanatory oomph, or worrying that the particularities of discrete places might compromise the generalizing and abstracting ambitions of the discipline (Gieryn, 2000: 464, see also Agnew, 1989).

Appearances however, can be deceptive. In fact there exists, as Gieryn points out 'a tradition of robust sociological studies of place', that remains 'invisible only because it is rarely framed that way' (Gieryn, 2000). Through urban sociology, rural sociology, suburban sociology, sociology of the home, the environment, the workplace and so on, the phenomena of place is essentially chopped up 'into incommunicado bits' (ibid: 464).

Since Relph's (1976) pioneering study of 'place and placelessness', we have been told of the 'transcendence of place' (Coleman 1993), cities 'without a place' (Sorkin 1992) and how place becomes, with modernity, 'phantasmagoric' (Giddens, 1990, cited in Gieryn, 2000: 463). Some have examined the intimate connections people experience with places as encapsulated by the expression 'sense of place'. More recently Urry has explored the changing ways in which places are consumed (both visually and literally) including how the productive, ecological or cultural significance of a place is, over

time, 'depleted, devoured or exhausted by use' (Urry 1995:2). Others have considered contemporary society in terms of the twin co-ordinates of 'place' and 'non-place' (Corcoran, 2004).

Defining place has always posed difficulties. Altman and Low (1992) define it simply as physical space imbued with meaning (p5). Massey defines it as a 'meeting place' where social relations intersect (Massey, 1995). Other attempts to define this notoriously slippery concept often attempt to break it down into its constituent parts. Gieryn (2000) identifies 3 essential elements of place. First, *geographic location* (i.e. the notion that a place is a unique spot in the universe). The places included in this definition (while they can vary in scale from a room to a region) are clearly not 'virtual'. While they have 'finitude', however, they also 'nest logically because the boundaries are (analytically and phenomenologically) elastic' (ibid). Second, place has *material form*. Whether an inner city office complex or remote wildlife sanctuary, places are assemblages of 'stuff' or things (see Bijker et al, 1987; MacKenzie 1990). Finally, places are invested with *meaning and value*. A geographical location only becomes a 'place', in other words, when it is socially or culturally interpreted as such. In order to avoid a reductionist or determinist conceptualisation of place, Gieryn argues that these three key elements should remain 'bundled'. Such an approach, therefore, 'precludes geographic fetishism' [...] 'environmental determinism' and 'unbridled social constructionism' (ibid: 466). A more place sensitive sociology, he argues, should attempt to see all phenomena as 'emplaced' – i.e. as 'constituted in part though

location, material form and their imaginings' (Gieryn, 2000:467, see also Appadurai 1996).

Accounts focusing more on the dynamic nature of place construction have presented place as the intersection of three '*forces*'. Drawing on the work of several place writers, Cheng et al outline these as: 1) biophysical attributes and processes, 2) social and political processes and 3) social and cultural meanings.

- Biophysical attributes and processes include naturally occurring and human made physical features and processes such as climate, nutrient flows, predator-prey relationships, animal and human migrations, hydrologic regimes and the like.

- Social and political processes encompass various types of human interactions from familial relations to resource user conflicts to political power plays. These include formal and informal rules (e.g. statutes, regulations, treaties, norms) governing conduct.

- Social and cultural meanings are the ideas, values and beliefs that order the world.
(Cheng et al, 2003: 91, drawing on Canter, 1977; Relph, 1976; and Sack, 1992)

Each force, it is argued, 'provides a type of "information" that allows people to define who they are and how they might behave in that place' (ibid). Similar (if not identical) materialities can have very different meanings (and thus expectations of behaviour) when located in different places. The practice of tree logging in designated wilderness areas, for example, might be both culturally inappropriate and legally impermissible whereas the same practice (with almost identical trees) on privately held land might be neither (ibid: 91).

Although Cheng et al acknowledge the dynamism of places, their deconstruction of place into discrete conceptual categories reproduces the nature-society dualism - a dualism that the concept of place arguably holds the potential to move away from. There is a sense in which the three forces of place construction are assumed to be acting separately. While Gieryn's account also breaks down the component parts of place for definitional purposes, he does this so as to urge the importance of a more '*bundled*' conceptualisation. Cheng et al, by contrast, fail to consider how the three 'forces' might combine and interact or be mutually constituted: how, for example, our understanding of biophysical attributes of places are bound up with the social meanings we attribute to them through social processes and practices of engagement between human and non-human nature.

All of these accounts have questioned what place is and considered the extent to which it remains a relevant sociological concept. Of particular interest to this study, however, are accounts focused more specifically on place as a bridging concept between the social and the natural – accounts, in other words, which emphasise the hybridity and relationality of place in terms of nature-society relations. If the concept of place is to offer an alternative pathway though the nature and society divide we must adopt an approach that remains '*bundled*' thereby allowing us to blur conceptual boundaries. The next section will explore the extent to which SSK, ANT and a Dwelling perspective can assist such an understanding while considering their potential utility to this thesis.

Section 4.2. SSK, ANT and a Dwelling Perspective: Knowledge, Place and

Boundaries

A Sociology of Scientific Knowledge

Irwin's attempt to circumvent nature-society and realist-social constructionist divides through the notion of 'co-construction' does not explicitly focus on the concept of place. However, in drawing heavily on a SSK tradition, Irwin urges us to examine the contexts (social, cultural and ecological) within which all knowledges of nature (and especially scientific) are produced or constructed (see Chapter 3). Because such contexts necessarily entail spatial and temporal dimensions (all knowledge is constructed in particular places at particular times) it could be argued that Irwin's approach implicitly allows for place-based forms of analysis. Irwin's suggestion that we explore 'the very *process* of line-drawing' between the social and the natural as it occurs and re-occurs in situated contexts (rather than trying to definitively draw that line ourselves as sociologists) is useful and highly pertinent to any study of protected 'natural' places. While places, from this perspective are essentially 'hybrids', Irwin's articulation of co-construction reveals the manner by which the hybridity of place is obscured, or as Latour would argue, purified.

Chapter 2 revealed the extent to which line-drawing under Natura 2000 depends on the authority of science. While most SSK accounts focus 'upstream' i.e. on the practices of scientists as they attempt to produce credible science, Gieryn suggests that the cultural authority of science lies 'downstream', when scientific claims leave laboratories and enter boardrooms, courtrooms, political arenas and other locales. In these contexts,

science takes the form of a 'pliable cultural space' wherein stakeholders (scientists and non-scientists) engage in "boundary work" constructing conceptual 'maps' of what is and what is not legitimate science (Gieryn, 1999). Credible science is thus continually 'mapped out' in particular circumstances:

The cultural space of science is a vessel of authority, but what it holds inside can only be known after the contest ends, when trust and credibility have been located here but not there (Gieryn, 1999: 15).

Mapping the boundaries of credible science on a particular issue may entail several genres of "boundary work". One genre involves 'exclusion'. In this case, neither side in the contest wishes to challenge the epistemic authority of science itself but rather to deny access to this space to others who, it is argued, do not belong (Gieryn, 1999:16). Discrepant claims based on 'questionable', 'deviant', 'fraudulent' or 'popular' science, in other words, are propelled outside the boundaries of 'real science'. Chapters 6 and 7 will show how this occurs when conservationist NGOs challenge the 'questionable science' upon which the state's line-drawing is based.

Another genre involves 'expansion'. This is where rival epistemic authorities compete for 'jurisdictional control' over a 'contested ontological domain' (Gieryn, 1999:16). Proponents of science may attempt to expand its boundaries to include areas of reality not previously regulated by science while those invoking religion, ethics, politics, lay knowledges, common sense and so on may contest the exclusive authority of science to judge truths in this domain. As we will see in Chapter 8, this type of contest is on-going in the Owenduff Nephin Complex as ecologists attempt to push forward the boundaries of science into new arenas and local people attempt to push them back. Locals resist

the 'scientization' of their place through a reliance on other ways of knowing and relating to the area.

Mapping the boundaries of credible science, Gieryn argues, involves 'the endless edging and filing of its boundaries, sustained over lots of local situations and episodic moments, but 'science' never takes on exactly the same shape or contents from contest to contest' (Gieryn, 1999:14).

Actor-Network-Theory

As briefly outlined in Chapter 3, Actor Network Theory entails a more radical disjuncture with modern ways of thinking of nature-society relations, moving beyond these very categories in its analysis of a 'middle kingdom' of not-quite-social, not-quite-natural entities. ANT thus describes a world devoid of many modern conceptual boundaries. By urging us to 'think relationally' about all manner of things and entities, ANT effectively blurs the culture-nature divide as it explores the collective capacity of relational networks of 'actants'. The process of purification then represents a post-hoc boundary-drawing exercise wherein hybrid phenomena are relocated to either the social or natural realms or 'kingdoms' (Castree and MacMillan, 2001).

By challenging several modern ontological assumptions, ANT provides a refreshing and illuminating, if at times unsettling, account of human-nature relations. It is unsettling in that it forces us to 'unlearn' some well-established 'givens' and to perceive the world from an alternative vantage point - without, that is, the familiar

'tools of the trade' such as binarism, asymmetry and centred understandings of power (ibid). In doing so we gain a glimpse of the complexity and richness of a messy, complex and de-compartmentalised world.

While this study will draw heavily on ANT inspired notions of 'translation' which I discuss later in this chapter, it will not employ a 'full-blown' ANT analysis embracing the notion of networks of actants sharing relational agency. There are several reasons for this. First, there is what Laurier and Philo (1999) argue as the "problem of installing a great indifference between the countless things of the world..... which arises when they end up portrayed as potentially all the same". Also, while power and agency may be more diffuse and de-centred than conventional accounts portray, humans and human systems clearly exercise a disproportionate agential role in networked processes (p1016).

Species and habitats protected under Natura 2000, for example, may play a part in the achievement or otherwise of their protected status through networked processes, by allowing themselves to be enrolled in the network or through betraying network objectives. However, as shown in Chapter two's discussion of Natura 2000 science, *human* decisions, commitments, choices and value-judgments ultimately shape the knowledge employed to draw lines between 'nature' and 'society' in ways which non-humans cannot. Relational agency, in other words, obscures the *precise contributions* of discrete actors and actants (including those of non-human actants, see Cloke et al, 2001). Finally, while ANT does provide richly descriptive accounts of socio-natural

material interactions, the extent to which it can fully explain these ‘imbroglios’ is less clear. As Murdoch (1997: 750) asks ‘can..... we ever do anything more than describe, in prosaic fashion, the dangerous imbroglios that enmesh us?’

The extent to which ANT can adequately account for the significance of place is open to question. Thrift (1999) argues that

.... for all their studies of particular locations like laboratories Latour and other actor network theorists often fail to see the importance of place: their vision of a radically symmetrical world of networks [.....] is an important corrective to simple humanisms and to simple notions of connectedness, but it also means that actor network theory cannot speak of certain things. In particular Latour and other actor network theorists often fail to see the importance of place because they are reluctant to ascribe different competences to different aspects of a network or to understand the role of common ground in how networks echo back and forth, often unwittingly (Thrift, 1999:313).

Thus while ANT does provide a persuasive account of how all manner of hybrid things constantly combine and recombine through networks, it ‘cannot easily be used to recognise how these coming together can have qualities which can be seen as forms of dwelling or place formation’ (Cloeke et al, 2001:650).

Irrespective of whether ANT can adequately grapple with the significance of place in terms of dwelling, an ANT informed understanding of *how knowledge moves through places* is highly pertinent to this study. As with SSK, ANT theorists (and those such as Latour with a foot in either camp) acknowledge that all knowledge is originally produced in particular places. Particularly instructive in this respect, however, is the ANT proposition that scientific knowledge differs from other forms of knowledge by

achieving a mobility that allows it to travel far beyond its original site of production and, in a sense, colonise other emplaced phenomena under the guise of its standardising, 'placeless' authority. An ANT inspired account can reveal how knowledge of 'stuff' in one locale when translated to become 'mobile, stable and combinable' (an 'immutable mobile') (Latour, 1987) can allow central knowledge-accumulating places to dominate peripheral ones. Through the process of translation, discrete 'traces' of knowledge are gathered and accumulated and eventually converge in 'centres of calculation' or 'truth spots' (ibid). As Latour puts it: 'if those conditions are met then a small provincial town, or an obscure laboratory or a puny little company in a garage, that were at first as weak as any other place will become centres dominating at a distance many other places' (ibid: 223).

In a paper entitled '*Performing Place in Nature Reserves*', Watson's study of Godlingston's lowland heath in the UK shows how through a series of scientific 'translations' the area in question eventually became protected under international legislation (including designation as a Natura 2000 site) under the generic terminology of 'lowland heath'. He argues that:

For lowland heath to come to have a place in international legislation or national priority frameworks, it has to exist as something that can be brought together with other entities, other habitats or species in the limited spatial and cultural locales in which these decisions are made. Different habitats have to be brought together in a single building, perhaps even at some stage on a single desk, so that they can be weighed against each other, priorities set and conservation targets established. For this to happen, lowland heath has to exist as something mobile, something that, as it moves between different spaces in the processes of description and prioritization, has stable and transparent meaning, at least within the particular cultural contexts where these decisions are made (Watson, 2003: 151).

The controversial science upon which Natura 2000 is based, as discussed in Chapter two, thus entails a series of translations turning the messy materiality of discrete and unique hybrid places into ‘habitats’ – so as to meet with the requirements of universalistic taxonomy. Places thus become standardised ecological texts complete with descriptive charts, floristic tables and species lists. These translations converged in the form of the CORINE Biotopes classification, only to be further translated as the annexes to the Habitats Directive, as discussed in Chapter two.

Watson’s study combines ANT insights with a relational conceptualisation of place.

He defines place as:

the emergent effect of heterogeneous relationships, distributed across conventional boundaries between entities as well as through time and space (Watson 2003: 145).

Godlingston’s lowland heath, he argues, is a performance carried out by a diversity of human and non-human actors. He goes on to show how Godlingston (considered a habitat of international biodiversity importance) emerges not only from multiple, immediate practices of engagement but also through a series of globally distributed relationships. Close inspection of the materiality of the place reveals how bodily engagements (of people and animals) are transformative of the place but also how a fence (constructed as a means to control grazing) represents the material transformation of this specific locale as a result of generic frameworks devised further a-field:

The fence is the materialization of processes that constitute Godlingston as a scientific object, reduced to standardized mobile representations based on systematic and universalistic classifications (Watson, 2003:152).

The 'performativity' of place (see also MacKensie, 2002; Thrift, 1999; Thrift and Dewsbury 2000) reminds us that places are 'endlessly made' (Gieryn, 2000) and always 'in the process of becoming' (Massey, 1999:283) both materially and semiotically.

While considerable research has been carried out detailing these processes of translation as local knowledge becomes mobile and is exported via extended scientific networks to 'colonise' other places (see Clark and Murdoch, 1997), less research appears to have been carried out exploring the reverse process. Watson (2003) explains that:

less often examined, however, is the way in which the processes of translation that lead to the construction of expert knowledge are reversed, passing through different pathways of translation, being transformed as it is negotiated into successive contexts of practice and decision-making on their paths back to the specific (Watson, 2003: 156).

Under Natura 2000, this process of reverse translation of SACs begins at the first stage in the designation process discussed in Chapter 2. Here, Member States must produce national lists of places within their own territories hosting the flora, fauna and habitat-types identified as 'of Community interest' at EU level. The generic species and habitat types in the annexes to the Habitats Directive must be translated back to apply to national conditions. Translating places into SPAs under the Birds Directive, as explained in Chapter 2, is less convoluted. Member States must translate places as habitats for the birds listed in Annex I to the Birds Directive and these are directly incorporated into the network. The reverse process of translation from the generic back to the specific is thus more applicable to SAC designations. Both types of

designation, however, entail the translation of place to habitat and thus the reduction of place to a simplified, generic format.

Waterton's (2002) paper '*From Field to Fantasy: Classifying Nature, Constructing Europe*' explores 'reversibility' in the context of two generic nature classification systems: the UK's National Vegetation Classifications (NVC) and the EU's CORINE Biotopes classifications as discussed in Chapter 2.

Waterton explains how implementation of the Habitats Directive required that certain European habitat classifications (taken from CORINE Biotopes) had to be translated back into 'the vernacular classifications of nature (habitats, vegetation, communities or other relevant units) of the member states' (2002:189). A UK specialist working group was charged with the task of re-defining the CORINE class 'Tilio-Acerion mixed ravine and slope forests' (*Tilio-Acerion* for short) defined as 'cool, moist forests with a multi specific tree layer of variable dominance most often on more or less abrupt slopes' in native terms (ibid: 191). Waterton describes how this first stage in *Tilio-Acerion*'s reverse 'journey' reveals the precarious nature of this translation:

.... the specialist woodland working group had a number of awkward things to consider, given their prior knowledge of the woodlands of the UK. First of the two characteristic maple (*Acer*) species of the *Tilio-Acerion*, sycamore (or *Acer pseudoplatanus* to give it its scientific name) is not a native species in Britain, but was 'introduced' to the British flora probably around 500 years ago. As a result, it is a peculiarly British phenomenon that the vegetation community *Tilio-Acerion* inspires a number of questions surrounding an on-going debate about 'native' values in British conservation, and the desirability of conserving (or conversely literally destroying) these trees in British conservation sites. Immediately this European scientific classification has lost universality; it is being discussed and transformed in the context of intricate, local, cultural meaning.

Secondly, a related problem is that native lime woods (the two relevant limes are *Tilia platyphyllos* and *Tilia cordata*) exist in Britain today only in fragmentary form – that is, they are eight rare ‘relic’ vegetations, or they are non-viable as a natural self-sustaining species. However, there do exist woodlands that have some scattered occurrence of lime in them, and that have a flora that is associated with lime – in a sense lime woodlands without the dominance of lime trees. But due to the occurrence of ash trees in this kind of woodland, such woodlands are represented in the National Vegetation Classification as Ash woodlands, found particularly in upland areas of the Northern and Western parts of the Britain. So the NVC category most similar to the *Tilio-Acerion* European category is called ‘W8-Ash’. Again an immediate adaptation to local scientific knowledge in a new context has taken place, with corresponding shifts in meaning and emphases (ibid:191-192).

Waterton’s paper provides further insights into this reverse process of translation.

Drawing on her ethnographic fieldwork as a National Vegetation Classifications (NVC) student in the UK, she discusses some of the difficulties inherent in ‘classifying’ a piece of grassland as a homogeneous strand of vegetation.

We had been told that this first step in the classification of a vegetation community is a “general visual skill” – being able to recognise uniformity of colour and texture in the vegetation, repetition of any patterning over the ground and consistency of vertical layering in the vegetation. [...]But faced with varying shades of texture and plant cover on a real hillside, an immediate problem became apparent to us students: there were no truly homogenous patches. What looked homogenous from one viewpoint (say 20 metres away) suddenly seemed continuous with other different looking ‘types’ of vegetation at closer range. So it was with some difficulty that we placed a 2x2 metre square boundary around a patch of vegetation that looked, from a distance, to be relatively homogeneous, but which, at close range, could not easily be contrasted with any ‘other’ patch. One could not avoid thinking of the philosophical foundations of vegetation classification. Was Henry Gleason, the American ecologist right after all? Perhaps vegetation is actually one vast continuum, rather than a set of discreet communities? (Waterton 2002:185).

The above quote underlines the uncertainties and subjectivities at the heart of all attempts to know ‘nature’ - a nature that Chapter 3 has shown to be inevitably contested. These attempts to apply the generic back to the specific also reveal the

'precarious' nature of the extension of science beyond its immediate locale (Clark and Murdoch, 1997). The impoverished translations that 'arrive back home' under Natura 2000, cannot easily account for the complex interplay of materialities and meanings that give places their essence as 'unique spots in the universe' (Gieryn, 2000). Place as 'text and data' is perhaps manageable in a policy context but often meaningless in a local one. As Latour argues 'the gain does not always offset the losses that are entailed by the translation of one form into another' (Latour, 1987: 236).

Once these translations enter the policy domain, Waterton notes how:

....[t]heir categories quickly become unstable, mutating and interacting in sometimes unpredictable ways' (2002, abstract) [.....] [Thus] in the midst of a complex policy context, the origins and genealogy of scientific bodies of knowledge are epistemologically as well as ontologically complex and often practically untraceable (2002: 197).

In the national context, for example, European classifications are often used opportunistically as a local resource by conservationists attempting to ensure protection for vulnerable species and habitats likely to be overlooked. Individual Member State concerns and circumstances often combine and interact with European concerns and obligations. The translation process from European back to national level, she argues, is not *only* one of a European habitat classification to a national one:

It is a process of that but in addition it is a *process of envisaging sites* – areas of land that will become designated, with all the restrictions on land use that that entails (Waterton, 2002:193 emphasis added)

Considerable flexibility on the part of conservationists is required to deal with the tensions felt in juggling concerns for specifically national level exigencies and responsibilities felt for the overall coherence, authority and hence success of the

European conservationist agenda. Too little flexibility can restrict or deny the former, whereas too much could fatally impair the latter. Science must maintain its colonising status but it must also be bent and moulded, in a sense 'de-colonised' for it to work, or make sense at local levels.

An ANT-inspired approach can provide insights into many aspects of Natura 2000. From the earliest translations of places to habitats, their accumulation and convergence in the 'truth spots' of European boardrooms and their reverse journeys back home to the specific, ANT might be employed to explore many aspects of this protracted process of SAC designation. Although SPA designations entail less 'travel', the translation of these places into 'habitats' still relies heavily on their mobility: designations are negotiated at national level and checked and assessed at EU level on the grounds of criteria in the Birds Directive. In both cases, moreover, translations of these places as habitats eventually arrive back *in situ* and are confronted with alternative, local understandings.

A Dwelling Perspective

Macnaghtan and Urry's (1998) suggestion that we focus on embedded practices with (and sensual experiences of) embodied nature is inspired by an articulation of the 'dwelling perspective'. Martin Heidegger's concept of 'dwelling', revived through the work of Tim Ingold (1993, 1995, 2000, 2005) and subsequently explored and developed by others including Thrift (1996), Bender (1998), Macnaghtan and Urry (1998, 2001), Cloke et al (2001) and Berkes (2004), circumvents the nature-society

dichotomy by way of a relational understanding of place produced through embodied and embedded human practices with local nature.

Heidegger's work emphasised how people are always 'embedded in the world' challenging thereby 'the Cartesian split of mind from body and culture from nature' (Cloke et al, 2001:651, see also Bender 1998; Crang 1998; Thrift 1996). Instead of thinking of culture as a model of learned classifications that order the meanings people give to their material surroundings, Heidegger suggested that knowledge of the world is always gained through direct engagement with it. This recognition implies a shift in thinking away from the 'building perspective' (where 'ideal human mental constructs are imposed (or built) on the world') to a 'dwelling perspective' (where 'any act of building, living or even thinking, is formed in the context of already being-in-the-world') (ibid: 651).

Ingold's revival of the concept focused more specifically on dwelling as the practical engagement of humans with others of 'the dwelt-in ecosystem' (Ingold, 2000: 25 cited in Berkes, 2004). Whereas Heidegger's "being in the world" was 'unequivocally human', Ingold reminds us that 'human beings are not the only dwellers or inhabitants of this planet' (Ingold, 1995:504) Fundamental to Ingold's dwelling perspective, therefore, is the thesis that 'the production of life involves the unfolding of a field of relations that crosscuts the boundary between human and non-human' (ibid). As regards specifically human practices with nature, Ingold discusses the landscape as constituted through the 'taskscape', i.e. where the routine practices of humans form

familiar patterns which can become landscapes or places (Clope et al, 2001:652).

Ingold thus alerts our attention to:

the very real material processes of people's skills in using tools and in knowing the properties and behaviours of animal and plant species as well as how these interactions with non-humans are enfolded in perceptions of effect, value and relationship (Campbell, 2005:288).

The landscape thus bears witness to the lives and experiences of past generations who dwelt within it - and in doing so, 'left behind something of themselves' (Ingold, 1993:152). Ingold engages with the temporal nature of the landscape by employing a distinction between what he terms the A- and B- series of time. In the B series of time events are viewed as if strung out in time like beads positioned upon a piece of string; it is an empiricist and objectivist sense of time. In the A series of time which Ingold adopts by contrast 'present events involve some pattern of retention from the past and necessitate projections into the future' (Macnaghtan and Urry, 1998:167). Drawing on this latter notion of time, Ingold's dwelling perspective suggests that both past and future are 'co-present with the present' (Ingold, 1993:152).

Berkes (2004) engagement with dwelling takes up the particular point of emplaced skills and uses it to problematise a strict divide between 'lay' and 'expert' knowledges of nature. He argues that it is only through habitual engagements with emplaced non-human nature that people can build ecological knowledge and maintain, establish or re-establish social-ecological relationships. This entails the 'skills, sensitivities and orientations that have developed through the long experience of conducting one's life in a particular environment' (Ingold, 2000: 25 cited in Berkes, 2004: 623).

While various articulations of dwelling exist (often varying in the extent to which they provide descriptive and/or normative accounts of human-non-human relationships), in most cases it seems that dwelling is essentially about the rich, intimate interrelatedness of things and beings which come together to constitute landscapes and places, binding nature and culture together over time (Cloke et al, 2001: 651).

A dwelling perspective, as Ingold argues, provides a means to

...move beyond the sterile opposition between the naturalistic view of the landscape as a neutral, external backdrop to human activities and the culturalistic view that every landscape is a particular cognitive or symbolic ordering of space (Ingold, 1993:152).

Place, as articulated in terms of the dwelling perspective, thus offers an insightful way through some key sociological debates and dichotomies (i.e. idealist-realist and nature-society dichotomies) while revealing the centrality of embodied, locally embedded practices in understanding peoples relationships with non-human nature. Dwelling, as such, may well assist an understanding of how Natura 2000 protected sites are experienced locally by those who 'dwell' there. As Campbell (2005) explains:

If ontologically speaking, people understand environments primarily through engaged practices of dwelling rather than through mediations of concepts, this opens up important new ways of thinking about the anthropological effects of nature conservation (p288).

Protected areas for conservation tend to be built on standardised administrative ideas for spatial and zonal regulation [...] which categorise biotic qualities and appropriate human use-management regimes [but they] do not address the lived-in experience of place, central to people's sense of environmental relationship (p293).

The dwelling perspective, while much celebrated, has also been criticised by a number of commentators, many of whom call for a more developed understanding of the concept adapted to the conditions of modernity. Macnaghtan and Urry (1998) suggest application of the concept to more global phenomena and ways of being-in-the-world. Cloke & Jones (2001) and Watson (2003) are among those suggesting that assumptions regarding authenticity and spatial boundedness are more problematic under contemporary conditions of late capitalism and heightened globalisation. Heidegger's articulation of dwelling, in particular, is often criticised as being overly focused on the authenticity of local dwelling and practices based on the 'oneness' of being 'rooted' in local nature. The authenticity of enduring, intimate, human-nature relations, in other words, implies the in-authenticity of other ways of relating to nature (see also Bender, 1998; Harvey, 1996). This can lead to 'a view of true nature, or authentic landscapes, or communities, as consisting of diminishing pockets of harmonious authentic dwelling in an ever-encroaching sea of alienation' (Cloke et al, 2001; 657).

Based on research carried out in a traditional orchard in Somerset, Cloke et al (2001) attempt to develop a more critical appreciation of the dwelling perspective. Although the orchard is frequently presented as a site of authentic, local practices with nature, Cloke et al reveal how all manner of things, practices, technologies, people and ideas converge in the orchard, rendering assumptions of authenticity and rootedness 'a redundant vision impossible to maintain' (Cloke et al, 2001:657).

If a dwelling perspective is to retain relevance in a highly industrialised, modernist and capitalist world, it must shed its reliance upon notions of idyllic, authentic and spatially proximal practices through which humans enjoy a 'pure relationship' with non-human nature. As Cloke et al argue it must 'reflect a view of space and place which is dynamic, overlapping and interpenetrating' (Cloke et al 2001: 661, Watson, 2003, see also Bender 1998 and Harvey 1996).

This notion of dwelling, one that recognises the fluidity of place construction across conventional boundaries and the fact that humans (and non-humans) can dwell *differently* in the same place, is highly pertinent to this study. Despite the criticisms of some idealised notions of people-place 'authenticity', the central insight of a dwelling perspective, namely that *nature and culture are bound together in a 'place'* is fundamental to this study in that it provides a useful counter-point to the translated, 'unbundled' and de-contextualised concept of place as 'habitat'. As Williams and Patterson claim (1996):

The concept of place embeds [natural] resource attributes back into the system of which they are a part, reminding managers that resources exist in a meaning-filled spatial (and temporal) context. Recognising and understanding this context is the principal contribution of the social sciences to ecosystem management (p508-509, cited in Cheng et al, 2003).

Section 4.3. Summary of theoretical perspective

Drawing to some extent on all the above accounts and studies, my research is premised on a relational understanding of place as 'hybrid' – an understanding that conflicts considerably with Natura 2000's impoverished and objectified notions of place as

'habitat'. Natura 2000 is presented as a contingent and contested process of line-drawing between 'nature' and 'society' (Irwin, 2001). As discussed in Chapter 2, this process is based on a controversial, uncertain, culturally and politically mediated 'science', the boundaries of which are continually contested (Gieryn, 2000). This thesis will consider line-drawing in two, inter-related respects: First, line drawing in the *cognitive* sense (the endless drawing and re-drawing of *conceptual boundaries* between the 'social' and the 'natural') and second, line-drawing in the *geographic* sense (the process of devising actual *place boundaries* as 'habitats'). While this latter (i.e. geographic) line-drawing process is, of course, also a cognitive exercise it is also, significantly, an exercise in 'place-making' (Gieryn, 2000).

Thus in spite of the apparent 'placelessness' of Natura 2000 science, my research is also premised on an understanding of the Natura 2000 endeavour as an exercise in place-making. Gieryn explains how:

the making of places - identifying, designating, designing, building, using, interpreting [and] remembering [of places] - has been examined in 3 sociological literatures only sometimes brought together: upstream forces that drive the creation of places with power and wealth; professional practices of place-experts; perceptions and attributions by ordinary people who experience place (and act on those understandings) (Gieryn, 2000: 468).

As suggested in Chapter 2, Natura 2000 is in one sense part of a broader place-making exercise at European level as some rural (often 'peripheral') places are reconstituted as 'habitat' by upstream forces from further afield. Natura 2000 also entails place-making exercises at national level as specific sites are envisaged as habitats in compliance with EU obligations, as we will see in Chapter 6. In this case, drawing the line between the

'social' and 'natural' by professional place experts (Gieryn, 2000) entails the literal *drawing* of lines or boundaries on a map as decisions are made regarding what is 'authentically' natural or not, in specific places. *Managing* or maintaining the authenticity of these places, as described under Article 6 of the Habitats Directive (see Chapter 2 and Appendix I), then requires an on-going cognitive process of nature-society line-drawing as all future land-use decisions must respect the 'integrity' of the places translated into 'habitats'.

Two case studies will be used to explore different stages in these place-making and line-drawing exercises: one at the pre-designation phase, i.e. when 'place as habitat' is literally under construction, and another at the post-designation phase, i.e. when the drawing is (at least ostensibly) complete. In Chapter 7, the first case study will explore some of the difficulties encountered when translating a place into a habitat, while in Chapter 8 the second case study will consider the clash in meanings that occurs when 'habitats' clash with a plethora of alternative, locally constituted place meanings. This second case study thus focuses on the *last* stage of the reverse journey of translation, i.e. when place as habitat 'arrives back home'.

In my analysis of both case studies I seek to reveal some of the challenges facing those attempting to devise, negotiate or manage these boundary lines *and* how opponents of designation challenge, resist and negotiate these developments. But as well as addressing the conflicts and tensions between locals and Natura 2000 (how locals attempt to resist this place 'scientization' process), I will also address the divides

and tensions emerging on the ground among and between locals themselves, often partly exacerbated by this newly imposed place-making exercise and the unevenly felt implications it has for people-place relations on the ground. Although local people do not experience one 'pure' or 'authentic' relationship with 'nature' (they may partake in many discrete and shared place performances), Chapter 9 will consider the extent to which they experience these 'unique spots in the universe' (Gieryn, 2000) as dwelling places: places where the social and the natural are mutually constituted in their everyday lives, bound together in dynamic and dialectic relationships.

Chapter 5: Methodology

As stated in Chapter one, I embarked on this research with three objectives in mind: to develop a sociological understanding of Natura 2000 conflicts in Ireland; to contribute towards less bounded and dichotomous sociological understandings of nature-society relations; and to make recommendations, where possible, for less divisive and more effective forms of nature conservation. This Chapter outlines the methods employed to achieve these objectives.

Section 5.1. Research Design

As in all research, the theoretical leanings, choices and interests of the researcher to some extent determine the formulation of research questions and the manner in which they are researched and analysed. My interest in exploring the contextual and contingent nature of *situated* people-nature relationships thus partly underpins the direction of this research and the methods employed. These relationships are an area of study more amenable to qualitative than quantitative analysis (Irwin, 2001). As Silverman (2000) argues 'there are areas of social [or social-ecological] reality that statistics cannot measure' (p8).

Prior research into biodiversity conflicts has emphasised the need for contextual approaches in the form of case studies (Watt et al, 2003). The decision to design the research around locality-based case studies, however, is also a reflection of my theoretical interests. Irwin's articulation of 'co-construction' as inspired by a sociology

of scientific knowledge (SSK) approach, suggests the contextual essence of all 'environmental' questions. He argues that:

Environmental understanding may be better seen as context-related, dynamic, discursively formed and open to negotiation and change (Irwin, 2001:102).

This suggests the suitability of case studies as 'key sites in themselves' as opposed to being 'illustrative of some wider framework' (Irwin, 2001). Although an extensive study of Ireland's implementation of the Habitats Directive at national level has already been carried out by Laffan & O'Mahoney (2004), there appears to be no sociological research exploring the implementation of Natura 2000 at local levels, and in particular, how this process has led to locality-based conflicts.

My interest in exploring Natura 2000 as a process of line-drawing between nature and society, however, could not be limited to these place-based instances of conflict: it also requires an analysis of the national implementation of this project and the controversies engendered at national level. While Laffan & O'Mahoney's research provided some insights in this respect, the analytical focus of their study was entirely different to my own: their research was part of a broader study on the impact of the EU on the structures and processes of public policies in 6 small EU Member States (see Laffan, 2004a). While some of the empirical content of this study could be drawn on, research focused more specifically around nature-society 'line-drawing' was also necessary. I thus divided the research into two phases. Phase one explores Natura 2000 line-drawing and place-making at national level while phase two takes the form of two locality-based case studies. In both cases, I rely on a combination of in-depth,

qualitative interviews, participant observation and documentary analysis. I will discuss these in relation to both phases of the research.

Section 5.2. Phase 1: Line-drawing at National Level

Documentary analysis

An SSK methodology suggests that we “follow the actors” (Law and Callon, 1988). Irwin describes this as ‘the careful observation of how scientific and other sorts of evidence are accumulated and organized by different groups of individuals and institutions’ (Irwin, 2001:87). This can entail analysis of documentary sources. Phase one thus began with an extensive review of policy, legislative, media and academic documentation. These included EU and state publications from the various bodies charged with overseeing and implementing the network. They also included environmental NGO commentaries and criticisms, plus the reactions of affected landholders, who in Ireland as Chapter 6 will discuss, are mainly farmers.

A media review of over 80 newspaper articles from 1998 to 2008 revealed some of the main concerns of stakeholder groups (see Appendix III). These were accessed through on-line sources such as the Irish Times archives, a website providing access to other national and regional newspapers, and the main farming newspaper, the Irish Farmers Journal (see on-line sources). Together, these provided an invaluable source of up-to-the-minute news and commentary. Alongside this, I also drew on some television and radio news reports. Transcriptions of governmental committee meetings in which Natura 2000 issues were discussed were also drawn on. Some of these featured

presentations by those broadly 'for' and 'against' designation. For example, one meeting featured presentations by officials from the Department of the Environment, Heritage and Local Government (DEHLG) and ecological experts from Birdwatch Ireland; another featured presentations by representatives from farming, forestry, turf-cutting and windfarming interests. These were extremely heated and often emotionally charged debates where appeals were made for the protection of our 'natural' - or indeed our 'cultural' heritage. Other key texts included planning documentation from An Bord Pleanála, the state's independent planning authority; a report carried out by an environmental NGO into planning discrepancies in Natura 2000 sites (see Clerkin et al, 1999); scientific reports (especially on the hen harrier); and legal and political analysis (Scannell et al, 1999; Clerkin, 2000; Lenihan, 2005). All of these sources provided crucial insights into the way in which nature-society line-drawing was being attempted and resisted in Ireland. The credibility of Natura 2000 science was continually 'on-the-line' (Gieryn, 2000) as its boundaries were contested and defended (see Chapter 6). "Following the actors" in this manner also revealed the uncertainties plaguing the process. Taken together, these insights provided the background needed to frame the questions posed in interviews that followed. Documentary analysis continued throughout the lifespan of the project.

Interviews with key informants

Qualitative interviews are particularly useful in accessing the worldview of groups and individuals and provide the opportunity to probe further when necessary in order to explore other issues as they arise. They provide the opportunity to "follow the actors"

in ways that documentary analysis does not: uncertainties often 'glossed over' in official accounts can be explored and discussed; nature-society line-drawing assumptions and dilemmas can be revealed.

Phase one consisted of 16 interviews with key informants, carried out between May 2005 and August 2006. Some of these were re-contacted by telephone or email at later stages in the study, as new issues arose that needed clarification. The purpose of these interviews was to explore how nature-society line-drawing under Natura 2000 was being attempted in Ireland. I also wanted to find out why implementing Natura 2000 was proving so contentious and leading to entrenched conflicts at national as well as local levels. Interviewees were selected to represent the main state authorities charged with implementing Natura 2000, conservationist NGOs supporting the process and the main farming lobby groups opposed to designation. I also hoped to use these interviews to discover how nature conservation 'experts' understand and relate to 'nature' with a view to comparing this with 'lay' experiences and understandings. Interviews with botanists, marine biologists, ornithological and other ecological experts were carried out for this purpose.

Potential interviewees were identified on the basis of documentary analysis and then contacted by email and telephone and asked to participate in the study. Aware of the controversies surrounding the project, I realised that I needed to tread carefully in presenting my research in order to gain access to representatives from all sides of the conflict. While I felt ethically obliged to give an honest account of my research

interests, I also knew that divulging too much in some cases was likely to put some interviewees on edge, resulting in a less open and truthful encounter, or indeed in the denial of access. Suspicions that I might approach the topic with more sympathy for one 'side' than another, for example, would irrevocably damage the research. Given the 'bad press' received by state authorities on this issue, I anticipated a degree of defensiveness and perhaps wariness to speak openly on the topic. If respondents felt that the 'scientific' credentials of the project were being scrutinised, they may have been unwilling to discuss certain issues. As Silverman explains: 'both qualitative and quantitative researchers studying human subjects ponder over the dilemma of wanting to give full information to subjects but not 'contaminating' their research by informing subjects too specifically about the research question to be studied' (Silverman, 2000: 200).

In presenting my research I tended to explain the overall focus of the study fairly loosely although at times I clearly emphasised areas more likely to appear non-offensive to the various parties involved. When addressing farming interests I explained how the study would allow an opportunity to express the concerns of the landholders affected by designation. When addressing state and NGO conservationists, I presented the research as an opportunity to consider why the project was attracting so much resistance and proving so difficult to implement. While I always presented myself as approaching the topic from a non-partisan perspective, on occasion difficulties arose when some interviewees sought to question me further, in order to reveal my personal opinions on the topic. Some farming representatives wished to convince me of the

'unjust' treatment of landholders while conservationists lamented the 'unjust' treatment of nature (see Chapter 6). Failure to appreciate interviewees' perspectives was likely to offend. Expressing some degree of empathy in this way might be perceived as a cynical ploy by the researcher to gain further information from a less 'guarded' interviewee. On the other hand, however, offending interviewees by a complete lack of empathy was not a sensible option. This dilemma is part and parcel of research into all forms of conflict. I do not believe it 'contaminated' my research findings.

Most Phase 1 interviews were carried out at the interviewees' place of work, although some took place in cafes and hotel foyers. In each case, consent was obtained to record the interview, although several people requested that the recording be switched off at some point (sometimes for long periods) as particularly sensitive issues arose. Although detailed, interview guides were devised for each key informant, many of the interviews were conducted rather loosely as 'guided conversations'. The interrelated nature of the issues raised made it impossible to structure the conversations as anticipated in the paper format. This more relaxed style allowed conversations to flow more naturally permitting new and often unexpected insights to emerge. At the end of each interview I consulted my interview guide to ensure that the topics of interests were covered. Interviews lasted between 40 minutes and 2 hours. After each interview I wrote extensive notes on the issues raised, particularly in cases where recording was not permitted.

Participant Observation

In April 2006 I attended a conference entitled *NATURA 2000: Sustainable Development in Designated Sites* organised by Kerry Co Council. The aim of the conference was to provide an open forum where those concerned about designation could learn more about the process and air their views with those charged with implementing the project. This provided me with the opportunity to carry out some participant observation. I listened carefully to the perspectives of speakers from various state bodies and key stakeholder groups and took notes on the issues raised. A series of presentations was followed by an open floor discussion which at times became quite tense. In contrast to presentations from state authorities which were formal and dispassionate in tone, landholder comments from the floor were sometimes highly emotive, often drawing parallels between conservationism and colonial land conquest. Assurances made regarding reimbursements for losses incurred (see Chapter 6) did little to assuage concerns regarding future livelihoods and perceptions of 'displacement' (see Chapter 9). At the end of the conference I had informal discussions with 7 landholders, some of whom had spoken from the floor. These discussions were not recorded but notes were taken afterwards. The issues raised echoed those expressed by landholders interviewed in Phase 2.

In 2006, I attended two classes at a 'SAC watch training course' organised by the Irish Wildlife Trust (IWT). The classes were set up in order to train members of the public as voluntary 'SAC watchdogs' who would monitor local SACs in liaison with National

Parks and Wildlife Conservation Rangers (see Chapter 6). I explained my research interests and asked permission to attend some of the fieldtrips to local SACs. These fieldtrips allowed me to observe interactions between ecological experts and the lay public. As we walked around the places under study the group leader 'read' the local landscape, translating the nature before us into species and habitats while identifying the flora and fauna protected under Natura 2000. None of these discussions were recorded although I did take notes throughout.

Section 5.3. Phase 2: Nature-society line-drawing at local levels. Place-Based Case Studies.

Choosing the case studies

Information derived from Phase 1 played a role in developing ideas for case studies in Phase 2. Initially, I had hoped that interviews with key informants would help me to devise a typology of case studies upon which to draw on. For this reason I asked Phase 1 interviewees to discuss particular cases of designation. Difficulties arose, however, when key informants generally discussed case studies that were interesting to *them* for their own reasons. An expert involved in coastal research, for example, was keen that I consider an area where sand dune destruction was a cause of concern, while botanists pointed to the significance of areas of grassland devastation. At one point, I considered comparing an urban based designation with a rural one. I wondered whether the translation of place into habitat was experienced differently in these contexts. I also considered focusing one case study on 'contested natures' (a designation for the purpose of protecting a particular *species*) and another on 'contested places' (a

designation for the purpose of protecting a particular *habitat*). In practice, however, this was neither feasible nor appropriate. The protection of species under Natura 2000 necessarily entails the protection of their habitats and many places are doubly designated as both SPAs and SACs. All sites, under Natura 2000 are effectively 'translated' from places into habitats. As the research progressed, the significance of 'place' to understanding Natura 2000 conflicts became increasingly apparent.

Above all else, interviews with key informants revealed the different nature of concerns and dilemmas apparent at various *stages* of the designation (or place-making) process. Absent or uncertain knowledge, I discovered, was a major constraint at the pre-designation stage while obstacles to effective management became a central concern post-designation. Choosing sites on the basis of their *stage* in the line-drawing process, I decided, would be a fruitful way forward as it would also allow an analysis of the forms of resistance employed before and after lines were established. Line-drawing 'under construction', moreover, entails analysis of the process of translating a place into a habitat (see Chapter 7). I was also interested in exploring the clash in place meanings that occurs at the last stage of the 'reverse process of translation' (see Chapter 8). My choice of case studies was thus theoretically grounded: it was a reflection of my interest in exploring Natura 2000 as a contested 'line-drawing' and a 'place-making' exercise.

The two case studies finally chosen involved: (1) attempts to designate habitats for hen harrier birds of prey in the Stacks-Mullaghereirks region stretching across parts of

Kerry, Cork and Limerick (see Chapter 7) and (2) attempts to manage blanket bog habitats in the Owenduff Nephin Complex in North Co Mayo (see Chapter 8).

I chose the hen harrier issue because it was the most controversial case of line-drawing 'in action' during the fieldwork period for this research. The period also coincided with attempts to manage boundaries in the Owenduff Nephin Complex: the compulsory de-stocking of sheep from the commonages was being initiated. Both of these succeeding in attracting the attention of the media, the political establishment and indeed the EU (Ireland has been chided for failures of governance in both cases). Both sites, in other words, were topics upon which considerable documentation existed and could be drawn on.

Designing the Samples

Once I had chosen the two case studies, my next task was to design samples of potential interviewees.

Sampling in qualitative research is neither statistical nor purely personal: it is, or should be, theoretically grounded (Silverman, 2000: 105)

My samples, therefore, are not statistically representative of a given population but are *theoretically representative* of the issues I sought to explore. In both case studies my samples include (1) those attempting to draw or manage nature-society boundaries in a particular place and (2) those attempting to resist this place 'scientisation' process. Because I encountered the same issues in designing both case study samples, here I discuss them together.

The former group (see (1) above) were easily identified through documentary sources and from contacts established during Phase 1. As we will see in Chapter 6, the National Parks and Wildlife Service (NPWS) is the arm of the Department of the Environment, Heritage and Local Government (DEHLG) in Ireland charged with implementing Natura 2000. In both case studies, I interviewed regional and locality-based NPWS officials and representative from other key state bodies and agencies such as Teagasc (see further below). Other interviewees were more specific to the unique circumstances and particularities of the case. Because hen harrier boundaries were being drawn during the fieldwork period for this research, in this instance I could “follow-the-actors” in ‘real-time’. Interviews were thus carried out with ecological experts attempting to draw these geographic and conceptual boundaries. Also, because the crux of the conflict in this case centred on the permissibility of future land use options (especially forestry and windfarms), my sample included actors charged with land use decision-making at local levels. Managing habitats in the Owenduff Nephin Complex entailed a different set of actors. Here, nature-society boundaries were already established and the crux of the conflict was around attempts to manage blanket bog habitats through the de-stocking of sheep from the commonages. The choice of particular interviewees thus reflected this. For example, I interviewed a NPWS official charged with overseeing the development of Commonage Framework Plans (CFPs) which will be discussed further in Chapter 8. In carrying out these site-based key informant interviews, I adopted the same approach as already discussed in Phase 1. These interviews were usually carried out in the interviewees’ place of work although

some took place in pubs or hotel lobbies. They lasted between 35 minutes and 3 hours. Two interviews also entailed a 'road-trip' where interviewees drove me around the places in question and discussed the issues at stake.

Designing samples for those resisting the process at local levels was less straightforward. My samples needed to be representative of local concerns in relation to designation. While these were generally landholder-farmers, I sought to include those engaged in the various land uses likely to be affected by designation as well as those with particular insights into local concerns and circumstances. In the Owenduff Nephin Complex, therefore, the sample consists mainly of hill-farmers affected by de-stocking. In the hen harrier case study, the sample includes landholder-farmers with interests in forestry and windfarming. My samples also reflect the fact that walking is a popular pursuit in both areas and tourism is being promoted in the Owenduff Nephin Complex as part of its re-branding as a 'multifunctional' rural place. For this reason, I included landholders who enjoy walking as a pastime and those making a living from the tourist industry.

As I will explain in Chapter 6, the management of farming land designated under Natura 2000 Ireland is being attempted through an EU funded agri-environmental scheme known as the Rural Environmental Protection Scheme (REPS). Because not all farmers with designated lands are REPS participants, designation is experienced differently by REPS and non-REPS farmers. The divide between REPS and non-REPS farmers is in some cases leading to intercommunity divides and tensions (see in

particular Chapter 8). My samples, therefore, needed to include both perspectives and I sought to obtain a balanced representation from both groups.

As I will discuss in Chapter 6, the Irish Farmers Association (IFA) is the main farming lobby group in Ireland and it played a major role in resisting and negotiating designations at national level. The extent to which this group represents the views of all farmers on-the-ground, however, is questionable (Visser et al, 2006). It is often suggested that the IFA voices only the concerns of more intensive farmers (06: Teagasc; hh:20; hh:14). But while I sought to include both IFA and non-IFA viewpoints, grouping farmers in terms of IFA membership or non-membership is problematic. Visser et al's research suggests that many Irish farmers are IFA 'passive' members on the grounds that membership is essential to providing up-to-date farming information and "because there is no other option" (Visser et al, 2006:9). These 'passive' members do not necessarily support the viewpoints of the organisation. Some farmers, on the other hand, are IFA 'active' members. These more politicised farmers play an active role in building and articulating dominant IFA viewpoints. I realised that these could easily overshadow dissenting, less powerful voices. In order to be representative of the diversity of perspectives on the ground, I was careful to include both IFA active and IFA passive or non-IFA members. In fact, given that IFA viewpoints are commonly presented in the media, I felt it more important to obtain the views of 'less politicised' farmers on-the-ground. Ascertaining farmers relationships with the IFA required a subtle approach, and sometimes a degree of 'detective work'. Key informants at local levels were helpful in this respect (see further below).

While my sampling was purposive and theoretically grounded, I also relied on 'snowball sampling' in order to gain access to many landholders on the ground. This form of sampling relies on personal recommendations between individuals sharing 'characteristics of interest' (Arber, 1993: 74 paraphrasing Hedges, 1979) and 'is particularly useful when the potential subjects of the research are likely to be skeptical of the intentions of the researcher' (Arber, 1993:74) (see further below).

A potential problem with snowball sampling is that it tends to include only those within a restricted network of people. To counter this I was careful to achieve a good geographical spread of interviewees, sometimes forgoing suggested interviews and seeking out alternative ones on the basis of different contacts. While some contacts were made through key informant 'tip-offs', others, as I will discuss in the next section, were made through personal relationships built up in the course of fieldwork.

Appendix VI lists the interviews carried out in both phases of the research. The interviews were coded in chronological order. Phase 1 interviews are listed in the text with a number, followed where relevant by an abbreviation of the organisation to which they are affiliated. References to Phase 2 interview are listed similarly but are prefaced with an abbreviation of the case study with respect to which they were interviewed.

Issues in the Field: Gaining access and Building Trust

As I will explain further in Chapter 6, Teagasc is the national research advisory body for farming in Ireland. Locality-based Teagasc advisors liaise closely with farmers on-the-ground and are generally well versed in local farming concerns and circumstances. Teagasc advisers were thus interviewed in both case studies. These contacts were also extremely helpful in gaining access to local farmers and providing sensitive 'insider' information (whether farmers were in REPS or were IFA 'active'). In both cases, Teagasc officials provided the contact details of a small number of local farmers affected by potential designations and, in the event of refused access, agreed to vouch for my credibility as an independent researcher. This was extremely important. As I will discuss further in Chapter 6, Irish farmers are often distrustful of conservationists who interests are perceived as akin to that of colonial 'land-grabbers'. There is a perception that conservationists are urban (and primarily Dublin) based 'elites' who care little for rural concerns and circumstances. My own Dublin background was thus a potential obstacle. This, coupled with the sensitive nature of designation and the extent of local tensions and divides it has engendered, meant that gaining the trust of local farmers was an absolute priority. While Teagasc support was crucial in this respect, it was also essential that I present myself and my research in a manner likely to be acceptable and non-offensive (see further below).

Case study fieldwork was carried out from February to December 2006. This involved a number of trips to both regions. For personal and practical reasons, I travelled with my partner and our young child. Because many of the areas I needed to visit are

located in remote areas where there is no public transport, my inability to drive meant that I needed a driver to accompany me. Some trips to the Stacks Mullaghereirks were carried out over long weekends, on other occasions I combined research with family holidays.

Some potential interviewees were contacted by telephone prior to the field trips. As previously stated, some of these had been provided by Teagasc advisers but others were identified through documentary sources such as planning controversies in newspapers articles in the Irish Farmers Journal or from other key informants (such as IFA officials or Heritage Officers with the Local County Councils). While this was sometimes a fruitful time-saving exercise, difficulties arose at one point when a few contacts were unwilling to take part in the research. One or two landholders quickly and abruptly made this point during the course of telephone conversations. I realised that some people were wary of discussing divisive local issues, especially with someone they had yet to meet. In such cases I apologised for the intrusion and respected their decision. Several other landholders, however, were very receptive to the research and appointments were made in advance of the trips.

Local divides and tensions were more prevalent in the Owenduff Nephin Complex than in the Stacks Mullaghereirks, possibly because this is a smaller and more tightly-knit community. Gaining access and building trust was thus a more salient issue in this case. Staying within one of the local villages, shopping, eating and socialising locally was an important factor in building good relations in the area. The person from whom

we rented a holiday home could trace his local roots back for several generations and was well-known and well-respected locally. He took an interest in my research and put me in contact with several hill farmers. These, in turn, put me in contact with others. I built up a good relationship with the local postmistress who helped me seek out people in more remote areas and also put me in direct contact with a family member affected by de-stocking.

Gaining access in the Stacks Mullaghereirks region also relied on similar snowballing techniques. In this case I began with IFA contacts which were easily sourced through the media. Again, a local Teagasc adviser was a vital contact in terms of accessing other, less politicised farmers as well as those in REPS. Some landholders with forestry and windfarming interests were sourced through local newspaper articles and internet searches.

The interviews

In both case studies, potential interviewees were initially contacted by telephone and appointments were made to carry out the interviews. As in Phase 1, I explained my research objectives simply and briefly: in this case I explained how my study would explore the perspectives of those affected by designations. Interviewees were guaranteed anonymity and consent was requested to record the interviews. Only one person refused although again some people requested that the recording was turned off as particularly sensitive points were made, generally those regarding intercommunity tensions.

Because the group most affected by designations are full or part-time farmers, who in Ireland are predominantly men, the vast majority of interviews are one-to-one discussions with members of this group. In spite of this, however, I was conscious not to exclude the voices of other household members. In cases where the interviewee had not been identified in advance (i.e. where the household was suggested to me rather than a specific person within in), I requested to speak to someone willing to discuss the implications of Natura 2000 designations. In most cases the man of the house offered himself for the job. Some interviews, however, were carried out with couples (see Appendix IV).

Although I had feared it might be a constraint, the fact that I was accompanied by my partner and our young child frequently helped to lighten the mood, humanising the situation and creating a sense of informality that put people at ease. Wishing to avoid perceptions of myself as 'official', I dressed casually and carried only a handbag. We had arranged that my partner would drop me off and return to collect me at a later point, but in most instances the interviewees insisted otherwise. It occurred to me that we may have been something of a novelty. In many cases our child played with the children of the house while my husband sat drinking tea with other family members as I carried out interviews in a separate room. In most cases, we were greeted with exceptional warmth and hospitality. We were often invited to stay for dinner. These informal encounters allowed me to access the views and perspectives of other family members. I used these opportunities to ask people how they felt about the place where

they lived and whether designation under Natura 2000 had any bearing on this. In return for this, however, it was generally expected that myself (and indeed my partner!) share something of ourselves with the people we met. We were sometimes asked to explain our own backgrounds, our lifestyles, circumstances and interests. I believe that this narrowed the power gap between the researcher and the researched.

A few interviewees, on the other hand, remained more distant and relationships were more formal. One hill farmer in the Owenduff Nephin Complex stopped the interview at one point to ask 'are you sure the other farmers won't hear what I'm saying to you now' (o-n:12). Another person who had agreed to be interviewed in the Stacks-Mullaghereirks region appeared to change his mind at the last minute and could not be contacted. Only one person requested to see my student identification card.

Overall, however, most people seemed to enjoy the interview process. A few older farmers in both case studies were delighted to share their extensive knowledge of these places. Some noted how they knew these areas 'inside-out' yet had 'never been asked about them before' by 'official' sources who only ever told them 'what to do'. One interview became a more intimate encounter as an older hill farmer told me his life-story as we sat by the fire one evening. On recollecting the hardships suffered in earlier times, he was moved to tears on a few occasions. At one point I was concerned that my research was inadvertently causing him distress. I tried to deal with the situation as sensitively as possible. He later told me that he enjoyed telling his story to someone who was willing to listen.

Other methods: Documentary Analysis and Participant Observation

As in Phase 1, documentary sources provided essential background information. At this stage of the research, they helped me to build up an understanding of the places under study and the changing circumstances of the people living there. I consulted County Development Plans (drawn up by local authorities), NPWS site synopsis and management plans, as well as local newspapers and area websites. Many of the documents sourced at national level contained references to these specific case studies. The particular concerns of those affected by de-stocking and hen harrier designations were raised in several governmental committee meetings.

One interviewee sent me a recording of the discussions that took place at one of the IFA's public meetings held in May 2003, at the Devon Inn in Templeglantine, Co Limerick (referred to in this study as the Templeglantine meeting). The meeting took place in the heart of the Stacks Mullaghereirks region at a time when lands were 'under consideration' as hen harrier habitats (see Chapter 7). Over 800 people, primarily landholders but also local politicians, the media and representatives from the NPWS attended. Access to this recording proved most insightful. As we will see in Chapter 7, the meeting was particularly heated as speakers from the floor challenged the legitimacy of the NPWS's line-drawing and some NPWS representatives were accused of incompetence and dishonesty. Although I had not attended the meeting, nor had those who attended consented to take part in this study, it should be noted that the meeting was a public meeting, the contents of which have been discussed in the media,

in governmental meetings and in interviews carried out in this research. My analysis of the meeting might be considered a form of observation 'ex-situ'.

Section 5.4. Analysing the data

All of the interviews carried out in this study were transcribed. A few Phase 1 interviews were transcribed in part only, because the final direction of the research meant that their particular insights were less relevant (see further ahead). I also transcribed the entire proceedings of the Templeglantine Meeting. These, together with notes taken at the Natura 2000 conference in Kerry, newspaper articles, governmental committee reports and other fieldwork notes formed my data set.

I coded the data using a stock piling methodology. Having read through the data several times, I identified the major themes that emerged. These themes were coded manually on paper and the data was then divided into piles based on the emergent codes. The final coding scheme is listed in Appendix V.

In analysing the data, the distinction between Phase 1 and 2 of the research became less important. Disputes in both cases fed back into the conflicts at national level. Also, some of the issues that I wished to discuss with key informants at national level were more easily addressed with key informants interviewed in relation to the case studies. Some issues (regarding knowledge, uncertainties and people-nature relationships, for example) were difficult to address without relating them to *specific* case studies. Some of the most pertinent insights in this respect thus emerged from these locality based key

informant interviews. In the final study some Phase I interviews were drawn on more than others, simply because of the direction finally decided upon. For example, while I interviewed marine experts in Phase I, my final choice of case studies meant that I did not pursue these issues in the analysis.

An SSK methodology requires the symmetrical treatment of all knowledge claims. (Irwin, 2001:181). In analysing my dataset I sought to maintain this 'agnostic' approach; neither reifying 'expert' accounts nor romanticising 'lay' ones. Complete objectivity on the part of any researcher, however, is an illusive ideal. While I have attempted to view the data from a neutral and detached viewpoint, my own background, personality, interests and values will to some extent have influenced my analysis of the data. The fact that I consider myself a 'nature' lover who (in spite of the constructed nature of 'nature') cares about our treatment of non-human 'nature', for example, will have influenced my findings (see Chapter 10). As a sociologist, however, I am also concerned about the experiences of human communities and the relations of power that underlie all attempts to draw lines between the 'natural' and the 'social'. Throughout the life-span of this project I have thus battled with my own attempts to draw lines between 'nature' and 'society' and found myself equally perplexed by the choices, dilemmas and uncertainties we all face when trying to do this. The process of sociological, as well as ecological knowledge production entails losses in 'translation' (see Chapter 9). In my quest for a coherent conceptual framework, some insights and ideas were sacrificed along the way as others were seized upon, explored and developed. Ideas gleaned from prior research, for example, will have influenced the

'traces' of interest I 'accumulated' (Latour, 1987) in each case study. This is an inevitable factor in all research but it is one that is rarely openly acknowledged and stated. An awareness of this, I believe, makes a stronger and more robust study.

Chapter 6: Implementing Natura 2000 in Ireland: Contested Line-Drawing

This Chapter considers the implementation of Natura 2000 in Ireland as a socially negotiated process of line-drawing between 'nature' and 'society'. It shows how powerful social groups employed various strategies to influence this process, challenging the state's line-drawing exercise and devising their own lines instead. We will see how farming groups successfully managed to influence the process at national level while conservationists turned to Europe to insist that the lines be re-drawn differently. While 'science' is understood to determine the contours of these line-drawing and place-making exercises, this Chapter reveals the complexity of political, legal, institutional and socio-cultural factors playing a part in this highly contingent and controversial process.

The Chapter is divided into three sections. Section 1 outlines the institutional and cultural context onto which Natura 2000 was introduced and outlines the Irish procedures for designating sites. Section 2 explains the national conflict that developed. Section 3 discusses the arguments of pro- and anti-designation lobby groups and the strategies they employed to influence the process. Section 4 considers the role of the state body primarily responsible for line-drawing, and considers some of the constraints under which it had to operate.

Section 6.1. The Irish Context

As in most EU countries, the areas designated under Natura 2000 in Ireland are generally located in rural, farming areas. Farm size in Ireland is relatively small: in 2006 less than 4% of Irish farms were over 80 hectares (Crowley, 2006:33). While most agricultural land is privately owned, there are also extensive areas of commonage, i.e. undivided land on which two or more farmers share ownership and or grazing rights. Commonage dominates Ireland's uplands, covering approximately half a million hectares and involving about 12,000 farmers in the republic (Bleasdale, 1995). Commonage in Ireland was traditionally managed through the Runsdale System where collective agriculture and the utilisation of common resources was common practice. This system was used to regulate communal grazing, turbary and foreshore rights (O'Loughlin, 1987; Whelan 1997). Examples of these informal systems of management still exist under commonage today. In Chapter 8 we will see how a local articulation of Runsdale, known as the 'bands system' in North Co Mayo, survived until relatively recently. Under this system, local hill farmers established common rules governing entitlements to graze cattle and sheep on 'outside' land (i.e open, commonly held land) land as opposed to 'inside' land (i.e. enclosed, private land).

Farming was traditionally seen as the 'backbone' of rural Ireland, although economic development and the growth of a more urban-focused culture are among the factors eroding this perception (Crowley, 2006). The global rationalisation of food production and the reform of CAP have meant that farming in Ireland is under pressure and there is 'a general air of pessimism regarding its future' (ibid: 52). Out of a total of 159,000

farms in 1994, Commins and Keane argue that only one third were 'economically viable' (Commins and Keane, 1994 cited in Crowley, 2006:33).

The convergence of EU agricultural and environmental policies, as discussed in Chapter 2, led to funding being provided for agri-environmental schemes in all EU Member States, of which the Rural Environmental Protection Scheme (REPS) is the Irish version. In REPS, farmers are encouraged to adopt new farming methods in return for payments per hectare of land farmed. This voluntary scheme, which is managed by the Department of Agriculture, Forestry and Food (DAFF), contains a series of 12 measures which are mandatory. These include following a farm nutrient management plan, protecting and maintaining watercourses and controlling waste and effluent around the farmyard. Participants can also choose from some additional 'supplementary measures', generally requiring more pro-active practices in favour of specific environmental objectives. These include growing low input tillage crops or planting native trees. Farmers adopting these supplementary measures receive additional income as a result. REPS farmers must comply with farm plans as drawn up by agricultural specialists. The national body providing research, advisory and training services to farmers, known as Teagasc, is the main agency who prepares REPS plans (some private planners also work for smaller DAFF approved agencies). Crowley's research reveals how REPS up-take is concentrated among relatively marginal producers (although the costs incurred joining the scheme are prohibitive for some). The scheme has proven less attractive to more production-orientated farmers who can earn more through farming intensively (Crowley, 2000). She concludes that REPS has

led to the social and environmental ‘zoning’ of the Irish countryside (Crowley, 2000: 215-216).

As we will see in Chapters 7 and 8, REPS is central to the implementation of Natura 2000 in Ireland. In response to EU obligations to establish ‘conservation measures’ for Natura 2000 sites, a specific ‘supplementary measure’ was introduced into REPS, aimed at managing designated land and other environmentally sensitive areas. Farmers with land in SACs, SPAs, National Heritage Areas (NHAs) and with shares in commonage (all referred to as ‘target land’ in REPS) can thus receive additional income under REPS. While the government preferred to manage Natura 2000 through REPS, largely on the grounds that this scheme was funded through Brussels as opposed to the national exchequer (Laffan et al, 2004) difficulties arose because not all farmers with designated land were REPS participants or were willing to join the scheme. An alternative national farm scheme, governed by the Department of the Environment, Heritage and Local Government (DEHLG) was set up as a result (see further ahead). Unlike REPS which is a ‘whole farm scheme’ requiring considerable changes to farming practice, the national farm schemes only apply to designated areas of land. REPS includes an incentive element for environmental protection whereas the NPWS payment covers costs and losses only (09:DAFF).

The National Parks and Wildlife Service (NPWS), an arm of the DEHLG, is the body primarily responsible for the implementation of Natura 2000 in Ireland. Formerly known as Dúchas (the Heritage Service) in 2002, this body was transferred from the

Department of the Arts and the Gaeltacht to the DEHLG and re-named the NPWS. In this study I will refer to this body as the NPWS, even although it is still frequently referred to as *Dúchas* throughout Ireland and was still known as *Dúchas* for much of the time-period of this study. Although the NPWS headquarters are located in Dublin, regional offices around the country are also charged with managing and implementing the network locally. Linked to these regional offices, over 70 conservation rangers are employed by the NPWS. Rangers are charged (inter alia) with monitoring local sites and liaising directly with landholders on the ground.

Unlike some other EU Member States, Ireland does not have a long tradition of nature conservation. Distrust of nature enthusiasts, especially in rural quarters, stems from their past associations with colonial interests. The relationship between colonialism and nature conservationism has a long history. Parallels are frequently drawn between the two (especially in underdeveloped countries where indigenous peoples were often evicted from their lands for nature conservation purposes). A “fortress conservationist” or “fences and fines” discourse is frequently employed to express the injustices of such a system (Stoll-Kleeman et al, 2002). This phenomenon has encouraged a perception of conservation interests akin to that of colonisers. Such a perception has been particularly pervasive in the Irish context where nature enthusiasts and conservationists are frequently associated with ‘the landed gentry’, established religions and the professional classes (Feehan, 1997). The National Trust in Ireland, *An Taisce*, was closely modelled on the British system and is particularly disliked in rural Ireland. This engrained suspicion goes some way towards explaining why nature

conservation remains such a 'hard sell' in rural Ireland. This political unpopularity has resulted in its chronic under-funding at state level. Attempts to conserve nature through the specific form of *land designation* are further exacerbated by the significance of landownership in Ireland. This, as Crowley argues might be 'attributed to the pride that comes from land-ownership in a relatively recent postcolonial society' (Crowley, 2006:51).

The notion of designated areas for nature, however, was not an entirely new concept in Ireland. Areas of Scientific Interest (ASI) had been in existence since 1981, followed by National Heritage Areas (NHAs) in 1994 (when ASIs were renamed NHAs). The 1976 Wildlife Act had (inter alia) already made some provisions for the protection of wildlife habitats (Grist, 1997:87) although site protection measures were 'relatively weak and almost completely limited to measure that could be introduced in agreement with landowners' (Laffan et al, 2004:12).

All of this changed with the Habitats Directive, which as Laffan and O'Mahony argue, necessitated fundamental shifts in nature conservation policies and practices in Ireland. The main policy shift entailed a shift in focus from publicly to privately held hands. Up until this point, nature conservation policy had traditionally relied on purchasing empty landowner estates or buying out local landowners. The Habitats Directive then, 'instigated a policy shift from protecting wildlife and fauna on state owned property to demanding habitat protection from private landowners' (Laffan et al, 2004: 8).

The shift occurred in a legal and constitutional environment whereby private landowners were afforded considerable protection. This was as underlined in a Supreme Court Judgment in 1994 on a controversial case involved the proposed building of an airport on an area of intact blanket bog designated as an ASI without the prior knowledge of the landowners. When planning permission for the airport was later refused (on the grounds of the ASI) the landowners and airport authorities took the matter to the Supreme Court. The court ruled in favour of the landowners on the grounds that failure to inform them of the site designation was contrary to the principle of natural justice ((Laffan et al, 2004:8 see *MacPharthalainn v. Commissioner of Public Works* 1994 3 I.R. 353). The Roundstone case resulted in a suite of legal recommendations relating to state consultation with landholders and significantly, the need for clarity in relation to the *boundaries* of designated sites – a point to which we will return later.

These changing legalities, coupled with the institutional changes already mentioned have led Laffan et al to argue that the Habitats Directive confronted Irish authorities with ‘a policy, legal and institutional mis-fit at domestic level in relation to the implementation of the Directive’ (Laffan et al, 2004).

Procedures for designation

The procedure for designating SPAs and SACs in Ireland is outlined in the NPWS’s information booklet ‘Living with Nature’ (DEHLG, n.d.). I lay these out at this point, so that they may be discussed in more depth throughout this and subsequent chapters.

Step 1 relates to the *identification and mapping of sites*: scientific survey work carried out by teams of ecologists. *Step 2* entails the *advertisement and notification of sites* (whether proposed candidate SACs or proposed SPAs). The pamphlet states that ‘all reasonable effort is made to identify and notify owners of land’. It describes how land maps detailing site boundaries, for example, are posted out to landholders, how proposals are listed in local newspapers and maps are displayed for public viewing in local county halls, Teagasc offices, police stations, libraries and so on. While this stated policy now exists (at least on paper), the NPWS admits that notification procedures ‘in the early days’ were ‘clearly inadequate’ (08: NPWS). At the same time as site notification, a list of activities ‘that might damage wildlife interests’ is also published. These are known as ‘notifiable actions’: actions, in other words, that the NPWS must be notified of in advance, so they have the authority to allow or disallow them. These only relate to activities or developments that are not regulated by another state authority, such as forestry which is regulated by the Department of Agriculture, Forestry and Food, or planning issues which are regulated by the Local Authorities. These authorities thus also have some responsibility for the implementation of Natura 2000. Notifiable actions can include more day-to-day land management practices such as vegetation removal, the cutting or spraying of rushes, burning of fires and so on. Sites, it is stated, are legally protected from the point of advertisement, although this as we will see later has been the subject of some debate. *Step 3* relates to *objections and appeals*. Appeals regarding sites boundaries are initially dealt with in-house by the NPWS and then, in the event of these being successful they are considered by an independent Designated Areas Appeals Advisory Board. The Board, which is made up

of representatives of farming organisations, industry, conservationists, persons possessing specific scientific expertises and an independent chairman (a former Ombudsman), can only consider appeals that have already been considered and rejected at an 'internal appeal' procedure which is managed in-house by the NPWS. The board advises the Minister who has the final decision. Crucially, in line with EC case law, an appeal can only be made on 'scientific grounds' by a person with a 'legal interest' in the site. Step 4 entails *official designation* by the state.

Section 6.2. The conflict at national level: line drawing and re-drawing

In 1997 the Habitats Directive was transposed into Irish Law and, as in many other Member States, this was met with enormous hostility from affected landholders, especially from the rural (and usually farming) communities most affected. According to Laffan and O'Mahoney, Irish transposition and implementation of the Directive was 'complicated, torturous and infused with controversy' (Laffan et al, 2004: 7).

While depoliticisation is a deliberate strategy in the European Union's system of public policy making (with the technocratic and expert driven nature of policy making expected to act as an insulation from domestic concerns (Boh, 2004)), Laffan and O'Mahony (2004) discuss how once the Habitats Directive 'hit home' it immediately became *highly* politicised. Once an issue becomes politicised, they argue, 'it involves a wider number of societal actors and receives considerable political attention in the parliament and the media. It is driven up the political hierarchy for political resolution' (Laffan et al, 2004: 4).

As we will see, this is essentially what happened in the Irish context. As soon as the Irish government set about transposing the Habitats Directive into national law they were confronted with the massive opposition of the farming lobby represented by the Irish Farmers Association (IFA) and to a lesser extent the Irish Creamery and Milk Suppliers Association (ICMSA). Although it was not only farming, or rural land that was under consideration for designation, it appeared that rural, farming communities, especially those dependent on the poor quality agricultural land of the Western seaboard, would be disproportionately, and thus unfairly, affected. One newspaper article claimed that:

as the majority of the SACs selected are in the West, the most disadvantaged people are again being targeted. Many small farmers will be deprived of their right to make a living (McNally, 2001, on-line).

Irish implementation of the Habitats Directive received inordinate attention from the media who undoubtedly engaged in a degree of scaremongering. The circulation of uncertain, inaccurate, and often exaggerated accounts of designations and their likely impact on landholders only served to intensify levels of distrust. During the period 1992-2003 there were 754 parliamentary questions on the Habitats Directive (Laffan et al, 2004). Numerous public meetings on the issue were held by the IFA (at one stage up to two meetings per week), some of which received considerable media attention. The National Chairman of the IFA's Sheep Committee official described the Directive as 'the most serious issue ever to hit the farming community' (cited in Laffan et al, 2004:9).

At one point the IFA led a 'Dúchas Keep Out' campaign where landholders were urged to refuse access to their lands for conservation purposes. This blockading of land coincided with, and was to some extent fuelled by intense controversy over the designation of lands for hen harriers (endangered birds of prey) in the South-West in the country, as will be discussed further in Chapter 7.

The vehement opposition of the farming lobby effectively forced the state to engage in a lengthy process of negotiation. Laffan et al explain how 'the key to unlocking the transposition process' involved 'buying off the farmers' who essentially sought a 'package' (Laffan et al, 2004). To this effect the farmers used their engagement in Social Partnership (a form of neo-corporatism that emerged in Ireland in the mid 1990s) 'to press for a deal on habitats' (Laffan et al, 2004:12).

Through partnership negotiations, every four years the government establishes pay, wage, tax and welfare deals with its 'social partners' (industry, trade unions and farmers). Because these are handled directly by the Taoiseach's office, this brought the issue of the Habitats Directive right into the heart of public policy-making. The deal hammered out in 1996 was thus included in the 'Partnership 2000' agreement. The 'package' sought by farming interests centred around demands for compensation, consultation, and an appeals procedures - with demands for monetary compensation as undoubtedly the biggest single point of contention. Farmers argued that compensation should take account of land devaluation as well as loss of actual *and potential* income

(on the grounds that limitations on land usage could unfairly circumscribe any future diversification plans and render the land a less lucrative asset).

The 1997 Habitats Regulations when eventually passed took some of these issues on board. Farmers were entitled to compensation for *actual* (i.e. provable) income losses or additional top up payments under the Rural Environmental Protection Scheme (REPS) if they were REPS participants, or *if* they were willing to sign up to this voluntary scheme. For those non-REPS farmer/landholders financially affected an alternative national compensation scheme was eventually established. There were long delays setting up this national scheme which required sanction by the European Commission on the grounds that it provides a form of state aid. Compensation for potential future losses, however, were not taken into account and while there is a procedure for compensation in the event of the losses in land value, this area remains problematic because these losses are particularly difficult to prove.

There are still problems with compensation in many respects and I don't know if anyone has ever successfully received compensation for loss of land value which is a hard one to prove, you know the factors in land evaluation are complex. And there are problems with non agricultural activities like forestry or even quarrying or coastal developments, any change to land-use really. It restricts what you can and might want to do at a later point and that's not taken into account. And a number of cases have emerged where Dúchas won't pay the compensation but are making out it's another Department or Local Authority who are turning the development down (12: IMCSA).

In the years following the 1997 regulations it soon became apparent that the deal negotiated by the IFA had not put the issue to rest. Many farmers on the ground remained opposed to the process on a number of fronts and farming organisations began to rally on the issue once more. As a government Minister interviewed in Laffan

et al's study explains, 'the IFA thought they had it done because of solving the money issue but this was not the case' (Laffan et al, 2004:16). A later interviewee in the same study also emphasised that 'there was strong grassroots pressure on the IFA over habitats and considerable mobilisation at that level. The wording of the regulations wasn't quite what the farmers thought they had got' (Laffan et al, 2004:17-18).

The emergence of an ad-hoc group of activists known as the 'SAC Alliance' points further to the politicisation of the matter. The SAC Alliance claimed to represent more than 7000 farmers and landholders specifically concerned about their turf cutting rights due to the proposed designation of extensive areas of bog in the west of the country. Unlike the mainstream farming organisations, this more militant group were not involved in any negotiations at state level. Instead they made their concerns known through the media – especially by incorporating their concerns into their No to the EU's Nice Referendum campaign in 2001. That the Habitats Directive was the only European Directive marshalled as evidence 'against Brussels' throughout the No campaign is further evidence of its politicisation during this era. It continued to emerge as a topic of debate in the 'Forum on Europe' which was set up in Ireland as a response to the 2001 'No' vote.

In response to pressure from the Alliance and the farming lobby more generally, financial compensation was offered to bog-owners. In some cases the state purchased turbary rights from those cutting turf for their own use as many of those cutting in sensitive areas were obliged to cease cutting immediately. In other cases, provision

was made for the cessation of turf cutting to be phased in over a ten year period. Compensation was made available for commercial cutters whose turf was cut mechanically and who were also required to stop cutting it immediately. In some designated areas, manual turf cutting for personal use is allowed to continue from existing banks in certain areas but is banned in other parts.

Irrespective of these conciliatory measures conflict became such that the then Minister for Environment Heritage and Local Government, Mr Martin Cullen was forced to revisit the 1997 regulations. Farming interests as Laffan et al argue 'effectively forced a 'resteeding' of the implementation process. Bilateral negotiations with farming groups from 2003 to 2004 culminated in a 'landowners agreement' which made provision for a number of further policy alterations and concessions. The extent of designated farmland alongside river habitats, known as 'river margins' was reduced; procedures were drawn up for notifying farmers of proposed designations; and new guidelines for planning authorities were issued regarding the implications of designation for development (designation, it was urged, should not to be considered an inflexible barrier to sustainable rural development); guarantees were also made regarding the payment of full compensation for any costs or losses (capital or income losses) arising as a result of restrictions on farming or other existing activities. This re-steering of implementation is similar to the French experience where pressure from a coalition of rural opponents (hunters, foresters, agriculturalists and so on, known as 'group 9') succeeded in 're-launching' implementation of the Directives (Alphandéry & Fortier, 2001:321).

Section 6.3. The concerns and strategies of ‘pro’ and ‘anti’ designation lobby groups

Farmer/landholder concerns

Farming groups viewed Natura 2000 as a ‘horrific intrusion’ by Brussels (Laffan et al, 2004). It was considered an affront to their constitutional property rights and an unacceptable threat to their livelihoods. Because they were the group that stood to lose most in an economic sense, for instance, if land prices fell due to designation, they felt it grossly unfair that one sector of society (especially those farming on poor quality lands in economically disadvantaged areas) was being asked to ‘to carry the cost’ of protecting biodiversity which is essentially a ‘public’ value (11: IFA). While there were assurances given regarding the establishment of an alternative national farm scheme for non-REPS farmers (as mentioned earlier), this had yet to materialise and no monetary figures had been proposed or agreed on. Non-REPS farmers with designated or proposed designated land, as such, felt particularly aggrieved.

Another source of annoyance related to the amount of land proposed for designation. While the then Minister had allegedly promised that only 5% of Irish land would be designated, by 2005 the figure was closer to 11%. This resulted in a further erosion of trust:

when the then Minister introduced the EU Habitats Directive, he said that 5% of the country would be designated. Now up to nearly 11% of the country has been designated and there is no indication from the Minister whether the designation process will stop at that. You can’t take anything they say at face value (12: IMCSA).

The “science-first” methodology of the Directive proved another major source of antagonism. As previously stated, designations can only be made or appealed on the basis of ‘science’. This infuriated opponents of designation who insisted that socio-economic and cultural factors should be taken into account at the point of designation as well as at the ‘controls’ or management stage (see Chapter 2). There were also growing concerns that social considerations (such as livelihood concerns) were having only a limited impact on land-use or planning decisions at local levels. Instances of bogs, slugs, and birds (among others) curtailing and/or preventing certain land use practices and developments became commonplace in national and local media, fuelling anxieties (see Appendix III). This encouraged a perception that the lines being drawn were overly rigid, prohibitive and restrictive.

Many landholders also viewed designation as a threat to some aspects of their cultural heritage. Just as the Birds Directive appeared to threaten the ‘cherished cultural practice’ of bird shooting in some EU countries (O’Riordan et al, 2002:120) the Habitats Directive appeared to threaten the equally cherished cultural practice of turf cutting in rural Ireland. The conservation of national biological heritage, it was felt, was being prioritised to the detriment of cultural heritage.

Another central bone of contention was the lack of consultation afforded to affected landholders, many of whom learnt of the proposed designation of their lands through media sources who frequently drew on inaccurate information. This fact infuriated landholders across the board. Speakers from the floor at the *Natura 2000: Sustainable*

Development in Designated Sites conference in Kerry (see Chapter 5) frequently described the manner by which the NPWS went about designating land as 'top-down' and 'draconian'. A farmer speaking at the Templeglantine meeting (see Chapter 5) commented that: 'I've heard of cases where people didn't know their lands were designated until they went to sell the land and then found it was worth a lot less'. As one NPWS official openly admitted: 'the way we went about the whole thing then was abysmal, no-one could pretend otherwise and they [landholders] had every reason to be put out [-] (o-n:05).

Strategies of the Farming Lobby

Aside from bargaining and lobbying the government, the farming lobby employed a number of other strategies to pursue their objectives. In the context of abysmally poor and unclear information provision, a degree of scaremongering ensured that the issue remained highly politicised and thus a top priority for government attention. As I will discuss further in Chapter 7, exaggerated accounts of possible land-use restrictions frequently depicting a 'worst case scenario' were continually raised at IFA meetings and featured subsequently in newspaper reports and other media. The Habitats Directive was put forward as spelling the end of farming and rural life 'as-we-know-it'. It was frequently suggested that farmers would 'have to apply to Brussels' if they wanted to spray a ditch or move a stone:

In the words of one South Galway man, "400 acres of land, and I can't remove a single rock" (Siggins, 1998, on-line).

The extent to which this type of scaremongering was deliberately orchestrated is of course difficult to ascertain. As we will see further in Chapter 7, conservationists claim that farming groups 'used it to their political advantage' (02: An Taisce).

Another related and highly effective strategy was the rhetorical framing of the issue in terms of the Irish land struggle against British colonial interests. As Laffan and O'Mahoney argue:

Those opposing the Habitats Directive could position their objectives in a rhetorical frame that resonates with the pre-history of the Irish State because the battle to own and control land was at the heart of modern Irish nationalism (Laffan et al, 2004:9).

Parallels between the threat of designation and the old threat of land appropriation under colonialism were continually drawn by all those resisting the designation process. Laffan and O'Mahoney's study found it 'remarkable'

the number of times that reference was made to a hate figure in Irish nationalist historiography, Oliver Cromwell (Protector from 1649-1658), who had pushed the Irish off their land during his Irish campaign in 1649-1650. In the Parliament, Síle De Valera, who became minister in 1997, claimed that the then Minister, Michael D. Higgins, was "casting himself as some sort of new Cromwell trying to take over land without consultation or compensation" (Dáil Debate, 26.11.1996, cited in Laffan et al, 2004:9).

As one newspaper article put it:

"Cromwell". "Tenants". "Evictions". "Prisoners on the land". Mention a particular acronym in Connemara these days and this is the frustrated response from some small farmers..... As property prices run riot in Galway city and environs, farmers facing SAC designations believe their land will be rendered worthless. They resent decisions being taken for them by EU bureaucrats who, they believe, may care about the environment but do not appreciate the status of land ownership in Irish history (Siggins, 1998, on-line).

Emotive language highlighting the grievances suffered at the hands of the British were frequently juxtaposed with descriptions of the 'fighting Irish' paying the ultimate sacrifice as to secure authority over their 'precious land'. A speaker from the floor at the *Natura 2000: Sustainable Development in Designated Sites* Conference insisted that Irish land was 'hard won'; 'we fought hard to get it and by God we'll hang on to it' he added.

The following excerpt from a governmental debate on Natura 2000 designations is a particularly colourful example of this discourse:

Farmers have held their precious land, which has been defended courageously over the years and coloured by the blood of those who resisted the tyranny of the land-grabbing English planters and the vile Black and Tans¹, dear to their hearts. They now feel totally betrayed at being routed from the very land where even Cromwell was prepared to leave them. What hurts most is that they believe they have been sold out by their own government (Deputy Cowley, Dáil Debate Vol 561, 19.2.2003, on-line).

Such rhetorical tactics allowed the anti-designation lobby to frame their concerns in a moral discourse. Landholders were portrayed as the victims of an unfair assault on constitutional property rights, the victims of unwarranted interference from Brussels as well as being unfairly prevented from making an adequate living from the land their fathers and forefathers had 'fought and died for'. Their effectiveness of framing their concerns in a nationalist discourse has been noted by state authorities. A NPWS official interviewed described how, in his view:

¹ The term refers to the Royal Irish Constabulary Reserve Force which was a paramilitary force employed by the British Government to suppress revolution in Ireland in the 1920's. They become known as the Black and Tans because of the colour of their uniforms. They had a reputation for brutality.

...their meetings are choreographed so that dissatisfaction raises to a crescendo, when then a person comes in who is a wonderful speaker, passionate, beating the table you know and then the local radio arrives taping the man as he speaks. Then they ask the official from the NPWS to say a few words and we sound 'starchy' and 'civil servanty' compared to this massive farming voice, you know on the one hand you have Michael Davitt² defending his rights and we're there citing the Habitats Directive (o-n:19).

Conservationist Concerns

During this controversial period of early implementation, a network of six environmental conservation groups began actively lobbying the Irish government and to an even greater extent the European Commission, in an attempt to ensure the complete implementation of the Habitats Directive and to ensure that the Habitats Directive was used to maximum effect as a flexible instrument for achieving national conservationist goals and objectives.

The network was made up of An Taisce (the National Trust), Birdwatch Ireland (BWI), the Irish Peatlands Protection Council (IPPC), Coastwatch Ireland, the Irish Wildlife Trust (IWT), Friends of the Irish Environment (FIE) and the National Association of Regional Game Councils (NARGC). Put simply, their main concern was what they perceived as the state's 'cosy relationship' with the farming lobby. Vested interests, they argued, were being allowed to interfere in what should be a purely *scientific* task of designating Natura 2000 sites. Moreover, unlike farming interests, whom they argued were being allowed an inappropriate role in the form of private, bilateral negotiations with the government, NGO conservationist groups were effectively excluded from the process. As one conservationist explained, 'we were completely

² Michael Davitt was an Irish republican and nationalist agrarian agitator. He founded The Irish National Land League which organised resistance to evictions and campaigned for reductions in rents.

'shut out' of discussions, it was all done behind closed doors with the farmers calling the shots' (05: IWT). As a result the state was also failing to acknowledge or consider their expertise in this area (and hence 'overlooking' areas that ought to be considered for designation). The Directive in sum was being implemented by 'political compromise' instead of 'sound science'. As one conservationist explained: 'it's always a compromise, this is the thing, it's supposed to be based on science but it's all politics when it comes down to it' (02: An Taisce). Again, this is similar to the experiences in France where many of those in the ecology sector 'were outraged by the 'denaturation' of the inventory work whereby 1316 sites were reduced to 1146 as a result of 'unofficial consultations' with a coalition of rural opponents (Alphandéry & Fortier, 2001: 321). The Natura 2000 line-drawing process in many Member States was as much informed by politics as it was by science. Boh (2004) notes that in spite of the closed, technocratic model employed in Slovenia, large 'cut-outs' to the original lists of sites were eventually made in a politically-driven conciliatory measure (Boh, 2004).

As with farmers, conservationists had their own concerns regarding the national appeals process. Their concerns centred on the scientific credential of the internal appeals system, i.e. the preliminary stage where an appeal against designation is initially addressed 'in house' by the NPWS. In this respect conservationists feared that 'informal' changes to site boundaries were being made within the department on the basis of non-scientific information:

At the moment many changes and de-listings are made for un-documented reasons and it can be difficult both for conservationists and farmers to see how decisions are being made. There are no records of scientific surveys to back up these informal boundary changes and de-listings (Clerkin, 2002:182).

Environmentalists have expressed concerns about the tendency towards informal objections and there is a perception that boundaries in some areas are being changed to suit developers, farmers, tourism interests and other interest group (Siggins 1999)The SAC appeals procedure lacked transparency and it was proving impossible to access much of the documentation surrounding it, said Mr Tony Lowes of An Taisce, "we should be allowed access to the decision-making process" (Siggins, 1999, on-line).

While the scientific stipulation remains a sore point with landholders, the legal interest issue (which essentially translates into ownership) has been problematic for conservationist groups. As one conservationist explained it:

It's only really if you own or lease the land (or have some legal interest as they put in it) that you can appeal a designation. You see you can appeal to have the boundaries expanded as well as reduced or cut out, so long as you have the science to back it up. So there might be some scope for conservationist groups combining resources to even temporarily buy or lease some areas you know, so we could appeal the exact boundaries (03:Coastwatch).

Finally, the conservationist lobby was also concerned that the national controls for site protection were not being respected. The integration of habitat considerations into the planning process has resulted in much controversy. As stated in Chapter 2 designation does not necessarily prevent current or future developments so long as they do not adversely affect site 'integrity' and it is up to each Member State to put in place systems to guarantee this. Under Ireland's Planning and Development Act 2000, planning permissions may be refused or conditioned by reference to the requirements of protected areas under the Birds and Habitats Directives. Planning authorities must consider whether a development is likely to have a significant effect on a SPA or SAC, and if so, require the developer to conduct an appropriate assessment (usually an Environmental Impact Assessment (EIA)). As part of this overall planning process, the

NPWS is contacted and invited to comment on any proposed development. While the NPWS's objections or observations must be taken into account, the decision as to whether to permit planning rests with the local authorities, although such decisions can be appealed to An Bord Pleanála, the independent planning appeals board.

Conservationists had two main concerns. First that local planning authorities were failing to consult the NPWS in relation to planning in designated or proposed designated areas and second, that the NPWS, when consulted, frequently failed to comment or take sufficient steps to ensure site protection. Nature-society boundaries, in other words, were being 'breached' at every turn.

To determine whether a development would have an adverse impact on the ecological integrity of these sites, a specific assessment is required under the EU Habitats Directive. Consultation by the planning authority with Dúchas is vital to this assessment, Ms Clerkin said. Fewer than 50 per cent of these planning applications were referred to Dúchas for comment, the study found. It only replies to half of these referrals.....If SAC protection is to be really meaningful, planning authorities must consider the environmental impacts of proposed developments within SACs (O'Sullivan, 2000, on-line).

Conservationists, in other words, did not trust the state's handling of the affair. The fact that boundaries were being re-drawn, 'river margins' reduced and new guidelines giving the 'go-ahead' to house-building and other developments in designated areas, all suggested that the line-drawing process was being swayed by powerful interests. These interests were infiltrating the boundaries of ecological science.

The NPWS's failure to get conservationists 'on side' during this period was, according to some conservationists, 'a major blunder' in that 'it left them with no natural allies to support them in the process, so they ended up isolated with both sides on the defensive'

(02: An Taisce). Again this is similar to the French experience where the ministry of the environment found itself 'short of associates', 'isolated not only from the opponents of the Habitats Directive but also from its own partners' (Alphandéry & Fortier, 2001: 319).

Strategies of the conservationist lobby

As with farming interests, conservationists exerted considerable pressure by lobbying the state but more specifically the European Commission in relation to their concerns. Laffan et al (2004) explain how conservationists hoped to use their relationship with the Commission to counterbalance the influence of farming groups at national level. Frustrated with the Government's limited progress in compiling lists of proposed sites for Brussels, in 1999 a wildlife grant from the Irish Heritage Council, allowed them to employ their own conservation expert to draw up a 'shadow list' of sites. This list identified over 200 candidate sites left out by Dúchas. In October 2000, the NGOs presented their 'shadow list' of sites to the Commission (almost 600 compared to the 364 then proposed by the Irish authorities) (Irish times, 7.9.2000 cited in Laffan et al, 2004). A representative from the network attended the Atlantic Biogeographical Seminar held in the Hague in 2002 to present the Irish conservationist case to the Commission and European Topic Centre (see Chapter 2).

Dissatisfied with the state's line-drawing exercise, conservationist groups, in other words, proceeded to draw their *own* lines and presented these to the higher line-drawing authority of the Commission. In drawing these geographic (or place-making) lines, the

conservationist case drew heavily on the authority of science to speak for nature. Their task was to convince the EU that their line-drawing was more 'scientific' than the state's 'politically negotiated' one. Their science, in other words, was the more credible science: more complete, impartial and less controversial.

As with farmers, conservationist groups also used the media to present their concerns to the wider public and employed a variety of rhetorical frames to do so. In the media, on their websites and brochures and in interviews carried out for this research, conservationist groups alternated between anthropocentric and ecocentric arguments for protecting biodiversity. As Takacs argues all lines of argument likely to be entertained are drawn upon by conservationists so as to build a compelling case for protecting biodiversity (Takacs, 1996). It was sometimes presented as providing essential ecosystem services and functions, at other times as an economic value, as a medical value, an aesthetic value and so on.

Biodiversity was also frequently put forward as a 'value in and of itself' (Pinton, 2002), i.e. a value that did not need explaining or justification, essentially benign and worthy: 'like God and Motherhood' (Takacs, 1996). When discussed in these ecocentric terms (as inherently valuable in its own right) biodiversity was frequently presented through a moral discourse. As one conservationist put it 'we are morally obliged to save what we have left, all of us' (07: Marine Biologist). According to Hannigan, 'presenting the claim' for biodiversity loss as an environmental problem requiring action relies upon a 'rhetoric of loss' (Ibarra and Kitsuse 1993) and a 'rhetoric of catastrophe' (Hannigan,

1995:155). Framing the issue in terms of an encroaching 'doomsday' scenario wherein accelerated species extinctions and widespread habitat loss and fragmentation are first, lamentable for their own sake and second, catastrophic in human survival terms, is he argues, a powerful discursive strategy, and one which lends an air of urgency and moral imperative to the issue. 'The extension clock is ticking down on a number of our species' one newspaper article alerts us (Deegan, 2004). 'We might all yet disappear in the blink of an eye' headlines another (Adams, 2008).

Another strategy was to present the case through an eco-modernisation discourse in which Ireland was portrayed as being 'behind' in Europe (Tovey and Share, 2003:508). Conservationists could exploit the angst that we were perceived as developmentally backward in EU and needed to 'catch up' as well as the fear that we may lose out on much coveted EU funding as a result of non-compliance.

Stakeholder voices

As the two main opposing groups in this conflict at interest group level, the main farming and conservationist organisations put themselves forward as the legitimate 'voices' of affected stakeholders. In both cases, however, these claims are open to contestation.

While farming groups presented themselves as 'the voice of affected landholders', there is considerable evidence to suggest that the views of these large farming organisations do not represent the views of all farmers (Visser et al, 2006). The IFA, it is often

suggested, only represent larger, more intensive farmers. Visser et al's research suggests that in many cases the positions and viewpoints of farmers and conservationists 'on-the-ground' are less far apart than traditionally assumed and may be best described as 'mutual ignorance of each others expertise' (Visser et al, 2006:10). This is supported by the findings of this study which suggests that not all farmers are opposed, or *as* opposed to conservationist concerns as farming lobby groups would suggest (see Chapter 9).

For many rural landholders and farmers the negotiations carried out by the main farming organisations represent a 'sell out' of farming and rural concerns and interests. The IFA's position as negotiator in the conflict was challenged by the Turf Cutters Association who rejected the SAC bog compensation scheme hammered out in relation to turf cutting in 2004. The IFA, they argued, had 'no mandate from the people' and hence 'no right to speak on our behalf' (RTE, 2004, on-line). One newspaper report suggested that:

The Turf Cutters Association accused the IFA of participating in "secretive negotiations with EU officials in Brussels in order to arrange what is effectively a buyout of owners' interests"said a statement "This was not simply a question of compensation but concerned the disappearance of a way of life" it said (Smith, 2004, on-line).

Whether more or less opposed to (or concerned about) designation, the position of the main farming organisations then, is not fully representative of all those affected. It seems that while organised lobby groups are to some extent capable of relaying and supporting the more tangible concerns of *some*, regarding monetary compensation and consultation protocols for example, they are less able to grapple with the less tangible,

more tacit (but no less fundamental) concerns relating to the implications for lifestyles, cultural norms and people-nature relationships.

Through the medium of science, conservationist groups, on the other hand, presented themselves as representing the legitimate 'voice of nature', as well as the voice of nature lovers and wildlife enthusiasts. This begs the question of who can speak for nature? The Habitats Directive states that the habitats and species under its auspices form part of a common European heritage, but as ask Pinton asks, 'whose heritage, that of scientists, ecological activists, rural populations, city dwellers, all Europeans?' (Pinton, 2001: 336). The nature 'of Community interest' identified by scientists at EU level is not the same nature 'of community interest' at more local levels, as we see further in Chapter 9.

Section 6.4. The role of the NPWS: line-drawing under constraints

At the same time as dealing with resistance on the part of farmers, the NPWS set about the difficult task of implementing various aspects of Natura 2000. While its overall objectives included the fulfilment of Irish obligations under EU nature conservation law, the Irish authorities also sought to balance and in a sense combine this with national concerns and exigencies. As O'Criodain explains:

until recently, very few other legal options were available for achieving site-based nature conservation on lands that Dúchas did not own. Accordingly Dúchas has also set out to maximise the usefulness of the Directive as an instrument for achieving national goals in this respect (O' Criodáin, 2002:189).

In order to do this, the NPWS was faced with a number of tasks that had to be carried out in particularly challenging circumstances.

First, they were faced with the task of selecting candidate sites (fulfilling stage 1 of the EU's designation procedure, see Chapter 2) as well continuing with the on-going selection of SPAs. The selection of cSCIs was based largely (although not entirely) on the network of proposed NHAs which was the product of a survey that took place from 1992 to 1994 (see Lockhart et al, 1993). The purpose of the survey, as O' Criodáin explains:

was to draw boundaries for sites that were already known to be of some conservation interest i.e. the network of Areas of Scientific Interest by An Forás Forbartha and others (Forás Forbartha 1981; Wildlife Service 1989 and others). However, in delineating these boundaries, Dúchas took a more inclusive approach than in previous cases. The resultant larger sites, with multiple conservation interests, had additional biodiversity value. This had important indirect benefits for biodiversity conservation. While there remains a need for a coherent network of ecological corridors throughout Europe to prevent fragmentation and 'overspill' effects, Dúchas has already gone some way towards achieving the same effect through the delineation of larger consolidated 'core' areas (O' Criodáin, 2002:189).

The NPWS's booklet '*Living with Nature*' explains how cSAC sites are chosen in line with criteria laid out in Annex III of the Directive, e.g. how 'representative' the site is of the habitat type in question, how 'intact' it is, and so on. The criteria for SPA selection are based on internationally agreed criteria as established by Birdlife International. Sites are generally chosen if they are:

- Regularly used by 1% or more of the all-Ireland population of a listed (i.e. Annex 1) species or
- Regularly used by 1% or more of the biogeographical population of a migratory species or

- Regularly used by more than 20,000 waterfowl.
(DEHLG, *Living with Nature*, n.d)

It further explains how site selection is also based on inputs from NGOs, professional and amateur ecologists as well as data derived from other previously existing knowledge sources and academic reports (ibid).

One of the main difficulties the NPWS faced in drawing up these lists was 'the lack of base-line biodiversity data' at its disposal (08:NPWS). Absent, incomplete and uncertain knowledge in relation to the national wealth of flora and fauna was thus a major factor, further constraining the process of line-drawing.

The relatively recent pressure or obligation to consult with (and at the very least *inform*) landholders of designations on privately held land, arising from the Roundstone ASI case, posed another difficulty facing those charged with devising the lists. This consultation process, if it was to be carried out thoroughly and meaningfully would have required financial and manpower resources much in excess of what the NPWS had been granted. As a NPWS officer explained:

We had such minimal resources at our disposal, it was really impossible to do the job to any reasonable standard, and on top of that we were under terrible time-pressure from the EU (hh:18).

As regards the onus of consultation, the NPWS (then Dúchas) was also constrained by an institutional culture of non-engagement. With no tradition or experience of meaningful consultation with the public (or non-scientific worldviews) to draw on, their approach came across as 'arrogant' and 'elitist'. As one NPWS officer explained: 'we

are just awfully bad at that side of things, dealing with the public and we had no real experience of it to draw on so yeah it left a lot to be desired' (hh:18). As in other EU Member States, the institutional mindset was technocratic. Conflict around Natura 2000 in both Finland (Hiedanpää, 2002) and Germany (Stoll-Kleeman, 2001 and Stoll-Kleeman and O'Riordan, 2002) has also been linked to the top-down, non-communicative manner in which designation was being carried out. Stoll-Kleeman et al describe the German implementation as one of 'institutional non-communication' (see Stoll-Kleeman et al, 2002:173) where 'nature protection agencies maintained an elite culture', proceeding as though engaged on an 'ecological mission' (Stoll-Kleeman, 2001a:38-40). More recent attempts to implement the project in Slovenia, Boh argues, are driven by a closed circle of 'epistemic communities'. A technocratic model, he argues, was essentially 'downloaded' from Brussels (Boh, 2004).

This is akin to what Owens (2000) describes at the "information deficit" model of lay publics, where an 'ignorant' and 'irrational' public are in possession of 'imperfect knowledge'; it can be compared with a more "civic model" where the articulation and formation of environmental concerns is based on a multiplicity of cultural perspectives.

Following the Roundstone court case, where the need for clarity in relation to the boundaries of designated sites became apparent, the state was also legally obliged to ensure that site boundaries to privately held land were visibly clear and unambiguous. In its information brochure '*Living with Nature*', the NPWS thus state that:

Wherever possible the boundaries of sites coincide with identifiable (and mapable) features on the ground or water. On land these may be fences, hedges,

ditches, roads and so on. In the case of boundaries at sea or in large lakes, the boundary may be a straight line between visible markers (headlands, island, etc) (DEHLG, *Living with Nature*, n.d.: 6)

This requirement acts as a double-edged sword. While clear site markings are welcomed in one sense, in another sense some feel that this can result in additional areas of land being included (i.e in order to reach an identifiable boundary, such as a river or a ditch). The majority of landholders interviewed in this study were unaware of the implications of the Roundstone Bog case. There was a general feeling that the lines drawn in respect of Natura 2000 sites were somewhat 'arbitrary'. This can also encourage a more cynical view of the science behind the selection process, 'I suppose you heard that the hen harrier travels by road now?' commented one interviewee sardonically (hh:09).

Following considerable discussions on the issue, one NPWS official eventually began to divulge his own, personal deliberations on the issue of site boundaries:

Well it was a difficult one you see each Member State is required to conserve the favourable conservation status of these species and habitats concerned but in North Mayo as a case in point, eh what is a representative sample of Atlantic Blanket Bog? How do you define that? Do you designate every square inch of Atlantic, there is a lot of Atlantic bog and this is the point [...] so how can we apply the Habitats Directive to one section of bog north of the road at and then south an identical habitat 50 metres away there is no designation on it, how can you justify that? Or how can you allow a machine go in and feck up that bit but 50 yards away you are dictating the Habitats Directive? (o-n:05).

This is one of the weaknesses I see in practice when dealing with landowners. Every landowner wants to know the answer to those kinds of questions, eh where you have a river and a designation on the south side of the river and not on the north side but the habitats are identical? So we took physical boundaries and drew a line around it and said that's as far as it goes. But how do you justify that to the guy on the ground? It's very hard to sell it (o-n:05).

The conflicts and controversies experienced at national level, coupled with all of the above mentioned constraints and pressures under which the NPWS had to function resulted in long delays sending lists of candidate sites to Europe. In the end, any real progress that was made was essentially a result of intense pressure from the Commission who in a letter to Irish authorities in July 1999, warned that approval for structural and cohesion funds were at risk due to non-compliance with the Habitats Directive (Laffan et al, 2004). Under pressure from Brussels some sites from the shadow lists were eventually incorporated into the network. On 7 December 2004, the Commission adopted 413 Sites of Community Importance (SCI) in Ireland. Ireland has a maximum of 6 years from that date to formally designate these as SACs. At the time of writing, the process of selecting SPAs is still on-going. 121 SPAs have been designated since 1985, and another 25 are in the pipe-line (NPWS, on-line).

Aside from the task of compiling these lists (drawing geographic nature-society boundaries) the other main tasks assigned to the NPWS centred around the national controls for site management (drawing cognitive boundaries between nature-society relations). For each proposed site the NPWS had to draw up a list of 'notifiable actions' as well as deal with planning referrals and devise specific site-tailored management plans. These NPWS site management plans are drawn up for each designated site (see Chapter 8). They list the species and habitats for which sites are designated and outline the measures necessary to safeguard their 'favourable conservation status'. These

measures often involve liaison with other state bodies and agencies, in particular the DAFF and Teagasc who are central to the implementation of REPS.

A final, yet clearly pivotal challenge facing the NPWS (and indeed all those charged with implementing Natura 2000) is posed by ambiguities and uncertainties inherent in the terminology employed. Commenting on the Irish transposition of the Directive (the Habitats Regulations) Scannell et al point out that:

The Habitats Regulations repeat many of the opaque terms of the Directive without attempting to define the precise scope or meaning of the terms used (Scannell et al, 1999: 32).

The crucial term, 'favourable conservation status', for instance, is not defined in the 1997 Irish Habitats Regulations, despite the term being employed eight times (Doyle, 2005). Failure to clearly define these terms into Irish legislation means that the highly vague and ambiguous European definitions must be relied upon. This can result in uncertainty and impede access to information (Scannell et al, 1999: 57) thus lending further complexity and ambiguity to the line-drawing exercise.

Conclusion

This Chapter explored Natura 2000 as a line-drawing exercise at national level. It showed how the Irish state had to draw these lines under a number of severe constraints, pulled from either side by two opposing camps, demanding a say in the process and using various strategies to achieve it. Both pro and anti designation lobby groups challenged the state's line-drawing exercise by various means, not least by drawing their own lines. Through the production of a 'shadow list' of sites,

conservationists tried to expand the areas of special 'nature' designated, while drawing more rigid conceptual boundaries between nature and society. Farming groups, by contrast, wished to reduce the areas of authentic 'nature' designated and drew more flexible nature-society boundaries. While farming interests succeeded in including their voice at national level negotiations, conservationist voices were eventually heard (and continue to be heard) at EU level as the Commission regularly chides the Irish state for inadequacies relating to Natura 2000.

From political power-plays to legal requirements, the exact boundaries of Natura 2000 sites (and the conceptual boundaries of nature and society) were influenced in Ireland (as it seems in many other EU countries) by all manner of 'non-scientific' factors. While political factors gained a particular salience during the designation process and economic factors received at least some recognition through reimbursements for losses from restrictions imposed under the site controls phase, no considerations, it seems, were afforded to more cultural concerns. The 'social' under Natura 2000 'line-drawing' is thus narrowly translated into 'the political' or 'the economic'. In fact while 'cultural' factors are referred to in various parts of both Directives, it is extremely difficult to see where these could be accounted for under the scientific methodology employed. While 'site controls' allow consideration of 'social and economic factors' in 'non-priority' cases, these must be for reasons of 'overriding public interest', a criteria that cultural factors are unlikely to meet. In spite of integrationist rhetoric and paradigm shifts in ecological thinking more generally, Natura 2000 line-drawing pays little or no heed to cultural diversities: these diversities, it seems, are not conceptualised

as a part of (or in any sense connected to) the biological diversity that is so dearly prized. The next two Chapters explore two case studies where Natura 2000 line-drawing has proven particularly problematic.

Chapter 7: Contested Boundaries for Hen Harriers

Chapter 2 explored the laborious process of nature-society line-drawing at EU level, revealing in particular the contentious science upon which it was based. Chapter 6 went on to consider the difficulties experienced when trying to devise these lines at national level. This Chapter turns its attention to more local levels, exploring this same process when applied to a particular locale, or place. The Chapter reveals, in particular, some of the dilemmas faced when trying to translate 'places' into 'habitats' through the application of 'uncertain, incomplete and controversial' science (Pinton, 2001, see Chapter 2). It shows how the process can be challenged and resisted by powerful groups attempting to alter the contours of the place-making exercise. In this case study we observe place-making 'under construction', tracing the process of line-drawing between the 'social' and the 'natural' as it occurs both geographically (as place boundaries are drawn around 'habitats' for hen harrier birds of prey), and cognitively (as decisions regarding the birds requirements are made in human-inhabited areas).

The first section of this Chapter introduces the hen harrier and one of the places under consideration as 'habitat'. Section 2 considers the initial process of line-drawing while Section 3 explores the controversial and uncertain science upon which it was based. Section 4 looks at the way in which these uncertainties were handled by the state while Section 5 suggests an alternative approach. Section 6 explores some strategies of resistance to place translation while the final section considers how nature-society boundaries for hen harriers were finally established.

Section 7.1. The Hen Harrier and the Stacks-Mullaghereirks

The Hen Harrier

Once relatively abundant throughout Ireland, there are an estimated 120 to 130 pairs of hen harrier left in the republic of Ireland, making it one of our rarest birds of prey. Protected under Annex I of the Birds Directive, in principle these birds enjoy the highest level of legal protection available in this country. In 2005-06, during the empirical research for this case study (some 25 years after Ireland signed up to the Birds Directive) not one SPA had been designated for hen harriers. Procedural moves to consider land for designation were leading to bitter land-use conflicts in parts of North Kerry, West Limerick and North Cork.

Traditionally viewed as something of a 'pest' by farming communities, hen harriers (Latin name: *Circus Cyaneus*) are not among the most popular birds in rural Ireland. Several interviewees described how hen harriers in olden times 'would be spotted carrying off chickens' (hh:01b). One farmer explained how 'he'd come in and take the chickens, he'd hover the same way as the hawk would hover over the yard and then he'd swoop down grab the chicken and be away with it. I suppose people considered them a nuisance, a pest really' (hh:08a).

As mentioned in Chapter 2, the procedure for designating SPAs under the Birds Directive requires EU Member States to designate areas for birds listed in Annex I. If the birds can be proven to utilise specific areas in sufficient quantities, Member States

are obliged to designate these places as habitats. The sites are then automatically incorporated into the Natura 2000 network and subject to site controls under Article 6 of the Habitats Directive. The translation of places into habitats under the Birds Directive thus takes place at Member State level, although the Commission regularly monitors compliance with the terms of both Directives (see Chapter 2).

When the hen harrier conflict initially arose in 2003, the NPWS had yet to designate any sites for hen harriers and was under increasing pressure from Brussels to do so. Based on the content of survey work carried out by networks of ornithological experts (see Norriss et al, 2002), in May of 2003, it produced a map outlining 9 'indicative areas' considered important breeding and foraging areas for the birds. In line with criteria for SPA designations, these sites were identified as holding > 1% of the all-Ireland breeding population. This early attempt to establish the geographical boundaries of hen harrier habitats in Ireland found that most sites were concentrated in upland areas in the South Western counties of Limerick, Kerry and Cork. It included over 80,000 acres of marchland, moorland and poor quality agricultural land stretching over adjacent parts of these counties. This area, known as the 'Stacks-Mullaghereirk candidate SPA' is the focus of this study.

The Stacks-Mullaghereirks: a habitat and a place

Information suggest that between 33 and 40 breeding pairs live there [Stacks-Mullaghereirks] which is one third to one quarter of the total number of hen harriers in the country. That emphasises that this area is one of great importance. If we are designating SPAs for the hen harrier at all, we must designate at least some part of that area. Other places will fall into place but it must be regarded the best place in the country for the

species (Dr Craig, NPWS, Joint Committee on Environment and Local Government, 5 March 2003, on-line)

For those concerned with hen harrier conservation, the proposed Stacks-Mullaghereirk SPA is highly valued in nature conservation terms. In such circles, the area is discussed primarily as 'habitat' and is evaluated in terms of its resident hen harrier population, its abundance of 'rushy land' and its particular distribution of young forestry and open moorland, making it 'the best place in the country' for hen harriers. But this place is valued in many other ways by other land-using groups. As one of the most densely afforested places in the country, foresters value it in resource productivity terms. As the Director of one forestry company explained:

I'd imagine between 35 and 40% of forestry nationally is done in this area so from a forestry business perspective this thing [designation] is huge (hh:09).

Given its upland location, and the prevailing westerly Atlantic winds, it is also a significant area for windfarm development with large parts of it earmarked as 'open to consideration' (Limerick County Council) or 'preferred areas' (Kerry County Council) for windfarm developments (hh:14 and hh:15). The Chairperson at an IFA public meeting on the subject thus claimed that 'there is no place in the land more suitable for wind energy than this part of West Limerick and North Cork' (Templeglantine Meeting, see Chapter 5). For windfarm interests, therefore, the area represents a vital source of alternative energy as well as a lucrative business opportunity.

As with many parts of rural Ireland, the towns and townlands in this region (such as Abbeyfeale, Newcastle west, Tournafoulla, Templeglantine, Mountcollins and Rockchapeal) have not benefited from Ireland's recent period of economic growth to

the same extent as urban areas. Most are designated 'disadvantaged areas' by the Department of Agriculture and Food and are also CLAR¹ areas, designated on the basis that their populations have fallen by more than 50% since the foundation of the State.

The landscape consists mainly of poor quality grazing, bogland, heath and conifer plantations. Given the poor quality of the land from an agricultural perspective allied to an increasingly uncertain future for conventional agricultural practices, farming in the area (mainly dairy, beef and suckler farming) is on the decline. Following government and EU policy prescriptions to diversify, landholders (mostly farmers) in the area are increasingly pursuing the alternative land-use options of forestry or windfarming.

Income from forestry is tax free. An additional attraction of forestry is that farmers can put up to half their land into forestry without losing the option of drawing the Single Farm Payment (SFP) on the area of land surrendered to forestry. Given the costs and technical expertise involved in developing their own projects or planning applications, the vast majority of farmers pursuing these options have chosen to go into partnership with forestry companies (either the state owned Coillte or with private forestry companies) or to lease out their lands to private wind energy developers.

Speaking at a governmental committee meeting in 2003, the IFA's Western Committee Chairman underlined the socio-economic significance of these alternative land-uses in the area:

The countryside in the area is rough and it is difficult to make a living from the land. One must have an off-farm income to supplement one's farm income. The people that were born in that area want to remain there. Their farm incomes

¹ The CLAR programme is a targeted investment programme for rural areas experiencing population decline

come in the form of forestry and wind energy (O'Flynn, Joint Oireachtas Committee on Environment and Local Government, 2 April 2003, on-line).

Forestry, he argued is 'part of living in the area' providing another much-needed form of income. Wind farms, he added 'will help keep people in places such as Rockchapel, Abbeyfeale, Mountcollins and Tournafulla. People want to live in these areas' (O'Flynn, Joint Oireachtas Committee on Environment and Local Government, 2 April 2003, on-line). While the extent to which these often controversial developments *are* actually encouraging locals to remain or abandon these places is open to question (as we will see in Chapter 8, Section 3) for those pursuing these alternative land-use options, however, they clearly present new locality-based livelihoods.

Section 7.2. The initial process of line-drawing for hen harriers

Circulation of the indicative maps in 2003 sparked uproar within the farming community. Concerns were initially aroused when forestry and windfarm developments appeared to be at risk prior to any official publication of sites. An IFA official explained how:

The designation of habitats for the hen harrier is different from anything else because the areas have not yet been designated or officially published, but the restrictions already seem to apply. This is simply not acceptable (11: IFA).

Under Irish law, Natura 2000 sites are legally protected from the point of publication (Step 2 in the national designation procedure as outlined in Chapter 6). European case law, however, as mentioned in Chapter 2, suggests that all sites that *ought* to be designated by Member States are legally protected at EU level once adequate science

can be relied on to prove their ecological worthiness. State authorities were thus obliged not only to designate sites so as to ensure the 'favourable conservation status' of hen harriers but also to ensure that the 'integrity' of all existing hen harrier habitats was not compromised in the meantime. In other words, they had to draw geographic boundaries between the 'social' and 'natural', establish to what extent 'social' factors might impinge on these 'natural' habitats and ensure that these factors were taken into account pre and post designation. Drawing geographic boundaries entails the translation of places into habitats. As previously stated the criteria for this translation is that the birds utilize >1% of a given area. An ornithological expert explained how the limited number of hen harriers left in Ireland makes application of this criterion difficult: 'strict application of this rule would mean designating anywhere even one or two pairs of birds are spotted.....it isn't always feasible..... so decisions have to be made as to the most appropriate sites' (01: BWI).

Although at this time, these indicative maps were frequently described as 'for discussion purposes only', in 2003, copies were sent to the Forest Service, (responsible for the licensing of forestry applications), and the local County Councils (responsible for licensing of planning permission for windfarms and housing among other things). Authorities were requested to consider these maps when assessing applications and to 'take into account the issue of hen harriers' (Canny, NPWS official, Joint Committee on Environment and Local Government, 5 March 2003, on-line). It seems, however, that no clear guidelines were issued with respect to how and when these issues were to be addressed.

Procedural uncertainty and intermittent breakdowns in communication between the different bodies became the source of much concern:

At present there is utter confusion because Dúchas issued indicative maps, especially to the planning authorities and the forestry service indicating that the areas outlined were potential areas for SPAs. Whether Dúchas meant this or not, forestry service officials and local authority planners are interpreting this as a done deal for all intents and purposes. This means that there are delays with forestry projects and windfarms.

The Minister admitted in the Dáil yesterday that the interpretation of the Dúchas directions by the forestry service and the planning authorities were regrettable and to a certain extent misleading (Deputy Murphy, Joint Committee on Environment and Local Government, 2 April 2003, on-line).

One major issue was that some of the areas earmarked by local authorities as suitable for windfarm development in their county development plans coincided with the 'indicative areas' for hen harriers:

It is ironic that Kerry County Council was the first to produce a wind energy policy and it is a coincidence that the area we sought for preferential treatment is the very area out of which Dúchas is now proposing to make an SPA. This is leading to conflict. (Deputy Deenihan, Joint Committee on Environment and Local Government, 5 March 2003, on-line).

In the case of Kerry County Council, it seems that hen harrier indicative maps were only received (or at least only considered) subsequent to the publication of county development plans. This was frequently attributed to a breakdown in communication between local authorities and the NPWS, and more specifically, the lack of a clear policy on the issue from the NPWS:

Windfarm developers and landowners in these areas are at odds to understand how areas designated as suitable for windfarm developments had not come to the attention of Dúchas prior to the ratification of the county development plan. [...] The lack of any policy on the part of Dúchas has resulted in unreasonable delays in arriving at decisions in planning for such strategic developments (Deputy Murphy, Dáil Adjournment Debate, 9 April 2003, on-line).

As part of this planning process [for windfarm applications] Dúchas is contacted and invited to comment on any proposed development. It is at this stage that confusion and lack of clarity arises. There appear to be no clear guidelines, at best, there is confusion and, at worst, no policy. (Mr Cowhig, Chairperson of the Irish Wind Energy Association (IWEA), Joint Committee on the Environment and Local Government, 2 April 2003, on-line).

[Windfarm] applications were held up because Kerry County Council officials said they couldn't make a decision on the applications until the hen harrier question is resolved. They were waiting for Dúchas to sort things out (hh:03).

Amidst all this uncertainty, erroneous, yet definitively worded accounts of 'restrictions' were frequently published in local, regional and national newspapers.

If the designations were put in place, small farmers and landowners "won't be able to plant a tree or cut a sod of turf" (Lucey, 2003, on-line).

Sensationalised media accounts seemed to prey upon the worst fears of an already vulnerable social group as traditional farming practices, along with future diversification options suddenly appeared in jeopardy. In an information vacuum, rumours quickly became 'facts'. Without any clear sense of the perimeters of the issue, new fears were born as old socio-cultural suspicions were aroused:

Various stories are circulating in parts of the country where these investigations are being carried out by Dúchas. People are hearing rumours and they are concerned. For a long time people have feared that bodies such as Dúchas will come to their rural communities, designate the area and walk away, leaving the people to pick up the pieces. Many of these fears are well founded and are based on the experience of many years (Deputy Moynihan, Dáil Eireann Vol 561, 11 February 2003, on-line).

This lack of a clear policy on the part of the NPWS (then Dúchas) was the result of absent and uncertain science regarding the birds' habitat requirements in Ireland, and in

particular the extent to which they were likely to survive in highly afforested areas and alongside windfarms. Scientific uncertainties, in other words, made it very difficult to ascertain which 'social' aspects of the 'natural' landscape might eventually prove problematic for hen harriers.

A major issue in this respect was the disclosure of 'the map' in the absence of any 'notifiable actions' (i.e. actions deemed potentially damaging that require express permission from the Department of the Environment, Heritage and Local Government, See Chapter 6). Failure to clarify or engage in open discussions regarding what these 'notifiable actions' might be created a great deal of confusion and anxiety as well as bitterness and distrust. While the NPWS continued to focus primarily on the 'scientific' task of identifying 'indicative areas' (translating places into 'habitats') landholders were more concerned about the socio-cultural and land-use implications of designation: Would designation prevent them from cutting and spraying rushes, would house-building be affected, would forestry and windfarming be curtailed?

The NPWS's failure to clarify the situation led to confusion and anxiety. While landholders on the ground were suddenly aware that their lands were 'under consideration for designation', they had no clear understanding of what this would mean for them. Absent and uncertain science in relation to hen harriers meant that the NPWS were unable to provide answers in this respect.

Section 7.3. Uncertain, incomplete and controversial science

Forestry and hen harriers

Depending on its scale and stage of growth, forestry, it seems, is both friend and foe to the hen harrier. The spread of state conifer forestry from the 1950s onwards is held to be partly responsible for the birds revival after a period of near extinction in the early 20th century (Viney: 2003, Coillte on-line). The relationship between the hen harrier and coniferous forestry, however, is not altogether straightforward. While hen harriers in Ireland are known to nest and forage in young plantations, closed canopy (i.e. mature) forests appear to displace them: 'once the forest grows to form a closed canopy, it is 'no longer suitable' and the birds 'move on to newly established stands' (hh:12). Thus a problem with forestry is that:

Once you plant a bit of ground it is only available to the hen harrier in a pre-thicket stage for him to forage over somewhere between a quarter and third of the rotation cycle, so once you plant land there is eventually a net loss in area which they can forage over (hh:18).

Large expanses of mature forestry plantations, it is argued, eventually displace the birds, as has happened Co Wicklow.

Overall, and in spite of recent research on the topic, the relationship between forestry and the hen harrier remains the subject of some debate. While there is mounting evidence to suggest that early forestry is generally desirable and mature forestry (canopy closure) generally undesirable for the hen harrier, 'the value of second rotation forestry' remains 'uncertain':

By far the biggest obstacle to determining habitat quality is our lack of knowledge about the value of different habitat types to hen harriers. This lack of knowledge is particularly critical in relation to the quality of second rotation forests [...] We have insufficient data to judge the value of this habitat in relation to either young first rotation forestry or open habitats such as bog and wet grassland. The availability of second rotation forestry will increase greatly over the next few decades, during which time the persistence of hen harriers in many heavily forested areas may hinge on the value of young second rotation forestry in this area (Coford Connects, 2006: p5-6)

It is also important to consider surrounding habitats. Because a major obstacle to hen harrier survival is the supply of food, it is argued that hen harriers do best when their nesting areas (i.e. young forests) are situated close to stretches of low moorland where they can hunt (hh:18, see also Viney, 2003). Taking a long-term perspective in the selection of SPAs, the NPWS must therefore consider relevant tracts of forestry alongside adequate stretches of nearby bog and heath. They must also avoid extensive areas of mass mature forestry. It is argued, in other words, that the birds require a mosaic-style habitat with different developmental stages of forestry intersected with areas of open ground. This suggests the need for careful and co-ordinated land-use management. Maintaining and managing this ideal 'mosaic' style landscape is not an easy task. As a Kerry-based hen harrier expert explains:

there must be hunting ground nearby which is bare, open moorland with heather and that sort of thing, if that's not there it doesn't matter how good the nesting area is they won't stay if they've nothing to rear a family so they must have a combination which they have in a lot of parts in Kerry, but then forestry keeps changing, its hard to get it right (hh:17).

To further complicate the issue, some argue that the birds' requirements are less rigid than assumed. They can, in other words, learn to adapt. While this is almost impossible to prove in the short-term, anecdotal evidence suggests that the birds *do* behave quite differently in different circumstances. Although hen harriers are generally

understood to be ground nesting birds (nesting between trees), in County Antrim there have been sightings of hen harriers nesting up in trees.

Its just a peculiarity up there which has spread over time as the young ones do the same thing they saw when they become adults, (you know I was born in a tree it must be the right thing to do, to build my nest up there). But it has caused some difficulties because at least with ground-nesting eh before they can fly the young can run around and go into hiding down under the heather and only reappear when the adult comes back to call them. But that can't happen up in a tree [...] But they don't do that down here. Ordinarily they don't do that at all. Down here they are doing what they read in the book, and the book says they nest on the ground (interviewee laughs) (hh:17).

Irrespective of well-intentioned management plans catering for the birds' apparent requirements, in other words, a lot 'hinges' on how the birds react to second rotation forestry and whether they modify their nesting habits in line with landscape changes.

Windfarms and hen harriers

Overall very little scientific research has been carried out on the impact of windfarms on the hen harrier. From a conservationist viewpoint, the two main concerns are displacement of the birds from their habitat and the risk of collision with turbines. Whether these concerns are well-founded, however, remains the source of much debate. The most frequently cited ecological text in this respect is Dr Steve Percival's 2000 report on birds and windfarms in Ireland. The study reviews current knowledge on the issue and suggests an assessment methodology, drawing on experiences from other countries. While the report is not specifically on hen harriers, it does make frequent reference to them. Overall, in relation to potential collisions and displacement, the study underlines the lack of definitive knowledge in this respect:

Studies at upland sites in the UK have generally reported very low collision rates indeed with some studies finding no collisions at all [...] although it

should be noted that to date little work has been undertaken at upland wind farm sites that would pose a significant risk to larger raptor species such as golden eagle or *hen harrier*, so *possible impacts on such as these are not yet well understood* in these locations (Percival, 2003: 4, emphasis added).

Generally there is little evidence of any major disturbance impacts in upland habitats on waders, grouse or passerines. Effects of birds of prey in this habitat have however been less studied so the results are less clear for these species. Several (including golden eagle and *hen harrier*) have been shown to be tolerant of wind turbines in other habitats, e.g. Californian grasslands though *their behaviour at European upland wind farms is less well known* (Percival, 2003: 7, emphasis added).

Against the background of this uncertainty, those supporting windfarms have tended towards more optimistic assessments (citing evidence of hen harriers nesting close to wind turbines at home and abroad) while those less supportive (or those *prioritising* the birds) prefer to err on the side of caution. While some argue that there is no firm evidence to prove the turbines displace or threaten the birds, other claim that there is no firm evidence to prove that they do not:

There is no evidence to suggest that wind farms and hen harriers are mutually exclusive (Cowhig, Chairperson of the Irish Wind Energy Association (IWEA), Joint Committee on Environment and Local Government, 2 April 2003, on-line).

When it comes to windfarms we haven't got the data to prove whether it does affect them or not. There remains a risk (hh:16).

There is a certain degree of subjectivity, therefore, in how this risk is assessed.

You see it all depends on how the precautionary principle is applied (hh:18 NPWS).

As with forestry, the unpredictability of the birds' behaviour complicates the issue. As a NPWS scientist explains:

The bottom line is we don't know, there is a collision risk, you can build models all you like but they are not very sophisticated and they are not really able to model the birds behaviour (hh:18 NPWS).

Queries in relation to the validity of 'hen harrier science' arose in one of the earliest controversial planning decisions regarding the birds in Co Limerick. In this instance, planning permission for five wind turbines was rejected by the county council, one of the principle reasons being the presence a pair of hen harriers in the area. In making its decision, the local authority drew on a submission from the NPWS (then Dúchas) along with a commissioned report on the local hen harrier population by an environmental consultancy. The applicant, however, appealed the decision to An Bord Pleanála who subsequently granted permission.

While the grounds for objection and appeal were many and varied, concerns relating to the validity of the science were central. The applicants argued that the original decision was 'based on a report on the hen harrier commissioned by the planning authority that is deficient and inaccurate' (An Bord Pleanála, 2003:5). While the NPWS's submission stated that 'it is believed that there is at least one pair of harriers nesting on Knockastanna', the applicants argued that 'there is no firm evidence of hen harrier breeding on the site' (ibid: 7). In reviewing the case, an Bord Pleanála inspector acknowledged that 'the information submitted is often contradictory, and there are widely varying interpretations of the available evidence which itself is widely acknowledged to be somewhat lacking' (ibid:10).

One particularly contentious issue relating to such controversial science concerns location of the 'burden of proof'. It is worth recalling that Natura 2000 designations can only be made or appealed on the basis of scientific information (see Chapter 2). At the time of site selection, the onus is on the NPWS to outline its reasoning on the basis of science, i.e. in this case the extent to which the birds use the area and, if so, the area's relative importance in the national context. Subsequent to designation, however, in the event of an appeal, the onus is on the landholder/user to provide scientific data that refutes this original claim. The burden of proof is thus relocated from the proponents to the opponents of designation. Doubts in relation to the validity of these original claims, and the NPWS's apparent attempts to 'push ahead' with designations nonetheless, have led disgruntled landholders to view this as a cynical attempt to shift the burden of proof onto their shoulders.

Once the SPAs are published, they have legal status. When this happens, the burden of proof in terms of an area being a SPA changes from Dúchas to the farmer proving it should not be an SPA. This is ridiculous considering that, in the first instance Dúchas has not proven that the area should be a SPA. [...] Farmers should not have to prove that their land should not be a SPA. It is up to Dúchas to provide proof that lands should be so designated. In the absence of such proof, Dúchas is not legally entitled to designate land as an SPA. (Cotter, Representative of Forestry Interests at Joint Committee on Environment and Local Government, 2 April 2003, on-line).

Sure how can we prove the birds didn't fly overhead? It's very hard to prove a negative (hh:1b).

Based on the earlier work of Wynne (1992) Yearley (2000) defines four levels of uncertainty or 'not-knowing' at which environmental decisions must be made. At the first level we have *risk*, here we know the odds but these are estimated and characterised through science and statistical estimates of error, reliability and precision.

At the next level we have *uncertainty*. Here we do not know the odds because the system is not understood well enough to have its properties quantified but most of the main parameters likely to affect the outcome are known. Next, we have *ignorance*, here we don't know what we don't know. In other words we do not even know the main parameters of the problem (for example the impact of global warming on biodiversity). Finally, we have *indeterminacy*, which is the highest level of uncertainty. Here, it is impossible to know or predict how some systems will work because the system's operation depends in large part on social behaviours that are likely to change in the future and thus are entirely outside the scope of scientific prediction (an example would be estimations of the long-term sustainability of the planet where energy consumption, waste production, consumer preferences and technological improvements and so on are not only unknown but likely to change in unanticipated ways (Yearley, 2000, drawing ideas put forward by Wynne 1992, see also Robertson et al, 2003: 405).

Uncertainty in relation to hen harrier requirements is best described as a combination of the above. Whether or not the birds will collide with wind turbines is a risk that (in spite of modeling and statistical predictions) can only be addressed with a degree of precision. The extent to which second rotation forestry can provide an adequate habitat is more a question of second level uncertainty. Here, most of the main 'parameters' in relation to hen harrier habitats appear to be known but certainty is inhibited by continually changing (dynamic ecosystem) circumstances as well as a simple absence of information. But all this is exacerbated by a degree of ignorance or indeterminacy based on the continual interplay of unpredictable social *and* ecological (or social-

ecological) phenomena. In all instances, not only are we unsure of societal responses as highlighted by Yearley (in this case perhaps the extent to which windfarm owners will comply with mitigating factors relating to the noise and timing of activities, or the extent to which foresters might disturb nests and so on), but we are also faced with the reality that *the birds themselves* may modify their behaviours and practices in light of the changes *they* experience, which is something difficult, if not impossible to know or control. Natura 2000's 'static' approach to nature conservation as Ledoux et al argue, fails to acknowledge 'co-evolutionary feedback effects' (Ledoux et al, 2003, see Chapter 2).

Section. 7.4. How scientific uncertainties were handled

During this period of heightened uncertainty (2003-2006) it is interesting to consider how the state body responsible for designation, the NPWS (formerly Dúchas) reacted to the uncertainties they faced.

The NPWS in a sense dealt with these uncertainties by not dealing with them (at least not in public) i.e. by delaying their debate and by refusing to engage with concerned parties on the issues. Their first engagement in any form of local consultation was eventually forced upon them at an IFA organized public meeting on the subject. At this meeting in Templeglantine (which received enormous publicity), the authority's inability to respond to numerous questions regarding the exact implications of site designation was perceived as an unwillingness to do so. Some of the responses provided, for example in relation to the permissibility of the cutting and spray of

rushes, were in direct contradiction to those received from other NPWS sources. The mood was overwhelmingly hostile and any hope of building trust was shattered.

The landholders attending the Templeglantine meeting clearly felt they were being 'strung along' (hh:08a):

Would it be true to say you are trying to 'fob us off' until the maps are published? (Speaker from the floor at the Templeglantine meeting)

One farmer who attended the meeting commented that:

They played their cards very tight you know, wouldn't give a clear answer on anything. They thought they could pull the wool over our eyes like by down playing any possible restrictions, until such a time of course as the maps get published and then it'll come out. It's very underhand (hh:08a).

Another described the meeting as 'a combination of no information, misinformation and conflicting information.....Dúchas refused to answer some questions, were unable to answer more questions and told blatant lies in response to other questions' (hh:09).

This and similar follow-up meetings did little other than increase perceptions of an arrogant and elitist institution 'out of touch' with ordinary people and particularly insensitive to rural concerns. In the absence of any clear information in this respect, misinformation spread and rumours flourished: 'there are all kinds of rumours circulating and Dúchas should publish concise guidelines' (Deputy Moynihan, Joint Oireachtas Committee on Environment and Local Government, 5 March 2003, on-line).

Section 7.5. How scientific uncertainties might have been handled

Along with Irwin, Wynne and other sociologists of science, public ecologists acknowledge the inevitability of uncertainties and subjectivities in all forms of ecological knowledge (see Chapter 3). If such uncertainties cannot be resolved in an absolute sense, the question then is how to manage them. This has implications for how line-drawing is carried out at local levels, which depends on how the precautionary principle is applied. This, once more entails subjective assessments disentangling 'nature' from 'society'.

In 2003 an EU funded workshop set up to explore Natura 2000 conflict management and resolution explored the role of information and 'uncertainties' in the designation process. The report (which I refer to from here as the Eurosite report) recognises that decisions relating to site management are frequently made on uncertain or incomplete scientific knowledge (Parc Interregional du Marais Poitevin, 2003: 8-11).

The report further states that 'one of the problems with site designationsis that when site designation is made public the site managers may not know themselves what the implications of the legislation are or how it will affect local stakeholders' (Parc Interregional du Marais Poitevin, 2003:11). In a section entitled 'how people behave in uncertainty' it was argued that in circumstances frustrated by absent, incomplete and uncertain information, decision-makers should be as open as possible about the current state of knowledge with those likely to be affected by the decision-making process. Rather than seeking to cover up knowledge gaps, present the uncertain as certain, or

gloss over areas of scientific debate, it was suggested that an open, inclusive discussion of the uncertainties faced would provide a more appropriate forum within which to build trust among diverse interests and devise solutions. It states that:

Making management decisions without good information can cause anxiety for site managers. It can also lead them to keep quiet about their lack of knowledge and allow stakeholders to believe advice is based on sound science rather than best professional guess. The risk is that if the decision turns out to be wrong, or the people come to realize that the science information is weak, they lose respect for site managers (Parc Interregional du Marais Poitevin, 2003: 9).

Being truthful about the level of current knowledge and uncertainty has the advantage that it builds trust that authorities are being open and straightforward. It also means that choices can be made about how crucial the information is to the decision and what to do about it (ibid).

The example was given of the 'Thanet case' in the UK. Here, the process began in the context of 'very little knowledge' about the ecological features of the site 'and even less about the way that human activities were carried out and affected' (ibid). The manner in which these uncertainties were apparently handled, however, is interesting.

Openly acknowledging this [uncertain knowledge] at the start of the process surprised local people but established respect because stakeholders realised that English Nature staff were being straightforward and honest. It also conveyed to stakeholders that their own knowledge was valued and a welcome part of the decision-making (ibid).

As previously argued, the hen harrier controversy was characterised by a knowledge deficit similar to that described in the Thanet case. The following quote, however, elucidates the very different approach taken by the Irish authorities in this respect. This interviewee, a concerned farmer who had attended the Templeglantine meetings commented that:

I think what happened at the time was that the likes of [local conservation ranger] and people like himself didn't know what was going on. This came from the headquarters of the Department and it was just dropped on them it seems. If they'd the information they could have told the people at the time but they didn't really know what restrictions would be applied either. That made it more tense because people thought they were keeping information from them but now I realise that they didn't know themselves. It wasn't clear. People thought they were holding something back and just didn't want to give the information, but they didn't know either (hh:07).

Whether or not the official version of events in Thanet reflects the experiences of people on-the-ground or simply those of officials (perhaps unaware of underlying tensions) is unclear. However, it does suggest an alternative and potentially fruitful way of dealing with uncertain science.

The Eurosite report underlined the importance of building 'good will, mutual understanding and trust' (frequently referred to as 'social capital') among and between all parties involved in Natura 2000 designation and management. At the very minimum, this necessitates clear, open and honest communication about all relevant aspects of the process, however uncertain or ambiguous. Implementing authorities in the hen harrier controversy, while they did not explicitly 'cover up' scientific lacunae, were reticent in providing information on the extent to which their decision-making was uncertain or provisional.

Given that the legitimacy of the Natura 2000 network depends heavily on science (coupled with the privileged position of 'scientific' knowledge in contemporary western culture), this tendency to gloss over uncertainties is understandable. I would

argue that such an approach is regrettable and far from inevitable. While a more open approach may have initially attracted considerable debate and provided some 'scientific' legitimacy for those opposed to designations, it may have taken the heat out of the issue, allowing the debate to continue in a less confrontational and emotionally charged environment. It may, in other words, have helped to build a degree of trust between implementing authorities and landholders on the ground. Lack of trust, as Wynne argues, is frequently at the heart of differences of opinion between 'experts' and the 'lay' public. If scientific uncertainties can never be fully resolved, building trust to deal with them should take centre stage.

Section 7.6. Strategies of resistance

Resistance to hen harrier designations was led by the Irish Farmers Association (IFA) representing landholder (and in particular farming and forestry) interests. During the course of 2003 they organized a series of public meetings in the Stacks Mullaghereirk region at which representatives from the NPWS were questioned about designations and their implications for local people. Unclear, confused and/or contradictory accounts of potential restrictions emanating from these meetings were seized upon by the anti-designation lobby who took full advantage of the information vacuum that the NPWS had allowed to develop. While restrictions on forestry and windfarm applications eventually emerged as the crux of the conflict, in 2003 there were also concerns in relation to existing farming practices (turf cutting and the spraying of rushes), planning permission for houses and land values (Lucey, 2005). Concerns surrounding land values were frequently linked to concerns relating to compensatory

payments, and in particular the fact that these did not take into account the issue of 'potential losses' due to land-use restrictions (see Chapter 6). In focusing the debate around these more general concerns, the anti-designation lobby brought the issue to a wider audience. The NPWS's inability to spell out the implications of its line-drawing allowed the anti-designation lobby to paint a "worst-case-scenario" wherein all local landholders would be affected by strict and rigid nature-society boundaries. They resisted conceptual line-drawing to some extent by portraying an exaggerated version of the process.

Resistance to geographic line-drawing included the following highly demonstrative and symbolic actions. First, it entailed the denial of access to those attempting to translate these places into habitats. An IFA resolution to resist the unauthorised entry of NPWS staff onto private land was announced. The hen harrier controversy coincided with (and to some extent instigated) the national 'Dúchas Keep Out Campaign' in 2003 where landholders blockaded their lands, physically preventing NPWS staff from entering. Thus landholders constructed their own physical boundaries around the 'places' *they* were trying to 'protect' (see Chapters 9 and 10 for further discussion of 'place' versus 'habitat' conservation). An IFA representative at the Templeglantine meeting urged local landholders to refuse open access to NPWS staff seeking to study their lands. 'Dúchas keep out and stay out' he asserted, 'until they are ready to come here and consult with us first'.

Second, resistance entailed the deliberate sabotage of 'nature' to render places less suitable for translation. In May 2003, a dead hen harrier was delivered to *The Kerryman* newspaper as a symbolic act of resistance to potential designations. Some media accounts of an earlier IFA meeting reported the IFA president condoning persecution of the birds with the provocative phrase 'Shoot the bastards' headlining one of the local papers, although others subsequently denied this (Feehily, 2003; MacConnell, 2003). Interviewees from both sides of the conflict cited anecdotal evidence that hen harriers might be considered 'targets' by those determined that their lands are not designated. As a speaker from the floor at the Templeglantine meeting asserted: 'Dúchas are supposed to be protecting the hen harrier but what they are doing is making him a target'. Others claimed that some areas of land were destroyed by 'questionable' fires making them 'no longer suitable' as hen harrier habitats (no interviewees wished to be quoted on this).

Aside from these more demonstrative acts of resistance, opponents of designation also resisted the process by attempting to expand the boundaries of the hen harrier debate to include non-scientific factors (Gieryn, 1999). These sometimes included lay knowledges of the birds: 'hen harriers actually nest between the turbines, we've seen them' (hh:01b); 'the hen harrier is alive and well and living close to a windfarm just outside of Tralee, I've seen one myself' (hh:02). More frequently, however, they included references to social and cultural factors in both the Birds and Habitats Directives:

The Directives are supposed to take social and economic factors in account, it's clearly stated, and people's livelihoods are on the line here (hh:10a).

Another commented that:

Article 2 of the Birds Directive says that the birds should be kept at a level that corresponds to ecological as well as cultural requirements and that economic and recreational factors are considered. In fact it says that we should adapt the population of the birds to that level. It's clearly stated if you read the thing. So I've been trying to find out for a long time what that level is. Nobody in Dúchas seems capable of telling any of us what the appropriate level should be. I mean how many hen harriers will we need to have knocking around before we've reached an appropriate level and what do we have to sacrifice in order to get there? (hh:09).

Ornithological experts interviewed in this research explained how this 'appropriate level' is still being debated at EU level. A representative from Birdwatch Ireland described how the government are seeking clarification on how much of an Annex I species they must protect. 'The EU have not yet given us a clear lead but we think that if we maintain around 2/3rds of the current population they will probably accept that' (01: BWI).

Opponents of designation also drew heavily on 'the myth of a complete science' (Norton, 1998, see Chapter 3) to support their resistance to the line-drawing process. They argued, in other words, for hard and definitive evidence of the birds' utilization of the areas as well as hard and definitive proof that farming, forestry and other rural practices, developments and activities *would be* detrimental to the birds' survival.

There should be scientific evidence at the very least before these designations are even considered because how can anyone come along and put a line on a map and say these areas are SACs or SPAs without coming up first of all and proving why that is so. That is totally unacceptable (Speaker from the floor at the Templeglantine meeting).

They're are making very serious land-use decisions that really affect people's lives on very scant knowledge you know, sometimes on the basis that hen harriers *may* have been in the vicinity sometime previously and like how can you argue with that? That's very hard to accept (hh: 11).

There is no absolutely no proof that hen harriers can't exist along with windfarms. (hh:01a)

As argued in Chapter 3, achieving this level of 'proof' (especially given the mobility of the birds) is neither possible, nor legally necessary (given that Natura 2000 relies heavily on the precautionary principle) (see European Commission, 2001). It seems that this is not widely known or accepted by those opposed to designations. Public expectations of 'certainty' are thus a thorn in the side of the project. By failing to publicly divulge the tentative nature of its science, Natura 2000 makes itself vulnerable to critique.

Section 7.7. Re-drawing the lines

Eventually, under mounting political pressure from forestry and windfarm interests, Minister Cullen (the then Minister for the Environment and Local Government) issued revised advice in relation to forestry and made a series of public statements insisting on the compatibility between windfarms and conservation areas. In a statement on the issue he admitted and regretted that the 'communications system in place [was] not adequate to make clear the fact that [they had] only entered into a consultation process'. 'Incorrect presumptions' he argued 'were made as to the impact of these' (Minister Cullen, Dáil Debate, Vol 564, 1 April 2003, on-line). He went on to state that he was 'confident' regarding 'the compatibility between wind energy, afforestation and areas

of preservation' (ibid). Because science was unable to devise these lines definitively – or in a manner that was politically acceptable - politics stepped in to draw them instead.

This revised advice basically paved the way for windfarm construction and new plantations to proceed in hen harrier areas (subject to certain mitigation measures). The new guidelines (which conservationists argue were both ecologically and legally questionable) succeeded in quelling the conflict for a number of years. Dismayed at this apparent policy reversal in the face of political pressure, environmental NGOs continued to lobby the EU about what it considered the government's flagrant disregard for conservation protection and EU law and the hijacking of the line-drawing process by 'vested interests' (02:An Taisce).

In 2005 the issue suddenly arose once more on foot of a 'reasoned opinion' from the European Commission in relation to Environmental Impact Assessment (EIAs) and forestry. The Forest Service once more succumbed to uncertainty as the issue of the hen harrier was forced back onto the table. It seemed that the Minister's revised advice in relation to forestry, while politically expedient, was legally questionable. While the government entered into bilateral discussions on the forestry issue with the European Commission, the NPWS, once more under pressure from farming groups, finally established a working group on the issue with stakeholders, in particular forestry interests. Environmental NGOs, however, were notably 'not invited'.

The boundaries defining the newly announced designations for the hen harrier were brokered 'behind closed doors', according to the environmental NGO Friends of the Irish Environment (FIE) and as a result will place further pressure on the threatened birds. [...] The Department of the Environment met with

landowners, the forestry industry, the farmers and the Forest Service to agree the designations. No non-governmental environmental organization was invited (FIE: 'Designations won't save Hen Harriers', on-line).

The Forest Service, in the meantime, imposed 'an effective blanket ban on forestry' in these indicative areas (hh:09) as all new applications were put 'on hold' pending negotiations. This re-ignited intense conflict on the ground but this time more specifically related to forestry. By this stage, most ordinary farmer-landholder concerns had diminished considerably, as many earlier concerns turned out to unfounded.

In 2007, agreement was finally reached between the NPWS and the working group of representatives from forestry and farming groups. Of the 9 indicative areas originally put forward, only 6 areas were finally designated, based on a 'consolidated' version of the original areas mapped. Conservationists from Friends of the Irish Environment (FIE) argue that:

The 9 areas identified in 2003 were cut to 6, and the total hectares to be protected fell from 287,000 hectares to 169,000 hectares (FIE: Forest Network Newsletter, 'Vanishing Hen Harrier', on-line).

By the time the meetings were finished FIE says: the terms of reference were changed to exclude areas adjacent to the SPAs, in spite of the EU Directive's requirements (FIE: 'Designations won't save Hen Harriers', on-line)

Although an extended version of the Stacks Mullaghereirk region was among the 6 sites designated, several other hen harrier areas (the Kilworths, the Nagles and Ballyhours) 'lost all protection' [...] 'despite the fact that the Ballyhours had seen the

most improved harrier numbers since 2000' (FIE: Forest Network Newsletter, 'Vanishing Hen Harrier', on-line).

As part of this agreement, additional payments were offered to REPS farmers with hen harrier designations in the form of a new 'supplementary measure' (see Chapter 6). An alternative NPWS Hen Harrier Scheme was set up for non-REPS farmers who are obliged to manage their lands according to NPWS prescriptions for hen harriers. A forestry protocol was established restricting planting on heath and bog but otherwise allowing an annual quota of new forestry in the remaining 6 SPAs over the 15 year term of the agreement. Contrary, it seems, to the requirements of the EU Directives (see Chapter 2) areas adjacent to designated zones were left out of the equation. Although outside actual site boundaries, conservationists claim that these may be considered 'likely to have significant effect' on site 'integrity' and should therefore be subject to certain controls (see Chapter 2). This 'deal' has caused great consternation among conservationist NGOs who maintain that new forestry essentially results in a net loss of habitat which is something they claim the NPWS had stated openly prior to the group's negotiations. Since then, a joint press release from the Ministers of Environment and Agriculture emphasised the 'critical importance of young forests to hen harriers', which recent research, they underlined, has shown to be 'a vital component in the foraging pattern of the bird (FIE: Forest Network Newsletter, 'Vanishing Hen Harrier', on-line). Many conservationist groups remain unconvinced that the measures taken to date are sufficient to protect the birds.

Conclusion

Natura 2000 stipulates that we rely on science to devise conceptual and geographic lines between nature and society. This case study reveals difficulties translating places into habitat on the basis of science that is uncertain and incomplete. While the Irish state is obliged to protect the 'integrity' of hen harrier habitats, defining what this integrity entails and thus what might actually impinge upon it is problematic. The 'naturalness criterion', as Callicot argues, is 'fraught with difficulties' (see Chapter 3). Natura 2000, as Pinton argues 'confronts its future operators with a paradox which is not easy to resolve, using not very credible scientific arguments to justify choices that sometimes involve inhabited rural areas with high anthropological content' (Pinton, 2001: 338, see Chapter 2).

For the NPWS, designating SPAs for hen harriers was a line-drawing exercise plagued with uncertainties and political pressures from all sides. Conservationist groups insisted that science alone should dictate where site boundaries should fall and were infuriated that non-scientific factors appeared to be swaying this decision-making process. They attempted to solidify the boundary demarcations of legitimate science which had the authority to make these decisions (see Gieryn, 1999, Chapter 4). Factors and actors located outside these boundaries, they argue, had no right exerting an influence in this area. The elicited transgression of scientific boundaries by non-science, they argue, eventually lead to habitat boundaries being whittled back, some even completely erased – all to placate vested interests. As credible scientific knowledge

bearers, conservationist NGOs felt that they belonged within the boundaries where these decisions were being made, yet they were 'locked out' of discussions.

The anti-designation lobby engaged in "boundary work" of their own, although it was a considerably more ambiguous process. In some cases they appealed to the authority of a bounded science, insisting that a lack of credible data in this domain should warrant a delay in decision-making. In other cases they attempted to expand the boundaries of a hitherto science to include their own knowledge claims or stretch the entire debate beyond the realm of science to include socio-cultural and economic concerns (Gieryn, 1999).

This case study is an example of how powerful groups can influence the line-drawing exercise between the social and the natural - breaching the boundaries of the 'science' finally applied and altering the contours of the place-making exercise. Mapping the boundaries of credible science, as Gieryn argues (see Chapter 4) involves 'the endless edging and filing of its boundaries, sustained over lots of local situations and episodic moments, but 'science' never takes on exactly the same shape or content from contest to contest' (Gieryn, 1999:14).

It is also an example of how scientific uncertainties can obstruct the process of line-drawing between the 'social' and 'natural'; and how 'nature' (in the form of the birds themselves) can exercise an agential role that can effectively frustrate attempts to 'control' or 'manage' it. The NPWS's relative non-engagement with concerned parties

and their failure to fully disclose and discuss the knowledge gaps and uncertainties plaguing the decision-making process only served to infuriate an already mistrusting group of rural landholders. The authority's inability to outline the implications of designation was perceived as unwillingness to do so. The information vacuum that developed was particularly fertile ground for politically orchestrated scaremongering. Resistance to place translation in this instance was highly organised, politicised and demonstrative. The next Chapter will reveal more subtle forms of 'everyday resistance' (Scott, 1985) to place translation at the post-designation stage and explore some of the difficulties experienced by those attempting to manage the boundaries between 'nature' and 'society'.

Chapter 8: Contested Boundaries in the Owenduff Nephin Complex

Chapter 7 explored the difficulties experienced when attempting to *draw* lines between 'nature' and 'society' in a particular place and the overt, politicised conflicts that this led to at the pre-designation stage. This Chapter moves on to consider some of the difficulties faced when trying to *manage* similar boundaries between 'nature' and 'society' and the more subtle forms of 'everyday resistance' to place as habitat at the post-designation stage (Scott, 1985).

The Chapter is divided into three sections. Section 1 reveals some of the difficulties experienced when managing a place as a 'habitat'. In the case of the Owenduff Nephin Complex in Co Mayo, the situation is compounded by the particular challenges associated with managing common property regimes: over half the site is commonage. In this case study, the place-making exercise is complete: place meanings as 'habitat' are officially inscribed epistemologically, legally and procedurally; official boundaries, both geographic and cognitive, have been drawn between 'nature' and 'society'; new 'rules of the game' have been established; and habitat management plans devised. As we will see in Section 2, however, the place remains hotly contested, as attempts to manage it as 'habitat' are continually resisted. We will see how local emplaced knowledges are employed to contest expert accounts, and how ecological place-making assumptions are rejected in favour of local ones. Drawing on the findings of both case studies, Section 3 of this Chapter explores the unevenly felt implications of Natura 2000 at local levels and shows how this has resulted in some negotiated support for

designation. This negotiated support is nevertheless tainted with an underlying resistance to *place as habitat* - hence the ambiguity of feelings in this respect.

Section 8.1. Managing the boundaries between 'nature' and 'society' in the Owenduff Nephin Complex

The Place and its People

The Owenduff Nephin Complex is of high ecological interest due to the fact that it contains one of the largest remaining examples of intact blanket bog coupled with a dramatic mountain landscape. The site also contains the Owenduff river, which is a particularly good example of a large, relatively unspoilt, river system in a base poor catchment. The presence of nine Annex I Bird Directive species contribute to form a site of considerable ecological value. The site is a striking wilderness of bog and mountain that forms a unique landscape (NPWS, 2005: 3).

As the above would suggest, this 26,033 hectare area of blanket bog, cliff, lake and river habitats located in North-Western Mayo is an area highly prized for nature conservation purposes. This is reflected in the fact that it is doubly designated under Natura 2000, i.e. as a cSAC under the Habitats Directive and a SPA under the Birds Directive. It also incorporates a number of bog sites that were formerly listed as NHAs or ASIs. The site was designated as a cSAC due to the presence of several Annex I habitats, one of which, active blanket bog is a 'priority habitat'. The other habitats include: two heath habitats, juniper scrub, three different lake habitats, a river habitat and mire/quaking bog habitat. Most of the site (65%), however, is active blanket bog considered to be one of the largest and best national examples of active blanket bog in Europe (04:IPPC). The site was also designated due to the presence of several Annex II species. These include plant species such as the (very rare) shining sickle moss and

marsh saxifrage as well as the more well known otter and salmon. The Owenduff Nephin Complex SPA was designated in particular for four species listed in Annex I of the Birds Directive, namely Greenland White-fronted Goose, Golden Plover, Merlin and Peregrine Falcon.

Contrary to most ecological, and even some tourist descriptions of area presenting it as pure wilderness, the complex contains or is bounded by several villages and townlands and is home (inter alia) to approximately 300 hill farmers and their families. Many from these old farming communities can trace their local family connections back generations. Locals describe their communities as particularly tightly knit, with strong bonds of reciprocity and support. In spite of technological innovations (from the tractor to the sausage machine) which have reduced the need for local manpower, the tradition of 'the meitheal' (a system of mutual assistance for labour intensive work) remains very much alive, particularly among the older generation.

The meitheal is still practiced around here though maybe not as much as at one time. Mostly it was for building the wreck of hay, you'd just say to the people I'm wrecking the day after tomorrow and they'd come and maybe bring another one or two. There might be 8 men here, and you'd do it for turf cutting too, it was helping each other out you see, then you'd do it for the next fella, and we called it the meitheal (o-n: 10a).

The current generation of hill farmers are mostly older farmers (aged 55 plus) as the younger generations tend to migrate to the towns for employment. As in many parts of rural Ireland, farming as a lifestyle and livelihood is on the decline and depopulation poses a formidable threat to place viability and community life. Aside from farming, tourism provides the main form of alternative income and is a livelihood option with

ever-increasing potential, given the recent development of a National Park and the on-going popularity of hill walking in 'the Bangor Trail'. The recent promotion of walking tourism in the area is bound up with attempts to re-envisage the area as a 'multifunctional' rural place (Crowley, 2006).

Ownership of the land included in the complex falls into three types: public land, private land and commonage. More than half of the site is in commonage. As we will see in the next section, this fact, at least from the point of view of the NPWS, renders its management particularly challenging. One third of the site is state-owned and comprises the recently established Ballycroby National Park which (as we will also see later) has received a very mixed welcome from locals. The remainder of the area is in multiple, private ownership.

On 13 June 2002, the European Court of Justice ruled that Ireland had failed to comply with measures required to counter the overgrazing of sheep in this ecologically sensitive area. Despite some attempts to curb sheep numbers in the area, Ireland's overall response was deemed to be 'inadequate'. While the ruling made particular reference to the declining habitat of the red grouse, a species listed under Annex I of the Birds Directive, concerns were equally linked to the denigration of numerous wildlife habitats, not least that of blanket bog. On foot of this ruling the Irish Government took a series of initiatives to reduce sheep numbers in the area – most of which, however, have been largely ineffective. The most recent development in this respect is the requirement that *all* farmers with shares in commonage remove *all* their livestock from

the commonage for a period of five months of the year. At the time of writing, this obligatory removal of sheep (from 1 November to 31 December and from 14 February to 13 May each year) is the cause of considerable conflict and resistance.

Commonage as a form of land tenure

Before a discussion of the de-stocking controversy, it is useful to consider the nature of commonage as a form of land tenure – one that arguably poses particular challenges to any land management objectives.

Common property regimes were once widespread in Western Europe but declined in recent centuries 'due to an academic, cultural and political privileging of individual forms of property, combined with the pressures of population growth, commercialisation and industrialisation' (Brown, 2004:2; see also North and Thomas, 1973; Dahlman, 1980; Neeson, 1993; Yelling, 1997; De Moor et al, 2002). It is estimated that only approximately 9% of the land area of Western Europe is now managed through common property arrangements (Brown, 2004:2).

The persistence of commonage (i.e. land on which two or more farmers share ownership and/or grazing rights) as a form of land tenure is sociologically interesting for a number of reasons. Given the significance of individualization and private-ownership in the modern era, the survival of commonage as a system of land tenure has been described as something of an 'anomaly' or an 'anachronism' (Brown, 2004, see also McDonagh, n.d, on-line). It has been described as an institution 'caught between

the history of a traditional society and a modern “efficient” society’ (McDonagh, n.d., on-line). McDonagh et al point out that:

Its very definition and identification supports a myriad of intricacies in terms of unclear boundaries, absent shareholders and an ‘out of time’ multi-ownership system, atypical in a country with one of the highest levels of owner-occupancy in the EU (Lafferty et al, 1999) which all adds to its somewhat impalpable nature (McDonagh, n.d. on-line).

Drawing on examples from the UK context, Brown (2004) has explored de-valorising and re-valorising discourses of common land. De-valorising discourses, seeking to legitimize privatization, she found, often draw on the ideas of influential thinkers through the ages (such as Aristotle, Hobbes, Smith, Malthus, Locke and Hume). There are two dimensions to such negative appraisals: first commonage as an impediment to progress; and second, commonage as a cause of resource or environmental degradation. While the former concern for ‘progress’ and ‘land improvement’ had a particular resonance in the post-war era, the latter concern for environmental protection is of more recent origin. Interestingly, at different points in time and space, both have been referred to as ‘the tragedy of the commons’ (Hardin, 1968 cited in Brown, 2004).

The writings of Hume and Locke, in particular, lend support to a de-valorising discourse based on the need for agricultural improvement. Hume describes the tragedy of a common meadow that goes un-drained and thereby “unimproved” as each neighbour evades responsibility for its improvement and seeks “to lay the whole burden on others” (1978, *A Treatise on Human Nature* III, part I, section VII, cited in O’Neill, 2001:703). Ironically, present-day concerns regarding the shirking of individual responsibility in commonly held land are much more associated with the reduction of

(if not abstinence from) farming practices in the area for ecological reasons. Thus there has been a shift in focus to the second dimension: commonage as a cause of resource or habitat degradation.

With the greening of the CAP and decoupling, the main income to farmers in the study area is EU payments either directly relating to conservation concerns (e.g. REPS) or heavily dependent on cross-compliance with conservation-driven targets and policies (e.g. the Single Farm Payment). Reliance on your neighbour to de-stock as a management prescription takes on a new significance when their failure to do so has monetary implications for all shareholders. When commonly held natural capital is degraded, moreover, it is often difficult to say precisely who is at fault (Pretty et al, 2003: 632). Thus irrespective of changing conceptions of what constitutes the ideal land-use vision for the area (e.g. production or conservation), questions of responsibility and fairness remain part and parcel of common land management.

Brown also points to re-valorising discourses of common land recently emerging in scholarship, policy and practice. She argues that

Many scholars have drawn attention to a plethora of empirical examples that demonstrate well-functioning and historically enduring commons management (Ostrom 1990, McKean 1992, Bromley 1992, McCay and Acheson 1987). That “herders themselves would agree on common rules and enforce them collectively” (Burger et al, 2001, p3) failed to be acknowledged in the ‘tragedy’ discourse. Attention has also been drawn to cases demonstrating that common property is not necessarily less efficient than private property (Stevenson, 1991).

(cited in Brown, 2004:7)

Efforts to discredit common property regimes have often conflated 'common property' with the notion of 'open access'. While the latter suggests 'everybody and therefore nobody's property', common property regimes can have well established and enforceable relations of entitlement (ibid:6). This was clearly the case in the Owenduff-Nephin Complex where the old, self-regulated 'bands system' of common land management (see Chapter 6) prevailed for several hundred years:

It used to be done all over the west, there used to be a manager of the commonage and he would manage what went up and what came down you know, he'd be one of the group and he'd decide you have so much land you can put up so much stock, and if you put up one more than that you'd hear about it (o-n:01).

You see every farmer enforced the other farmers, it was self controlled. Each made sure the other fella didn't go above his lot you know. If you went beyond what was decided the others would be down on you like a ton of bricks. Sure it worked for a couple of hundred years (o-n:11).

Revalorising discourses have also been reproduced as part of a revived interest in community-based resource management. Such systems are:

underpinned by notions of justice and social inclusion and seen as a vehicle for securing local resources and encouraging "bottom up" economic development reflecting a discourse of the commons increasingly found in many other parts of the world (Agrawal & Gibson, 1999 cited in Brown 2004:6)

Others such as McCay (2002) criticize the 'property rights' school for its 'narrow, instrumental and decontextualised' conception of the relationships between common land and local landusers (Brown, 2004:6). They emphasize the diversity of values and normative concerns frequently held in relation to common land. McCay (2002) points to the role of commonage in community bonding, as a focus of resistance to outside incursion, and as a means of claiming or reasserting cultural identities.

While the importance of local institutions has long been understood in the common property literature it has only recently come to be recognized as important for biodiversity conservation and management (Pretty et al 2003: 632; see also Ostrom 1990; O'Riordan & Stoll-Kleeman 2002). Because policy-makers and practitioners have been pre-occupied with changing *individual* (rather than group or community) behaviour, 'local institutions have diminished in importance and often entirely disappeared' (Pretty et al, 2003:632). Responsibility for the management of natural resources has thus been transferred from the group dynamic to the state apparatus – with the state regulating the activities of individuals in this respect.

An upshot of this is a reduction in social capital (the social bonds and norms of trust, connectedness and reciprocity that can provide an effective social 'resource' for group members). Such capital, however, is increasingly recognized as *pivotal* to effective biodiversity management, especially but not only in relation to common property regimes (Pretty et al, 2003):

As social capital lowers the costs of working together, it facilitates cooperation. People have the confidence to invest in collective activities, knowing that others will also do so. They are also less likely to engage in unfettered private actions with negative outcomes, such as resource degradation. Four central features of social capital have been identified (Pretty & Ward, 2001): (1) relations of trust; (2) reciprocity and exchanges; (3) common rules, norms and sanctions; and (4) connectedness in networks and groups (Pretty et al, 2003: 633).

The EU's system of headage premiums in the 1980's has been recognised as detrimental to social capital. As Feehan argues

the payment of headage premiums encourages individual advancement at the expense of the community, undermining the spirit of co-operation that is essential to good commonage management (Feehan, 1997: 585).

It also led to increased division of mountain commonage, a trend encouraged by an Irish Farmers Association campaign in the 1980s, which conservationists argue could have a disastrous impact on natural habitats and landscapes (Feehan, 1997: 585) as sheep are restricted in their movements causing overgrazing. As Brown argues, 'the most powerful farming lobbies often carry underlying assumptions of common land as less important than more 'productive' areas, thereby reproducing some historical devalorising discourses of commons as anachronistic' (Brown, 2006:18).

Overgrazing on the commonages and attempts to manage it

The origins of the overgrazing problem are rooted in almost three decades of a flawed EU (then EEC) agricultural policy. Under the productivist ethos of the Common Agricultural Policy, farmers in Ireland (and in other European Member States) were encouraged to produce livestock in unlimited quantities with virtually no heed to environmental constraints. The introduction of the ewe premium in 1980, for instance, provided a highly lucrative incentive for hill farmers to increase their ewe numbers. With no ceiling on the numbers of sheep that could be kept, it meant that the more sheep a farmer had, the more money he/she could draw down from Brussels. The upshot of this was massive overgrazing of sheep on commonage areas, particularly in the marginal lands of the western counties. It was only in the early 1990's that the ecological effects of overgrazing began to emerge as a topic of concern and European (and in turn Irish) policy began to embark on a U-turn.

Destocking of commonages was first introduced into Ireland in 1996 with the Rejuvenate Degraded Areas policy, which was incorporated into REPS. The objective was to rejuvenate commonage areas that had been overgrazed to such an extent that vegetation would not regenerate until farming practices were altered. The measure was of very limited success. In fact in the late 1990's the European Commission became increasingly concerned that REPS was not delivering in respect to ecological management of commonages. A NPWS officer explained that:

There were numerous complaints to the EU that REPS wasn't actually addressing the problems that existed in peatland areas in relation to overgrazing. There was serious erosion, there were fish kills and a whole series of consequential environmental problems. It was seen that REPS which was a targeted scheme pumping money into areas such as Western Mayo wasn't actually delivering the core deliverable in relation to biodiversity. Yes it was addressing issues of farmyard pollution, the aesthetics of farmlands and maintenance of hedges, which were all positive, but for the open landscape biodiversity areas, peatlands in particular, there was a serious overgrazing problem going unaddressed (o-n:05).

It eventually reached a point where the Commission threatened to stop all EU agricultural subsidy payments in the overgrazed areas. REPS, the EU funded scheme that had purported to tackle the problem, came under particular fire. A Teagasc official explains how in 1998 'there was so much concern about overgrazing on the commonages in the west that the Commission threatened to stop all REPS payments on commonages in Donegal, Leitrim, Sligo, Mayo, Galway and Kerry' (06:Teagasc).

This resulted in an agreement with the European Commission in 1998, under which REPS was revised (in 1999) to include a new supplementary measure. The objective of this measure was to provide a more comprehensive approach to the conservation and

regeneration of designated 'target areas' including commonages (see Chapter 6). This new measure secured additional payments to farmers with commonages in turn for their mindful management of them. The agreement, however, was cognizant of the fact that much of the damage to the commonages was being carried out by those *outside* the *voluntary* EU funded REPS scheme. The practices of non-REPs farmers would have to be addressed and this necessitated some kind of a 'common framework'. The Commonage Framework Plans (CFPs) were introduced for this purpose. These plans would take the form of tailored ecological prescriptions for individual commonages based on the degree of damage found. A nation-wide assessment of the conditions of the commonages was the first step. The next would be to bring all stocking densities in line with 'carrying capacity' (o-n: 05).

As the assessment of commonages was a major exercise likely to take a number of years, an interim measure was put in place whereby immediate destocking could take place in some areas. In the six western counties, including Co Mayo, where the overgrazing issue was deemed to be most serious it was decided that ewe numbers could not exceed 70% of the 1998 quota. Affected farmers, in other words, were required to destock by 30%. Crucially, however, this provisional, interim, destocking only applied to *non-REPS* farmers. Destocking under REPS was entrusted to REPS planners who were charged with designing a suitable stocking regime for the farmer: REPs payments, in other words, included a destocking component. Thus while non-REPS farmers were 30% de-stocked and financially compensated, REPS farmers were not. As we will see later this has been the source of much bitterness and resentment in farming communities.

The reasoning behind the introduction of Commonage Framework Plans (CFPs) was also bound up with concerns relating to the objectivity of REPS planners on the ground. Given their close ties with local farming communities it was envisaged that they might be underreporting instances of overgrazing, the cumulative effect of which being widespread habitat destruction.

A NPWS official explained that:

It was decided that we would have to assess the conditions of all commonages in the country and produce independent reports that wouldn't be necessarily linked to the REPS plan or planner so that everybody going into REPS or the NPWS scheme would have a template document which would tell all planners what the conditions of the commonages were, it wasn't left to them to decide it themselves. So you would only have one answer for each commonage, you wouldn't have 5 different answers if you had five different REPS planners (o-n:19).

By 2003, Commonage Framework Plans (CFPs) were drawn up for every area of known commonage in the country with each plan containing a destocking percentage based on the degree of overgrazing found. Every farmer with commonage shares, whether in REPS or not, would have to abide by the prescriptions (the most important of which being the destocking percentage) contained in the particular plan for that area.

Implementing the CFPs at individual farm level, however, has been highly problematic. From a conservationist viewpoint a major problem in this respect is that the CFPs were never fully implemented as envisaged. Mindful of the hostile reception of the farming lobby for whom destocking was clearly unpalatable, the government adopted a softly, softly approach. Regardless of figures drawn up for individual commonages destocking figures were capped at 50% 'for political reasons'.

So although the destocking figure in the CFP for the southern part of the Owenduff is I think around 72% that figure was never actually applied at farm level. In 2002 it was decided for political reasons to cap it at 50%. If that wasn't enough it would go up to 60 % in year two, and if that wasn't enough it would go up to 70% in year 3, and full destocking after that. Now as in all things political once a decision is made it's very difficult to get that reviewed (o-n:19).

Another barrier to CFP implementation was the delay in establishing a NPWS farm scheme as an alternative to the REP scheme. As not all farmers were willing to join the voluntary REPS, it soon became evident that there had to be some way to ensure that CFP objectives were complied with at farm level by non-REPS farmers. An alternative farm plan administered by the NPWS was thus envisaged for this purpose. While farmers could not be obliged to join REPS, those with 'target land' (as explained in Chapter 6) would have to join one or the other. Delays in implementing this alternative scheme, however, have meant that non-REPS farmers were effectively left to their own devices for over a decade. With no farm plan available to bring them into line with the CFP criteria for their area, many simply continued business as usual and overgrazing continued apace.

Thus for reasons of political hesitancy and administrative hitches full implementation of the Commonage Framework Plans was never achieved as originally envisaged. Where destocking has taken place, moreover, the formula devised to put it into effect has been criticised it as being both ineffective and unfair.

In order to implement the destocking percentage for the commonage at individual farm level a formula was devised. The formula was to be based on the farmers 'stocking

density', his/her share in commonage and the amount of damage found in the CFP.

Representing this situation in a simple statistic is less straightforward than it sounds.

Under the formula, a farmer's share in commonage is expressed as 'stocking density'. This is based on stock and forage areas farmed in the reference year of 2001, divided by share in the commonage. Stocking density, therefore, is partly based on *total* forage area (e.g. whether commonage *or* privately owned/leased inside land). This stocking density figure is then multiplied by the hectares of shares in commonage land which is then multiplied by the destocking percentage in the CFP (i.e. the percentage of damage found). The fact that all available forage areas are included in the stocking density calculation and that this formula is applied across the board (i.e. to all farmers including those with very small and very large shares in commonage) has been the cause of much frustration and annoyance. Some have argued that it has allowed farmers (with a comparatively large non-commonage forage area or 'inside land' (see Chapter 6) coupled with a high density of livestock) to get away with considerably less destocking than others: 'If a farmer only has a small area in the commonage compared to his inside land, even though his stocking rate might be quite high and the destocking in the plan might be quite high, because he has a very small area in that commonage, his actual destocking would be low' (0-n:01).

There appears to be an awareness of the limitations of the formula among NPWS officials. As one interviewee put it:

the argument has been made that we should only assess the sheep that go to the commonage, but we don't know the sheep that go to the commonage and its likely in most cases that the farmers sheep all go to the commonage for a certain

period of the year, so yeah that was a mental leap that was taken that all of the farm was taken into account, but the destocking only applies to the commonage (o-n:19).

Many farmers felt that this was not only unfair but also ineffective in terms of resolving the problem. As one farmer explained:

The destocking system is crazy, it's all done by figures and it doesn't add up. In some areas the figures didn't tally, eh they were cut back but not cut back as much as my neighbours and I would be. Because of the particular distribution of inside land and commonage, it didn't work in that area. But it worked well around here, you see we got such a cutting that it worked in a big, big way, there's heather out in our area now (o-n:11).

This line of argument was backed up by the local Teagasc officer:

On the seaward side of the commonage there are quite small shares of commonage and quite a lot of inside land so some of them ended up losing very few sheep or even getting sheep back from 1998 figures. It [the CFPs] addressed overgrazing where there is a lot of commonage and only a small amount of inside land, but it didn't really address the problem on that side of the complex (o-n:01).

The destocking controversy in the Owenduff Nephin Complex has proven extremely difficult to address. It reveals the difficulties encountered when trying to apply standardized solutions to complex realities affected by the particularities of place. Differences in land-ownership/entitlement patterns on the ground were 'glossed over' to facilitate a common system of implementation. The calculations on paper overlooked a wealth of emplaced social-ecological phenomena.

There are also difficulties in ascertaining *which* farmers are causing the damage in commonly held land. Whatever about practices in the pre-decoupling era, there appears to be a current consensus, among both farmers and NPWS staff that not *all*

farmers are contributing to overgrazing to the same extent. With decoupling and the introduction of the SFP (under which there is no longer an incentive to maintain large stock number) few farmers, it seems, see a logic in retaining large ewe numbers on the commonages. One farmer claimed that: 'the damage is being done by a minority who simply refuse to change for anyone and they are basically riding roughshod over the rest of us' (o-n:15). Similarly a NPWS official confided that 'it only takes one or two farmers to overgraze a commonage, but the problem is trying identifying them' (o-n:05 NPWS).

To decide who's causing the problem is very, very difficult and you can't decide by virtue of numbers alone, I mean a farmer could have 500 sheep and not be damaging the commonage as he could have very good inside land, and another could have 200 sheep and be abusing the commonage, so it's not a numbers game. And it's not even an areas game, as a farmer could have 150 hectares of commonage but could be causing severe damage in an area adjacent to his greenland because he supplementary feeds sheep there. And it's not even a question of whether a farmer is in REPS or not. Even within schemes farmers who on paper are ostensibly farming very well could be doing damage. There are even instances of REPS farmers dumping rubbish onto the commonages so as to comply with REPS inspections (o-n:19 NPWS).

Absent and uncertain knowledge in relation to local relations and interactions with enplaced nature led to the NPWS decision to adopt this 'broad brush' statistical solution to a complex social-ecological problem – a solution that was widely perceived to be most unfair.

According to Latour 'a calculation on paper can apply to the outside world only if this outside world is itself another piece of paper of the same format' (Latour 1987, 251). In translating this area into paper format, a wealth of detail was lost in the process. Maps, statistics and calculations are inadequate to grasp the complexities of place. In

this case they overlooked local land ownership and habitual land-use patterns. In formulating these figures, the places they were trying to protect were reduced to all that could be presented in this paper format: 'scientists build their enlightened networks by giving the outside the same paper form as that of their instruments inside' (Latour 1987:251). Place insensitive, standardized solution, such as the destocking formula and the more recent five month blanket ban are widely perceived to be most unfair and have led to considerable intercommunity tensions and divides (which will be discussed further in section 3 of this chapter).

This section has shown how managing place as habitat in the Owenduff Nephin Complex is complicated by the particular challenge of managing commonly-held land through policy prescriptions aimed at individuals instead of communities. The result was a further blow to social capital, which is increasingly recognised as essential to biodiversity protection, especially of 'the commons' (Pretty et al, 2003: 633). Managing this place as a habitat entailed the translation of the place in all its social-ecological complexity to a standardised set of assumptions – assumptions that could not fully grasp the peculiarities of place and people-place interactions.

Section 8.2. Resistance to Place as Habitat by Local People

My task in this section is to show how the translation of place into habitat is being resisted in the Owenduff Nephin Complex. NPWS's attempts to consult locals in relation to conservation objectives are frustrated by cynicism on the part of hill farmers and their unwillingness to acknowledge these places as primarily 'habitats'.

As part of their local consultation process, the NPWS held a series of information days about site designations. Of the hill farmers who attended them, most seem to have found them of limited value:

I went to that one, you went in and talked to this man and he had maps of what was what, what we knew already, it was of no real benefit.....and they'd say we might do this or we might do that. I came away no the wiser (o-n: 08).

As part of this process landholders are encouraged to join 'liaison committees' to discuss any concerns arising. In this case, however, resistance on the part of the hill farmers circumvented and frustrated the process:

We tried to set up liaison committees for these plans, eh farmers have generally boycotted it. They've said eh this isn't relevant to me, this is all just species lists, habitats and restrictions, why should I get involved? I don't even want to accept that this exists (o-n: 19).

Also as part of the consultation period, an overall site management plan for the complex, devised by in-house NPWS experts, was handed out for comments. Written in a scientific discourse, the plan lists the various species and habitats in question, the scientific and legal grounds for their protection, as well as a series of measures to maintain their 'favourable conservation status' (destocking of the commonages in this case being undoubtedly the most significant issue). Aside from incidents of minor factual corrections, local input into the plan was virtually non-existent. A NPWS official explained how 'copies of the plan were sent out to all those affected. It's very important that they understand what we're trying to do..... so they can come back to us with any questions' (o-n:04). The NPWS approach reflects an "information deficit" model of lay publics where the 'imperfect knowledge' of an 'ignorant' public must be

addressed so as to achieve certain objectives (Owens, 2000).

The management plan makes no reference to local livelihoods or the history of people-place relationships. The only reference to local people comes in the form of a list of land-use practices likely to affect site integrity (NPWS, 2005). This suggests a view of local people as “stressors” (Berkes, 2004). The management plan for the ‘habitat’, in other words, ignores other dimensions of this ‘place’. This ‘unbundled’ (Gieryn, 2000) approach appears to be common across the EU:

Natura 2000 management wants socio-economic concerns to be taken on biodiversity. However, the action plan/management scheme only delivers actions for biodiversity and ignores socio-economic well-being. That is not holistic and it can have a very significant effect in a local area in this way (Parc Interregional du Marais Poitevin, 2003: 16).

Resistance through emplaced knowledges

Underlying resentment towards designation in the Owenduff Nephin Complex can be understood as a continued questioning of the line-drawing exercise between ‘nature’ and ‘society’ and the construction of ‘natural places’ as an integral part of this process. One way in which the construction of place as habitat is being resisted is through the rejection of expert knowledges of ‘nature’, in favour of locally situated knowledges of ‘place’. Local knowledges of emplaced nature were frequently drawn upon as an effective form of resistance to Natura 2000’s science-based, de-contextualised expert narratives. In doing this, local people also questioned the boundaries between ‘science’ and other ways of knowing and relating to nature (see Chapter 3).

One of the most extensively discussed examples of the significance of local, situated knowledges of nature has come from Wynne's (1996) study of knowledge of radioactive contamination on Cumbrian farms in the wake of the Chernobyl fall-out. The external experts brought in to address the problem drew on knowledge claims that were insensitive to local conditions (from soil types to the practicalities of animal husbandry on marginal lands) and overlooked important local, emplaced knowledges.

As in Wynne's study, farmers in the Owenduff Nephin Complex drew heavily on their own stocks of situated knowledge in order to question, challenge and de-legitimise expert accounts. The five month blanket ban (which requires the removal of sheep for two months followed by their return to commonage for a period before their removal for another 3 month period) was argued to be 'nonsensical' on the grounds 'the sheep won't go back to where they were before' (o-n:08). The sheep, it was argued, had their own norms of behaviour which, given their free roaming practices in the commonages, could only be controlled to a certain extent. Several farmers spoke of how younger sheep continually return to the spot where they originally grazed with their mother while obstinately refusing to remain in certain other areas.

Another farmer commented how:

There is always this prevailing wind now it might only be a light wind but the animals have this instinct to go towards the wind to get away from the migets'. Along the west of Ireland you have a lot of migets which are terrible for animals and humans, now a non farmer or a farmer who didn't have sheep on the hills might not be aware of that (o-n:14).

The NPWS expert-devised account of overgrazing and how to resolve it was not commonly accepted. Some were clearly suspicious of expert knowledges that they argued had given them highly questionable advice in the past. Some pulled holes in the NPWS arguments while others found NPWS findings contradicted with their own experiences on the ground.

The NPWS account of red grouse decline as the sole effect of overgrazing sheep was challenged by an argument that a combination of other factors were also at play. Many pointed to increased numbers of foxes and crows preying on young grouse – numbers that were once kept in check by local gamekeepers:

Well yes the grouse is not so plentiful now it's true. They are saying it's all down to overgrazing but I really think a lot of the damage is done by the grey crows taking the eggs because it's alive with grey crows around here and you see them taking the eggs. Sure they've the nests robbed straight away (o-n:13a).

They are talking about preservation and all that but you see the fox is terrible, he's a deadly enemy for the grouse, he'll eat the eggs and [inaudible] as we call them, the young birds. And the grey crow too. I've seen them at it many a time (o-n:10b).

Years ago all the game keepers around here at a certain time of year would go out and shoot all the cock grouse because the cock grouse kills the young grouse you see. But there's no preservation anymore you see, no control on the grey crow or fox. There's no one keeping them in check (o-n:15).

Others questioned that the de-stocking of sheep would effectively *resolve* the habitat management dilemma. Undergrazing, it was suggested, could eventually pose as formidable a problem as overgrazing, and one that might even be harder to address: removing the sheep from the commonage for long periods would eventually result in

stale and overgrown sedge and heather (that 'no sheep would touch'). This, it was argued, was not only unsuitable for the red grouse but likely to result in unpredictable wildfires that might be difficult to control.

The old practice of controlled burning, in contrast, was understood to have played an important role in rejuvenating the heather and encouraging fresh growth. Forestry and (misguided) ecological concerns were held responsible for the (forced) decline of that practice:

Now since the forestry started 40 years back we've not been allowed to burn it. So there's not been a pick of heather burnt since then and that heather is now dead.....They are trying to put it down that the sheep ate it but there's more to it than that..... And back when people were going to the bog and lighting small fires for the tea as well, the ash from the fires was used to fill the potholes you see, and that was good for the birds. But that has all had to stop too (o-n:08).

The heather has died on the hills alright. Where there was fine wild heather burned every four or five years but now there isn't a pick. There's a fine green grass growing but there isn't enough animals to keep it ate down bare in the early part of the year in April May and June. There isn't enough sheep on the hills to keep it ate, they just won't eat the old grass, they only want the fresh, short stuff. It will be July before anything comes through in that to eat. What they (NPWS) are doing is not helping it at all because no animal is going to eat old grass, its no good to them, do you see? (o-n:09).

Informal accounts based on first-hand, situated knowledge were sometimes supplemented with stories of supportive scientifically derived reports:

This agriculturalist lad got heather from here and sent it off to Scotland to be analysed and he got word back that it should be burned in rotation every six or seven years to keep the young heather growing, but that's what the older people were doing and they told us to stop! (o-n:09).

Many also partly based their accounts on knowledge of incidents occurring elsewhere, such as the spread of wildfire due to overgrown heather:

Some day some fella will be up on those hills and let a cigarette go and it will all go up in flames with all the forestry, with all that old heather, old sedge and grass and they won't be able to get in near it. That's what happened in Donegal and Scotland (o-n:14).

The particularities of place and emplaced nature were recognized as highly significant while expert tendencies to suppress or overlook such differences were considered nonsensical.

If you look at Killarney national park, there's a type of grass that the new sheep wouldn't eat so they got rid of them and they had to get the original Kerry cows back in to eat that grass, the others wouldn't eat it. And grazing is necessary even crucial for these habitats too. Mark my words it's going to happen here. They'll end up wishing they hadn't removed so many local sheep (o-n:11).

Expert forms of interaction with local people and local nature were critically assessed as detached or aloof. The following quote suggests a resentment towards the scientists aloof 'gaze' as opposed to a more down-to-earth embodied interaction:

I've a neighbour over the bridge he's in commonage with just one other person. They put restrictions on him. Two girls came stood on the main road and looked at it and there's that height of sedge on it [raising his hand in the air]. It's rough grass that grows on the bog, its good for the wildlife, a browny grass. They restricted the whole thing over that and they never even went in and walked on it. They just looked at it from the road and that was it. They probably knew nothing about it. Ah they were very resentful over it. Imagine having about 30 or 40 acres of commonage between two people and having to cut your sheep down to 25 or something over it, for no reason in the world (o-n:10a).

While distant, expert accounts of local nature were criticized, some felt that the local conservation rangers (see Chapter 6) had a better appreciation of these place

particularities. The 'official line' from the NPWS, however, was understood to regularly by-pass such knowledge.

And you cannot come up with one solution for all the areas [a local NPWS officer] knows that, he knows the area, *he* should be the one who is making the decisions but he's not. They seem to be coming from head office but the local fellas [conservation rangers] often know the score and sometimes tell us as much (o-n:11).

Well we talked there to [a local NPWS officer] and I said to him they are going to pay us sweet money to put them sheep back on those hills in time, it will go that way, wait until you see. He has admitted that much himself, you know that too much grass on those hills is not a good thing either (o-n:15).

This potential problem of undergrazing and land abandonment was frequently raised in the course of both case studies. A NPWS conservation ranger, interviewed in relation to the hen harrier controversy, insisted that keeping adequate 'ties' between locals and the land could eventually pose one of the greatest challenges for the NPWS in the long-term. The relationships, skills and sensitivities that developed through emplaced practices with nature over time, it was suggested, would be much harder to 'reintroduce' than any particular species of flora and fauna. He spoke in particular about the traditional farming 'grá' or love for the land and willingness to work with it and learn from it. There was a general perception that these knowledges, sensitivities and relationships were being lost forever as the next generation turned their backs on farming as a livelihood:

and like once those people are gone it might be impossible to bring that back, that relationship they had and all that they know. I mean how would you reintroduce that grá; that feel for the land? It would probably be easier to reintroduce some species than it would those people and their ways. Actually I don't see how it can be done. And then what would we do? So we need to work at keeping a certain number still farming these areas and that's sometimes almost forgotten (hh:19).

When it comes to perceptions of 'truth' in relation to environmental knowledge, the issue of 'trust' is highly significant (Wynne, 1996). Local farmers felt that the NPWS and environmental experts in general could not be trusted to present the facts correctly. Whether through incompetence (a perception based on questionable expert advice received in the past), arrogance (including a tendency to favour 'the book' over 'real life' experiences) or an ecological extremism (including a tendency to prioritise species and habitats over that of local cultures and communities), it was widely felt that ecological experts were untrustworthy.

Visser et al's (2006) study into turlough management in Natura 2000 supports the need to bridge the gap between lay and expert knowledges of nature. He explains how conflicting viewpoints held by farmers and conservationists are often the result of 'misunderstanding' due to each party ignoring the other party's expertise (Visser et al, 2006:10). He suggests that:

Reliable expertise on turlough management should therefore be sought among the farmers who actively use it. Although this principle seems natural, it is rarely practiced in agri-environmental policy (Visser et al, 2006:10, see also Dunford and Feehan, 2001).

The Eurosite report on Natura 2000 conflicts across the EU (see Chapter 7) confirms that little value has been placed on local knowledge of habitats or their social and economic contexts. This can lead to misunderstandings, for example, in terms of how human activities are being carried out and the effect they are having on the places in

question. This can lead to ineffective decision-making and unnecessary restrictions (Parc Interregional du Marais Poitevin, 2003:8-11).

Resistance through a rejection of expert place-making assumptions

Locals also resisted 'place as habitat' through a rejection of expert place-making assumptions. These included assumptions regarding place boundaries, belongingness, authenticity, access and entitlements and the appropriateness or otherwise of in or out-of-place behaviours. Expert assumptions underpinning these highly sensitive notions were continually refuted in favour of local assumptions in this respect. Before looking more closely at the latter, I will briefly consider some dimensions of the former.

Ecological experts tend to discuss and present site boundaries as unambiguously natural phenomena. The image alluded to is one of naturally occurring habitats presenting themselves to us with demarcation points that only need to be noted, mapped and observed. Chapters 6 and 7 have shown, however, how the laborious process of devising these boundary lines is as much a social process of negotiation, entailing a complexity of procedural, legal, and socio-cultural factors, but this is rarely openly discussed - at least not with those located outside the boundaries of conservationist circles. While these factors may well be debated among and between epistemic communities, many of whom are, as Takacs (1996) shows fully cognisant of the values, subjectivities and uncertainties inherent in ecological knowledge, the perceived need to protect the credibility of ecological science and thus maintain its boundaries from other, non-scientific phenomena results in a tendency to expunge these factors from public presentations of the 'purified' habitat.

Official presentations of these places also centre on portraying their natural authenticity. Protecting these last remaining authentic places (or returning them to an authentically natural state of 'integrity') is of paramount importance. The inherent belongingness of protected species within these places is very much a part of this authenticity and is also portrayed as a naturally occurring phenomenon. The red grouse, various 'native' wild flowers and rare mosses (such as bog orchids and shining sickle moss for example) are all depicted as having legitimate entitlements to the places in which they are found. These entitlements are the result of their longstanding belongingness and relative rarity - entitlements legally bolstered by their annexed status under Natura 2000. Species access to certain land areas, it is argued, needs to be ensured or protected over and above that of other entities which may be both human and non-human and are sometimes considered 'stressors' or 'aliens'. Ensuring this often requires curtailing the access and indeed the entitlements of other people and animals who also currently dwell there.

Assumptions regarding what a place means also entail assumptions regarding the kinds of behaviours or practices deemed appropriate or not in that particular place (Cheng et al, 2003). Once everyday practices of heath burning, or bog cutting are no longer considered appropriate in areas of authentic blanket bog habitat. They are increasingly portrayed as 'out of place' as is the planting of trees or the construction of windfarms 'out of place' in hen harrier habitats. Out of place developments and deviant behaviours, as we will see later, are not limited to humans.

Local place assumptions and experiences of place

These official place-making assumptions were continually questioned by local people who regularly put forward their own assumptions in this respect. Boundaries were frequently presented in terms of land ownership or on the grounds of traditional access and entitlements. Many continually referred to older, usually informal, boundaries as having greater legitimacy than more recent, administrative and scientifically-devised ones. Locals gave directions in terms of popular landmarks from well known farms and pubs to particular sets of trees, rocks, gates, fences, embankments or remnants of the past (from lazy beds to haggard boundaries). Place beginnings and endings were often discussed in terms of parishes or townlands, often connected by traditional rights of way or old walkways. Farms were delineated in terms of 'inside' and 'outside' land, streams, rivers and all manner of hybrid landmarks, produced by humans and non-humans in 'an unfolding of a field of relations that crosscuts the boundary between human and non-human' (Ingold, 1995:504). As one farmer put it:

That's all my land there, right back to the river, you see over there, there's a mass rock¹, kestrels nest around it, and then up beyond that way to that line of trees over there (o-n:07).

Just as the rock and the area gathered around it was no doubt modified over time by the comings and goings of worshipers - and in later times perhaps historians, tourists, birdwatchers and so on, it was of course and continues to be modified by 'nature', not least the birds who currently dwell there. As I walked around it I noticed the weeds sprouting around it and touched the mosses that clung to it (making a home for the

¹ Stones used in mid-seventeenth century Ireland as a location for Catholic worship which was banned in Ireland during the period of Penal Law. Attending these clandestine masses was thus an act of political resistance.

insects feasting within) and I tried to imagine this tiny 'hybrid' place in terms of Ingold's b-series of time where the past and future are co-present with the present (see Chapter 3). What over time has been a sacred place, a political place, an ecological place and perhaps even a mundane place remains to some extent all of those things, embedded as these meanings are in the materiality of the place and in the memories of the people.

Although local people did not articulate notions of boundaries between nature-society, they did frequently reflect on place meanings, and spoke frequently of boundaries in this context. Discussions on place and place boundaries, moreover, inevitably led to discussions regarding local perceptions and experiences of belongingness, access, entitlements and the appropriateness or not of certain in- and out-of-place behaviours.

Where most of those interviewed in the Stacks Mullaghereirks discussed boundaries primarily in terms of private property, the significance of commonly held land in the Owenduff Nephin Complex meant that the notion of belongingness was sometimes inverted. Here, people frequently described themselves as belonging to the land, rather than the land belonging to them ('he's given his life to that land and his father and grandfather before him' (o-n:13b)). This sense of belongingness was based on generations interacting with the place and its nature.

As discussed earlier in relation to the 'bands' system, communal ownership of the commonages in the past did not equal 'open access'. There were well-defined and

communally enforced relationships of entitlement, if the extent to which these were fully effective in maintaining a fair system is difficult to ascertain.

The currently restricted access and entitlements to the bog of locals for the purpose of turf-cutting emerged as a particular bone of contention. While the sausage machine (a mechanical bog cutting device) is no longer permitted, cutting turf for personal use is still allowed in some parts (i.e. from existing banks). At the time of writing, negotiations to curtail this are underway. There are fears that in time turf cutting in any shape or form will not be permitted.

Some people admitted knowing of those still using sausage machines in small areas and that some manual turf cutting continues in non-permitted areas. Gieryn suggests that 'to engage in "out of place" practices is also a form of resistance (de Certeau 1984, Pile & Keith 1997) against forces imposing a territorialized normative order (Cresswell 1996)' (Gieryn, 2000: 480). Resistance may involve highly symbolic, demonstrative behaviours (the shooting of hen harriers, or the burning or blockading of land) - flagrant infringements of the rules of the game. A more subtle form of resistance can involve the continuation of mundane, day-to-day traditional people-place interactions such as turf cutting or sheep grazing in designated areas. Of course, those who engage in these latter practices are likely to consider them anything *but* 'out-of-place'. Indeed they are very much *of the place* as it is interpreted locally. These actions represent an unwillingness to conform to new place meanings.

In defence of these practices many expressed a view that they belonged to the area in question, that their emplaced practices with nature over generations were a part of the place as well as being a part of who they were. Their traditional entitlements to this natural resource were legitimised, in other words, by their belongingness to (as well as their communal ownership of) the place in question. While most equally acknowledged the belongingness of other forms of non-human nature, there was an obvious sense of resentment that the entitlements of certain (i.e. 'annexed') forms of wildlife appeared to take precedence over their own.

The process of displacement, interestingly, was not only limited to humans. Certain animals have equally found themselves subject to new boundaries wherein their belongingness is called into question. Trespass of livestock into the recently established Ballycroy National Park, for example, is a major issue. In its management plan for the area the NPWS state that:

NPWS will work with livestock owners to ensure that all *trespassing stocks* are removed from the National Park [and will] strive to inform livestock owners through meetings, notices and the media that trespassing animals must be removed (NPWS, 2005:38, emphasis added).

The Park (over 11,000 hectares of atlantic blanket bog, principally managed for nature conservation purposes by the NPWS) is not a unitary land-mass in the common sense of a park. Cutting through several areas, for instance, are large sections of commonage. This, along with the fact that most of the park borders are unfenced for ecological reasons makes management of the area particularly complicated as 'illegitimate' livestock tend to wander in to graze in areas hitherto partly accessible to them. These 'out of place' deviant sheep are thus regularly ousted from their old grazing haunts as

newly devised boundaries call their dwelling rights, or entitlements into question. While some animals have the good fortune to be translated into 'annexed species' worth conserving and thereby securing their access and entitlements to place, those translated into 'stock' (especially trespassing stock!) were clearly not so lucky. It could be argued that capitalism's penetration of farming has encouraged a perception of 'livestock' as less embedded in place than other forms of 'nature' (i.e. as commodities which can be easily moved from one locale to another).

Local experiences of place were also bound up with issues of access and entitlements. They contrasted descriptions of their own restricted access and entitlements to place with what they perceived as the unrestricted access and entitlements of NPWS staff and particular forms of wildlife. Some observed how NPWS vans roamed (or as some suggested, 'policed') the area and how their identities as conservation experts allowed them unlimited access to all (even the most remote) areas.

You see those Dúchas vans flying around everywhere, ever corner of the place, they basically want us out. They want to work on the place themselves and that's it (o-n: 08).

Non-entitlement to the privately-owned Owenduff river was a particular source of resentment, especially for those whose land it crosses:

That river flowing along there is the Owenduff, it's one of the best rivers in Ireland, beautiful to the world, but it's privately owned so it's no good to the local people. It's awful sad in a way. It would have been nice to have been able to fish from it, especially when the children were young. They'd have really benefited from it (o-n: 13a).

It was never handed over you see, when the Land Commission was handing the land over to the people. We can't fish out of it, not even with a licence even though it runs right through our land. From the bottom to the top, there's two rivers, one lodge here and one at the top all owned by the one crowd. They have

a bailiff going around now watching for people with fishing rods. They closely guard it. They let the lodge and fishing rods to tenants for a couple of thousand pounds a week (o-n: 13b).

The river, and entitlements to it, in other words, was felt to be 'reserved' for tourists - a point made all the more unpalatable by the fact that their own private land was frequently trampled on, and even abused, by those who had the entitlements that they did not:

Husband: I don't mind the walkers so much but the only people who'd annoy me now are the fishermen who'd come to the lodges. They would cross your land anywhere, just open the gate and walk through anywhere, it annoying (o-n: 10a).

Wife: and more so when we can't use the river ourselves (o-n: 10b).

Others made references to walkers assuming access to privately owned land while failing to respect local concerns and practices:

They'd climb your fences and that kind of thing, some leave gates open..... and I often find walking along by the river too, these anglers drop cigarette papers or you might find a whiskey bottle and you'd say to yourself we're being told to keep this place well for the tourist sake, and really it'd make you wonder (o-n: 13b).

These out-of-place behaviours (from the perspectives of the locals) were an on-going source of irritation. Perceptions of authentic, in-place, local behaviour were sometimes contrasted with that of newcomers to the area. The legitimacy and belongingness of this group were often dependent on their willingness to adapt to the nature of the place, understanding and accepting the cultural norms and behaviours perceived to be part and parcel of it. Not understanding these (frequently unspoken) 'rules of the game' could lead to engaging in 'out-of-place' behaviours, or expectations that these places should

change to suit the norms and values of newcomers and visitors. As one farmer explained:

Nothing against anyone like but some of those moving in from towns seem to expect the place to change to suit them. You'll get complaints about the smell of slurry and so on but sure what do they want? Look that's how it is here, it [spreading of slurry] has to be done you know, so like why come here at all so (o-n:14).

Local difficulties getting planning permission were also a bone of contention and while many attributed these to the site designations, many also seemed to feel that local planning restrictions were part of an overall plan to depopulate the area:

It's a dying community really. Young people can't get planning permission. A lot of people feel that down the road they are trying to ensure that there will be no farms around here at all. It seems to be all heading towards wildlife now, and tourism (o-n: 10a).

They want no people around here at all, except for those whores going around in Dúchas vans (o-n: 09).

It's part of an overall plan to get people out (o-n: 08).

And if everyone moves away, the area will be left just terrible, isolated completely, it will be just left for someone coming in fishing or whatever (o-n:13a).

This section has shown how local people questioned the line-drawing exercise between 'nature' and 'society' through their habitual experiences of engagement with the *place*. They did this by drawing on local stocks of emplaced knowledge and local assumptions and experiences of living in the place. Attempts by the NPWS to 'educate' local hill farmers about the 'species' and 'habitats' among them were destined to fail. There are at least two reasons for this: local people did not recognise these places as primarily

'habitats'; nor did they accept that 'science' was the only legitimate way of understanding them. They refused to accept the 'scientization' of their place.

The translation of place into habitat has encouraged a perception of 'displacement' among local people. Whether in relation to the river, the commonage, the bog or the townlands, issues of boundaries, belongingness, access and entitlements continually emerged as topics of concern. Destocking of the commonage, site designation and their accompanying restrictions, the development of the National Park, depopulation and the starving of funds regionally and locally are perceived as part of an overall process of people displacement. Whether for scientists, tourists, anglers, hill walkers, wildlife buffs, the red grouse or blanket bog, this part of North Mayo, it was felt, was 'zoned', 'reserved' or 'designated' for someone or something other than local people. As one person put it: 'they seem to have forgotten that we live here too'(o-n:14).

Section 8.3. Inter-community tensions and divides in both case studies

Up to this point, the focus in both case studies has been on conflict and resistance to Natura 2000 on the part of local communities. Their grievances have been presented as one voice. This section, by contrast, will consider some of the emergent conflicts, tensions and divides experienced among and between local people as the implications of Natura 2000 are unevenly felt and negotiated.

Rural communities are neither homogenous, nor politically cohesive (Brown, 2001 in press, Stoll-Kleeman et al, 2002). One important dimension of this is that people from the same, often small, communities embrace divergent (as well as many shared)

relationships and forms of interactions with 'nature'. Place meanings exist in these multiple and multi-facteted relationships; in both places, as a result, we have both divergent and shared place performances. There is clearly no *one* 'authentic' local vision for either place based on any pure notion of 'rootedness' or 'oneness' with nature but rather multiple visions based on diverse livelihoods (e.g. intensive or extensive farming, forestry, tourism) and cultural practices (such as walking, turf cutting and so on). An exploration of these intercommunity tensions and divides reveals the inadequacies of some idealised, romantic notions of 'authentic' dwelling based on one fixed vista of the place (Cloke et al, 2001; Watson, 2003).

The extent to which designation can entail direct and indirect *benefits* for local landholders and landusers is frequently under-acknowledged but is also highly controversial, in that some have clearly benefited more than others. Direct payments and reimbursements (under agri-environment and other schemes) can provide additional income for many farmers under pressure. But payment that is welcomed by some extensive or part-time farmers is considered an inadequate 'insult' to large-scale, more intensive farmers. As mentioned in Chapter 6, designation offers REPS farmers some additional income (as a supplementary measure), while non-REPS farmers are faced with the choice of either joining REPS and changing their farming practices (an unattractive option for more intensive farmers) or joining the alternative farm plan established by the NPWS. REPS farmers were thus frequently *less opposed* to designation with some even broadly supportive of it – although this, as I will explain later, was usually a negotiated support.

While the general perception of designation as a formidable threat to local livelihoods has been well articulated by the main farming organisations and well-documented by the media and in certain political fora, the contrary view (i.e. that some farming livelihoods can positively benefit from Natura 2000 designation) receives much less political or media attention. It tends to emerge only through interviews with locals and other key informants. Designation discourse in the public domain which frequently relies on the perspective of the main farming organisations obscures such contradictory viewpoints.

As farmers in the Stacks-Mullaghereirk region explained:

There's good money in REPS, there's certain things you have to do but it's about 80 euros an acre. 80 euros is not to be scoffed at. If your land is included in this SPA it is worth roughly about 20 euros extra, so its 100 euros per acre you'd get. The problem is you've plenty of fellas who are not in REPS and the 20 euro wouldn't mean much to them. Overall it's positive for me though, there's some additional money in it (hh:04).

Well, cutting rushes an' all we were worried and cutting peat for the house but now it seems that that won't be the case at all like. So I don't think I will be affected now. I wouldn't lose a night's sleep over it now, and like with the REPS we'll get a bit more from it like and that will help (hh:05).

This more positive view of designation as 'an additional earner' was also supported by a local Teagasc officer:

There were fears alright that the farmers in the areas would be limited in their farming practices but that was I think very much hyped too [...] And I would get plenty of phone calls from farmers living in the areas asking when is our area going to be designated a Special Protection Area because they are looking for the benefits to accrue to them on a per hectare basis (hh:20).

Unlike the REPS farmers (particularly those with no interest in forestry or windfarm diversification) who cautiously welcomed designation as an additional income/livelihood opportunity, farmers relying heavily on forestry or windfarm incomes perceived *their* livelihoods under as under threat. For these and other more intensive farmers, REPS payments were considered an 'insult' in that they went no way towards compensating them for loss of income.

The main source of intercommunity tension among sheep farmers in the Owenduff Nephin Complex also coincided with tensions between REPS and non-REPS farmers. In contrast to the Stacks-Mullaghereirk region, the relationship between these two groups in the Owenduff Nephin Complex was somewhat inverted: REPS farmers bitterly resented prior (and potential future) de-stocking payments made to non-REPS farmers, whom many REPS farmers felt had played a disproportionate role in creating (or at least not addressing) the problem to-date.

The 1998 destocking payments to non-REPS farmers were continuously raised as a bone of contention: 'We took the hit, we joined REPS and had to keep our numbers down, we made all the effort. Then these fellas who did nothing were compensated, they came out of it as good, if not better' (o-n:15).

During the fieldwork period for this research, negotiations (between the IFA and the relevant government departments) were underway regarding new de-stocking payments in relation to the 5 month blanket ban. Because no monetary figures had yet to be

agreed upon (for non-REPS or REPS farmers) and because compensation is calculated differently for either group, suspicions were high that one group might benefit over and above the other. Some of the non-REPS farmers interviewed in this study (who are now effectively forced to join one of the available plans) were reticent to comment on which farm plan they would opt for. Because non-REPS farmers appeared to 'striking a good deal', REPS farmers appeared agitated that their payments under REPS would leave them less well off than their neighbours.

Whereas NPWS officials found it hard to identify which farmers were causing the damage, the farmers interviewed in this study had no difficulty identifying 'the abusers' among them. One farmer commented that 'there are gangsters out there, and we all know who they are....there's this one fella, oh I know him well, he's a gangster, they paid him to get rid of that much and he then went and got that much more again, so there was no improvement on the mountain at all, and he's getting away with it.....sure he wouldn't join REPS, he's too cute'¹¹ (o-n:07).

Many farmers, however, felt the entire destocking issue had been handled unfairly, not only the REPS farmers (some non-REPS farmers were equally infuriated by the opportunists among them). Nor was it only those with commonage land who paid the price. As one non-REPS farmer with no commonage argued, 'because of these cowboys now I've to destock because my land is unfenced from the commonage' (o-n:12).

Because not all areas of commonage are equally damaged, the five-month blanket ban is particularly resented by those farming relatively undamaged areas of commonage.

Whether REPS or non-REPS, these farmers are incensed that the actions of others in other areas are impinging on their farming practices. As one farmer explained:

Myself and another fella have commonage and there's hardly anything eaten on it at all, the local wildlife man will tell you, and we're still hit by it you see, we'll still have to de-stock for the five months. Because of the actions of a few we'll all have to change our lifestyles (o-n:13a).

We are all being penalized now because of a few of them.....you see the people who have very little sheep now are also penalised and the people who have the greater lot are the ones who have done the damage (o-n:11).

Annoyance about a minority's abuse of 'the hill' was exacerbated by the fact that many of those allegedly abusing it were understood to have done so through an abuse of the destocking system. As one farmer explained 'for a few of them, the money they got for destocking, it was almost like a subsidy to rent more land and keep more sheep you know, they actually used it to buy more sheep'(o-n:07).

EU and state policy initiatives designed to increase production and these more recent policy initiatives (such as REPS) designed to rectify their deleterious 'side-effects' appear to have had a negative impact on pre-existing levels of social capital and in some cases have been a direct source of community tensions and frictions (Feehan, 1997). Divides between REPS and non-REPS farmers is the most recent expression of this.

A second local divide exists between those primarily farming and those to a greater or lesser extent engaged in tourism based livelihoods. Those involved either directly or

indirectly in the tourist industry held particularly ambiguous attitudes as differing aspects of designation were weighed up and negotiated. Some Owenduff Nephin locals, (especially some of those living in the Ballycrooy area), for example, were relatively positive about the National Park and hoped that the visitor centre would bring 'a boom' to the area.

The new park and the centre should hopefully attract a bit more interest in the place. There's more scope for tourism around here, it could be better promoted I'd say (o-n:16).

Hopefully like there'll be more work for those who wouldn't go into farming, so for some of the kids that might want to stay around here, eh the national park and all, it could even bring a kind of a boom to the area (o-n:13).

At the same time, suspicions remain:

The National Park is one of those things, some feel it might be a good thing but at the same time we've been 'had' before if you know what I mean, so it's sort of a wait and see thing..... and there's still suspicion like about what's at the back of all this (o-n: 02).

Tensions between farmers and walkers are particularly significant in this region and are bound up with an on-going 'battle' regarding access and entitlements to the commonages. A nation-wide organisation known as 'Keep Ireland Open' (KIO) was originally founded as a reaction to IFA-backed attempts to divide up or privatise the commonages in the 1980's (o-n:03). Local farmers at the time were fiercely divided on the issue. Although relations between farmers and KIO are usually described as 'fraught', relationships on the ground are less clear-cut. While some farmers appreciate the role KIO played in maintaining the commonage system (some farmers even act as guides in KIO affiliated walks and activities), others are bitterly opposed to what they see as the organisations 'confrontational' stance (demanding access to private land for hill walkers). A local involved in walking-based tourism suggests that farmers

are generally suspicious of walkers whose interests are perceived as akin to that of conservationists:

Oh there are tensions there alright and comments can be snide and nasty. I would be wary even setting up a tour guide company as such. Anyone into nature is akin to *Dúchas* which is a dirty word around here (o-n:17).

Aside from the issue of financial support, Natura 2000 can ironically benefit some aspects of the lives of many of those who are otherwise opposed to it. The designation of land for hen harriers, for example, may curtail the advance of unpopular local developments. Contrary to the view of forestry as the 'life-blood' of these place keeping people living in the area, many feel that forestry is actually 'pushing people out' (hh:01b) as highly afforested places become increasingly dark and dreary.

In our area it's getting very numerous now. It's kind of closing in on us, it makes the place very dark and drab so I think there's too much forestry now (hh:05).

In fairness to the harrier he might be the only one able to stop all this forestry. It's closing in on us around here. It makes the place awful dreary. Your quality of life is affected and people visiting the place are put off by it (hh:06).

For others, windfarms are a particular source of anguish. Many residents in areas of high windfarm concentration complain about the noise and visual impact associated with the turbines. A newspaper article comments that:

Many feel that 62 huge windmills in an area like Rockchapel will have a devastating effect on the rural community from an environmental, health, housing and employment aspect. The sound of the turbines was described by one resident as like an airplane which consistently hovers but never lands..... Residents are clearly concerned that the granting of an additional six windmills for Foiladaun, which lies adjacent to the 11 currently operating in Taurbeg, will bring nothing but more noise and devastation to the area (Herlihy, 2006).

Thus while it can be argued that windfarms and forestry offer 'some kind of a life' (Deputy Ferris, Joint Committee on the Environment and Local Government, 5 March 2003) for local people, others claim that these are the very issues destroying their quality of life and sense of place.

Because designation can act as an effective bulwark against contentious local developments (from windfarms and forestry to factories and landfills), among those more concerned with encroaching forestry and windfarm developments than hen harrier designations (especially since the relative appeasement of many other land-use concerns), designation could be described as 'reluctantly negotiated'. Equally, among those relying more on additional REPS payments than on the alternative land-use options of windfarming and forestry, designation is sometimes granted a degree of support. This negotiated support, however, appears to exist in conjunction with an underlying distrust, and an on-going cognitive resistance to the translation of place to habitat.

Negotiated 'support', in other words, is rarely articulated as such: many of those who are benefiting from designation (whether through direct payments or the indirect benefits of preventing contentious local developments) continue to express resistance to depictions of 'their places' as primarily 'habitats'. They also bitterly resent the manner in which the designations were carried out, i.e. in a top-down, non-participatory, and some would say 'draconian' and 'arrogant' manner. This emerged

as a single common source of resentment among all landholders interviewed in this study.

Conclusion

This Chapter has highlighted the impracticalities of managing and negotiating conceptual and geographic boundaries between 'nature' and 'society' in a particular locale. It has shown how standardised, 'placeless' solutions can be insensitive to emplaced phenomena from land-use patterns to community relationships. It has also shown how 'individualised' state-led policy prescriptions are inadequate (if not counter-productive) in the context of commonly held land. It has also revealed how 'everyday', situated relationships with places are drawn on as a form of resistance to 'unbundled' (Gieryn, 2000) scientific notions of places as habitats. In the Owenduff Nephin Complex, fundamental aspects of the line-drawing exercise remain contested as locals reject the 'scientization' of their place. This Chapter also drew on the findings of both case studies to reveal the inadequacies of romantic, idealised notions of harmonious rural dwelling. While there may be no *one* 'authentic' form of people-place interactions and relationships, there are (as we will see in Chapter 9) many shared place performances, binding communities together over time. While Natura 2000 is experienced and negotiated differently on-the-ground, a fundamental clash between 'place' and 'habitat' is never far from the surface. Taking an overview of both case studies, the following Chapter explores this clash in more detail.

¹ Colloquial term for mosquito-like insects.

² Colloquial term meaning 'shrewd' or 'crafty'.

Chapter 9: Places or Habitats?

Taking an overview of the two preceding case studies, this chapter draws inspiration from ANT and a dwelling perspective to explore Natura 2000 as a clash between ecological understandings of places as habitats and local experiences of these hybrid realities. Through considering some of the factors leading to the emergence of these ecologically valued places, section 1 underlines the hybridity and relationality of place, and in particular the significance of local situated practices with nature over time (Watson, 2003). In contrast to this, section 2 considers the translation processes whereby these places were constructed as habitats or scientific objects, stripped of their inherent relationality and hybridity. Section 3 discusses some of the people-place relationships that are ‘lost in translation’, relationships involving dynamic interactions between people, places and nature. It further considers how the translation of place under Natura 2000 entails the translation of people-place identities. The remainder of the chapter compares and contrasts the interpretative frames employed by local people and conservationists.

Section 9.1. Constructing Places

Chapter 4 considered the inherent hybridity and relationality of place. As ‘unwindable spirals’ (Gieryn, 2000) of materialities and meanings, the places considered in this study are thus the emergent effect of heterogeneous relationships between people and other entities interacting across spatial, temporal and cognitive boundaries. These places *exist in the relationships* between ‘nature’ and ‘society’ – relationships wherein

local people have played many significant roles. One way of exemplifying this point is to ask: how did these ecologically 'special' places come to be as they are today? What factors have combined to create these materialities that are so valued today for ecological purposes?

First, it must of course be recognised that the material attributes of both sites are in large part due to complex geological and biophysical forces and processes acting over millennia. Geologists, meteorologists and ecological historians could no doubt provide fascinating accounts of how rock formation, soil constitution and weather patterns converged over time to produce these unique, albeit ever-changing, 'spots in this universe' (Gieryn, 2000). Notwithstanding this fact, however, human influence has played a significant co-constitutive part in these trajectories.

A dialectic understanding of nature-society (that both exist in a dynamic, mutually constitutive, two-way relationship) suggests that both case study sites are essentially social-natural hybrids. They might equally be described as 'cultural landscapes':

Cultural landscapes are socio-natural hybrids par excellence and cannot be meaningfully studied from an exclusively naturalist or culturalist perspective. Rather what we are dealing with is a co-evolutionary relationship. That is to say what impacts on the natural has repercussions for the social and vice versa. (O'Rourke, 2005:69).

The above was taken from a study of the 'entwined nature-culture relationship' of the Burren's cultural landscape. The unique landscapes of the Owenduff Nephin Complex and indeed the Stacks Mullaghereirk are equally influenced by past and present human-nature relationships. Changing farming practices, population movements and so on,

have all had and continue to have an important impact on local landscapes and ecologies - and vice versa. As with the Burren, therefore, such landscapes are 'as much a product of the hand of [their] agrarian craftsmen and women as [they are] due to a combination of environmental factors' (O'Rourke, 2003).

The material make-up of the Owenduff Nephin complex was undoubtedly affected by centuries upon centuries of locally emplaced practices with 'nature'. Its 'taskscape' (Ingold, 1993) bears witness to the lives, habits and experiences of those (both human and non-human) who have dwelled there down the ages. The remnants of past human-nature interactions are dotted everywhere. From booley huts and lazy beds to embankments, weirs and stepping stones, we find constant echos of former agricultural, fishing and other livelihood practices. Even the highly prized peatlands, once extensive areas of Scots pine forest providing a source of local fuel, now house the memories and meanings (and no doubt secrets) of the past in layer upon layer of interwoven materialities and meanings.

Of course humans are not, as Sprin puts it, 'the sole authors of the landscape (1998:17) in Cloke et al, 2001:653). The precarious pathways of the old Bangor trail (an ancient cattle drove from Newport to Bangor) were pounded out and moulded by the feet and hooves of people, cattle, donkeys and sheep all treading their way back and forth down the ages (with further additions from bicycles, trailers, tools and machinery over time). Overflowing riverbanks would have added silt and gravel, modifying boundaries from time to time. Occasional heavy winds would have disturbed trees providing animal

shelters or bird nests. Alternatives would have had to be built or found. All manner of creatures from otters to invertebrates have endlessly adapted these places in an attempt to carve out their own temporary dwelling places.

The controversial commonage was also partly constructed by human-nature interactions. Many of those interviewed in this research made reference to earlier, less intensive, farming practices many of which pre-date Ireland's membership of the EU (then EEC), with many dating back to British rule and some indeed to the Famine. The old 'bands system' of managing the commonage (see Chapters 6 and 8) was frequently discussed. This self-regulated system for managing cattle, and subsequently sheep numbers on the commonages undoubtedly played a part in making the local landscape what it is today. Some of these informal, self-regulated systems survived until relatively recently. A local hill farmer described how communal decisions were made in respect of specific local conditions:

and so what we used to do, all the people around here we'd winter our sheep in what's now the SAC areas and in the summer put them in these non SAC areas up here, that was a good system. That's the system that the landlords and a load of people were using around here. It gave the hills a chance to grow in summer time and these hills up here had a chance to get green again in winter time, that's the way it worked. But when the designations came in that had to stop, straight away that had to stop (o-n:11).

Equally, in the Stacks Mullaghereirk region the particular mosaic of young conifer plantations and open moorland (rough grasslands, blanket bog) considered ideal hen harrier habitat is undoubtedly the result of more than just the hand of 'nature'. As in the Owenduff Nephin Complex, it is in large part the often accidental by-product of many years of overlapping land-management practices. Deliberate drainage of wetlands

so as to 'reclaim' or 'improve' them for agricultural purposes, along with the particular practices of animal grazing, heath burning, tree planting and so on have all left their marks on the places in question *and* influenced future trajectories of social-ecological change.

The practice of controlled burning was raised in both case studies as a practice which undoubtedly played a part in shaping the present-day landscapes and ecologies:

My father and uncles used to burn the spots of heather up beyond. They knew what they were doing though, they'd time it in relation to the weather so it wouldn't get out of control. It would encourage fresh growth and all (hh:02).

I remember as a child eh the old men would be up in the hills in the month of March burning heather. They'd have no radio but they understood the weather. They'd listen to the river you see [inaudible] and they wouldn't set fire to the spot of heather until they heard the rain coming and it would burn five or six acres and then the rain would quench it off. They burnt it in rotation for years (o-n:14).

Although 'burning areas of vegetation' is listed as a 'notifiable action' within the Owenduff Nephin SPA, it remains a somewhat controversial topic in conservation circles. Even among the NPWS officials I spoke to, positions on the practice varied considerably: some privately admitted that controlled burning *was* a practice beneficial to specific nature conservation goals but there was a fear that permitting burning of any sort might be catastrophic to *other* nature conservation goals. Whether for good or for bad, however, controlled burning has played a part in shaping the materialities of both places:

Controlled heathland burning shaped the Atlantic landscape over centuries. Woodlands developed slowly into open grassy areas. After ages of burning by farmers, species of plants and animals got adjusted to or even became dependent on regular heathland burning (9th European heathlands workshop, 2005).

Clearly however, the material or biophysical attributes of both places are not only the product of *local* interactions with nature. From the effects of EU productionist agricultural policies, such as massive overgrazing of the Owenduff Nephin complex in the 80s and 90s, to the more recent mass erection of fences under REPS, the ecological conditions of these landscapes are continually modified from both near and afar.

Like the overgrazing of sheep in the Owenduff Nephin complex, the extensive degree of conifer plantations in the Stacks Mullaghereirks was largely made feasible and desirable by EU policies designed to pursue those particular land-use options in the 80s and 90s. During this period, highly lucrative incentives to plant 'exotic' coniferous plantations were offered to those owning these relatively poor-quality agricultural lands deemed 'good for nothing other than forestry' (hh:11). Over-planting and over-grazing in these areas are now major obstacles to conserving or restoring these places to their currently desired ecological state, i.e. as hen harrier and blanket bog habitats.

Both places are thus sites of overlapping and highly distributed flows, forces, processes and networks (Watson, 2003, see Chapter 4). Market forces and networks, it might be argued, have a particular salience, and increasingly so in our current era of heightened economic globalisation. It was the existence of markets for lamb and timber as commodities that underpinned the productivist EU policies. Changes in the type of livestock kept i.e. from wether sheep to ewes (also held responsible for ecological changes in the Owenduff Nephin complex) were also made in line with market forces:

They changed from wether sheep to ewes. Wethers were hardier and better suited to the damp weather conditions of the area. It's because of the headage. The headage was on ewes and breeding lamb whereas the wethers were for mutton. There was a market for mutton at one time but then people's palates

changed, people don't want mutton anymore. It's a hardier sheep, but because that was a hardier sheep, it would travel further and wouldn't graze just adjacent to the greenland. Because of that and the numbers kept there'd have been less overgrazing with the wethers (o-n:01).

Both sites, in other words, were (and still are) continually affected by flows, practices and interactions from further afield. Changing demands, ideas, visions and assessments of 'land value' from afar have thus played a part in moulding the local landscapes and ecologies. Nevertheless, locally situated, habitual land-use practices and interactions are undoubtedly highly significant to the emergent materiality of these places. Local people, in a sense, have historically *co-constructed* these places and continue to do so, both materially - and as we will see later cognitively.

Section 9.2. Constructing Habitats

Through the process of translation from place to habitat, the Natura 2000 project effectively strips these places of their inherent relationality and hybridity. To qualify as designated or candidate habitats and species under Natura 2000, the messy, situated realities of the Owenduff Nephin Complex had to be successfully translated into standardised, coherent ecological texts, complete with descriptive accounts, maps, charts and statistics.

As Latour (1987) Watson (2003) and Clark and Murdoch (1997) have suggested, the first steps in this translation emerged from intimate, embodied encounters with the places and emplaced natures in question. Taxonomic studies of the Owenduff Nephin complex, for instance, date back to Maxwell's hunting logs in the 1800's (o-n: 05). These carefully recorded journals, (detailing all manner of local flora and fauna)

emerged from direct engagement with the specificities of the place and played a considerable part in igniting a more widespread interest in the ecology of this and other similar places; they are still frequently drawn on by local ecological experts (o-n: 05). These and other notes and sketches, including Griffith's 1300 day bog survey between 1809-13 and Robert Lloyd Praeger's famous studies of bog vegetation and ecology published in *Irish Topographical Botany* in 1901 (Foss and O'Connell, 1997:188) represent some of the first translations of the place and its nature.

These early 'trace gathering' translations were embodied experiences *in situ* wherein any real sense of mastery over the place had yet to be established. Faced with the vastness and complexity of such relatively unknown nature in relatively unknown places, the 'balance of forces' is weighed against the 'fumbblings' of early explorers, ecologists or natural historians (Latour, 1995 cited in Waterton, 2002:183).

Each subsequent translation, in the form of a new study or survey drew considerably on the work of earlier studies. Knowledge was slowly established through a 'cycle of accumulation' as directly observed data were viewed and reviewed through the lens of other studies, other concepts and other ideas, often emanating from other places:

Two German botanists J. Braun-Blanquet and Reinhold Tuxen, described Irish bog vegetation and categorized it on floristic criteria in 'Irische Pflanzengesellschaften' (1952). They had a significant influence on several Irish botanists who adopted their scheme, including John J. Moore, who subsequently established the School of Vegetation Science at University College Dublin. Further work refining the earlier classifications of Braun-Blanquet and Tuxen was published by Moore in 'A Classification of the Bogs and Wet Heaths of Northern Europe' (1968) and his influence as a teacher at UCD stimulated a steady stream of research on Irish bogs (Foss and O'Connell, 1997: 189).

Just as Latour's discussion of early explorers in the East Pacific suggests that 'they were not so much interested in this place but interested in bringing this place *back* to their ship' (Latour, 1987:217), these early ecological explorers approached such emplaced phenomena in a similar respect. Every 'trace' of interest to the ecologist had to be noted, coded and translated *for* the journey and *for* its eventual audience.

Since then there have, of course, been several other ecological studies of the area all of which have played a part in building an influential ecological narrative. Bog Conservation Week in 1982, in particular, was a pivotal moment in the history of Irish bog protection as a number of experts formed the National Peatlands Conservation Committee (today known as Council). Its priority was to publish a list of conservation-worthy peatlands in Ireland (O'Connell, 1987). Over time, then, as interest grew in these and other similar places (blanket bogs, both in Ireland and abroad) international attempts to protect or conserve them demanded some kind of common system of classification.

The mobilisation and accumulation of traces from the Owenduff Nephin Complex and many similar places eventually converged in 'centres of accumulation' where these discrete traces of knowledge are revised, fine-tuned, combined, merged and blended. Such centres can 'dominate spatially as well as chronologically the periphery' (Latour, 1987: 232). From these less constrained vantage points, orders of time and space are more easily 'reshuffled' (Latour, 1987:232). Features deemed irrelevant can be surpassed or ignored as those of particular interest take centre stage. At this point and

in *these* places, in other words, the 'balance of forces' has shifted. Peripheral places once daunting and unknown become stable, knowable and even malleable. And when place as habitat is translated into the powerful format of a map, new boundaries can be envisaged, additions can be negotiated, features can be emphasized, reduced or even removed. In his paper 'The "Pedofil" of Boa Vista: A Photo-Philosophical Montage' (1995), Latour contrasts this distantiated sense of mastery with earlier more tentative field observations in situ. As Waterton summarises, he contrasts two images:

[O]ne of scientists fumbling and hesitating on the edge of the Boa Vista forest, looking small and vulnerable in contrast to the 'green hell' that surrounds them; he contrasts this with a subsequent photograph showing four scientists bent over two maps on a table, pointing to elements on the maps at their ease. He suggests that in this photograph, in contrast to the first image, the scientists' gaze dominates [the] two maps of the landscape in which they find themselves immersed (Waterton, 2002:183, drawing on Latour, 1995).

Armed with ever increasing quantities of 'stable, mobile and combinable' data, each successive step in the translation process increasingly focused on making these accumulated narratives compatible with more dispersed institutional circuits of knowledge. Under the auspices of EU knowledge building initiatives, networks of epistemic communities across Europe continually provided increasingly systematic and reductionist accounts of such places - accounts which were eventually incorporated into the CORINE biotopes project and re-appeared later when further translated as 'species lists and habitat descriptions' under Natura 2000 Directives (see Chapter 2).

Once Natura 2000 conservation aims and targets are established at European level, local level implementation of the network requires that these meanings undergo a reverse process of translation as they quite literally 'travel back home'. On its journey

back to the specific, the Owenduff Nephin ecological narrative as 'habitat' was inevitably negotiated and modified each step of the way by networks of nature conservation policy-makers and practitioners in national, regional and local contexts. While essentially in the hands of policy-making, administrative experts and professionals, however, the narrative remained (and continues to remain) ostensibly science-based. The NPWS's 'site synopsis' is the end product of this translation process: scientific place meanings are encapsulated in two paged summary document (see NPWS on-line).

Given the less convoluted procedure for designating SPAs, the translation of the Stacks Mullaghereirk landscape into 'ideal hen harrier habitat' entailed considerably less 'travel' (see Chapter 6). Nonetheless, translations of this and other 'indicative areas' (see Chapter 7) converged in NPWS as well as conservationist NGO boardrooms where their relative importance for hen harriers was weighed and assessed. As shown in Chapter 7, the boundaries between 'science' and 'non-science' were drawn and re-drawn until a politically acceptable 'science' was established (Gieryn, 1999, see Chapter 4).

Just as science seeks to transcend the confines of place, Natura 2000's abstract, scientific place narratives disembled these places from their inherent relationality (Watson, 2003). It is only through divorcing themselves from their original contexts that these 'unbundled', one-dimensional and somewhat static (Ledoux et al, 2003)

place-meanings gain power and credibility in epistemological and policy-making networks.

Translation, however, is not only a scientific phenomenon: it is a feature of all standardised policy-making, as I will discuss further in Chapter 10. As outlined in Chapter 2, Natura 2000 is part of a broader process of reinventing the countryside as part of the reform of the EU's Common Agricultural Policy. During *both* eras of place-making (i.e. CAP and CAP reform), these places were narrowly translated, respectively as zones of production *or* as zones of ecological conservation and consumption. In both cases, however, a wealth of other, locally produced place meanings and relationships were overlooked. As a predominant focus on the productive or economic values of these places shifted to a predominant focus on their biophysical values in the corridors of power, people on-the-ground were expected to re-envision and modify their people-place relationships and identities accordingly.

This expectation belies the fact that people value and relate to places in multi-faceted, ambiguous and often immeasurable ways (Cheng et al. 2003). People-place relationships are not easily reconfigured from afar. The translation of 'place' to 'habitat' also entails the translation of these people-place and people-nature *relationships*, which in turn can have implications for socio-cultural identities. Latour argues that 'the gain does not always offset the losses that are entailed by the translation of one form into another' (Latour, 1987: 236).

Section 9.3. Lost in Translation

Relationships with place

Unlike Natura 2000's ecological narratives that are to varying degrees resented and resisted, locally emergent place meanings retain much greater local legitimacy.

Although relationships with places are diverse and therefore often subject to contestation (as shown in chapter 8), there are also many shared place performances.

In one sense or another, almost all the locals included in this study told accounts of 'how the land was won'. Many described the arduous task of reclaiming land back from nature or the acquisition of land through community and family feuds. These narratives were often animated and emotional accounts of how generations of families struggled to make a living on poor quality, marginal lands. Given the painstaking physical effort involved, it is not surprising that there was a huge sense of achievement associated with 'land improvement'. Personal identities seemed to be partly interwoven with these intimate, challenging and sometimes triumphant encounters with 'the land'.

I split them hands down the middle [looking down at his hands] we had nothing then, anyone would tell you. I was 12 years old when I started draining it. I lifted every rock and turned every sod of it. You might be thinking this is a mighty farm, the best of land but that's not God made land let me tell you, that's Brendan made land so it is (o-n: 07).

These accounts were frequently interwoven with familial and community relationships.

When speaking about their relationships with the land, farmers frequently made

reference to their relationships with people - and particularly their fathers. Shared experiences with the land, it seemed, were often central to these relationships:

That's all reclaimed land down there, myself and my father we raked every bit of that land down there, we drained every bit of it with two shovels and a hack and levelled it..... Ah it was hard, hard work but they were good times too, we'd be up before sunrise, out there with the flasks you know (hh:02)

It was not only land reclamation that evoked such memories. Other practices, such as the shepherding of sheep or turf cutting were equally bound up with recollections of family and community ties and bonds:

I used to go with my father to the hills, you can see them from here. I know those hills inside out, we'd go in the morning by foot, bring a dog or two and some lunch and we'd be gone all day. We'd gather the sheep and there might be more people up there gathering sheep on the same day so we'd gather a couple of hundred sheep into a place and then you'd have to try to part your own and bring them home, it'd be dark at night when coming home. It'd be tough but enjoyable, we'd have the crack as well. I was only 11 when he died but I can still see him up there (o-n:13a).

People used to light small fires on the bog then, we even used to boil eggs on the fire, three or four families would share a fire. It was lovely. Neighbours would get together you see as we all had to get turf out of the bog (o-n:10b).

In many homes that were almost completely self-sufficient just a generation ago, land and livestock were described as fundamental to their daily lives:

...then of course I had to sell a flock of sheep to get married (o-n:08)

There was no electricity then, you had to cut turf to be able to boil the kettle in the morning, people depended on it (hh:04)

a lot of people around here had roughly the same amount of sheep, we depended a lot on them to survive (o-n:09).

Whether people spoke of areas of commonage, green land, particular meadows or tracks of bog, the places they discussed were frequently bound up with memories of

childhood and feelings of security, community and continuity.

As one farmer's wife said, 'our youngest daughter would love to come back, to live here and get work, all our children are like that, oh they love home, we've all had very happy childhoods here and we have great memories'; and later in the interview, 'it would be very sad if our son wanted to live around here and couldn't get planning because he has given his life to this place as has his father and grandparents and so on' (o-n:13b).

Many farmers expressed an intimate, romantic attachment to their land. The land was frequently personified:

The relationship with me and my farm is the very same as if I had a wife and was married [...] I could go down on my knees on a bright morning at 6 o'clock and kiss that ground because I worked with that. I turned every sod of that when I had nothing, now I'm a wealthy man. I owe a debt to the land for helping me out so much (o-n:07).

Ah we had a different view to the land in those days, we were nearly talking to it, and a lot of the work was by hand with a spade (hh:05).

In other cases it was valued for its beauty and the aesthetic or sensual pleasure derived from interaction with it:

When I was a lad I loved it up there, oh I thought the hills were beautiful and the valleys and the steams up in the hills there, there's spring water coming out of the rocks, it's beautiful to the world (o-n:13a).

A number of farmers from both case studies enjoyed hill walking as a pastime. Two particularly production orientated hill farmers in the Owenduff Nephin Complex discussed their close ties with a local walking festival in the area (one of them acting as

a guide for those walking 'the Bangor trail'). Another farmer, this time a less production-orientated, part-time, REPS farmer in the Stacks Mullaghareirk region, spoke of his role of as Chairman of the Mullaghareirk mountain trails. When asked what they enjoyed about the experience, all made reference to the changing seasonal landscapes, the observation of wildlife, as well as the social outlet.

Love for the land was often expressed with great emotional intensity:

I wouldn't leave it for anything, I'll have to be carried out (hh:01).

I wouldn't rest in the grave if I thought it was ill treated (o-n:07).

If I though the land would be sold after I'm gone I'd die sooner (o-n:08).

Many others, however, also expressed meanings which were much more materialistic. At some stage in the interview, most discussed land primarily as 'property', as 'security' or a form of 'income'. Reasons for land-use diversification in the Stacks Mullaghareirks, for example, were continually bound up with livelihood concerns. Some claimed that forestry 'puts a floor on the value of your land' (especially poor quality farming land) and that in removing this option, the land is automatically devalued. It was further argued that this would negatively affect borrowing potential on the strength of land value. Irrespective of whether or not they ever intended pursuing forestry, farmers frequently requested forestry assessment companies to value their lands for afforestation and information in this respect was apparently accepted by lending institutions as collateral.

The area of land surrendered to forestry or windfarming was sometimes described as a 'pension' (hh:1a) or as 'a college fund for the kids' (hh:11). Others were more concerned about the loss of future land-use options:

If the designations come in here, I'll no longer have the option of going into forestry like, down the line say. That was always a fall-back. So I'd worry a bit now (hh:02).

Younger farmers, in particular, discussed their land primarily in productivist terms:

It's not productive land, it would be a lot better if it could be drained, you wouldn't be allowed to do that now. It hasn't been drained since the landlords' time, the water is running right down from the top of the hill to the bottom and there's no drains to catch it. You see where sheep are getting lost in holes, we'd dry out those spots if we could (o-n:09).

And yet even this more production orientated farmer, later in the interview, revealed a more intimate and philosophical dimension to this relationship with the place:

We'll probably have no-one to hand our land on to, but I'd like to see the commonage left as it is as was, to see the tradition carried on. I suppose I'd like to think someone's son or daughter would have a couple of sheep up there and people would still go up and cut a bit of bog and walk the area, and spend time up there (o-n:09).

Other accounts of 'how the land was won' were more cultural or political in essence.

Numerous references were made to the historical struggle of reclaiming land from the hands of British landlords.

Many people spoke of the landlord era with unbridled bitterness and resentment.

In recounting stories of incidents occurring from before they were born, locals drew heavily on 'collective memories' of place and people-place encounters (Urry, 1995).

Well-known local stories of the hardships endured at the lands of particular landlords seem to be passed from generation to generation and continue to evoke intense feelings. A hill farmer in the Owenduff Nephin Complex recounted a story of local hardship at the hands of one landlord, a story that appears to have a particular local resonance (variations of it were told by several others).

This man's grandfather was fined 1 and 6 pence for his donkey grazing on the hillside. His family were cutting turf on the bogs on the hills and the usual thing was for the donkeys to graze while the people were eating. But the landlord came along and said "your donkey is grazing you have only turbury rights here you don't have grazing rights". The man was prosecuted and he was fined 1 and 6 pence which would have been a lot of money back then. So then when we got our independence and each one got their share of lowlands and the won grazing rights on the commonage, this man gathered his family around the table and said the rosary and thanksgiving. I've never forgotten it he [the grandson] said to me and I don't want this generation to be the cause of the system reverting back to what would be a worse scenario than in the landlords' time (o-n:03).

Echoing a 'fortress conservationist' or 'fences and fines' narrative, parallels were continually drawn between conservationism and colonialism (see Chapter 2). Several people referred to the NPWS as 'modern day landlords':

Sure those crowd are no better than the landlords, they want us off the land and that's it (hh:08).

This is the land our forefathers fought for, and for what? Are we to be evicted now for the birds and the tourists? (o-n:10a).

They want those hills for themselves you see, we're an inconvenience now..... but its not the first time we've had to fight for them (o-n:09)

Whether 'reclaimed' from nature, from the hands of British landlords or locally powerful interests, the places that people spoke of in this research were, in one way or

another, 'hard won'. Relationships with places involve relationships with 'emplaced nature' and relationships with people – relationships that are necessarily interwoven and impossible to disentangle. These places were thus valued for all manner of purposes and interactions from the practical and instrumental to the intangible and tacit. The translated accounts of these places as 'habitats' discount these local meanings: they are effectively 'lost in translation'.

Relationships with nature

Conservationists wish to convince local people to care more about 'nature'. The findings of this study suggest that while local people do care about nature, the nature they care about is often a different nature from that of nature conservation experts. Whether or not it was the original aim of the network, Natura 2000 appears to prioritize 'special', (i.e. scientifically-valued, 'annexed' nature) over 'ordinary' ('non-annexed') nature. It draws hierarchical boundaries between classes of nature and place. Ordinary sheep in the Owenduff Nephin Complex, for example, are ousted on behalf of species and habitats 'of Community interest' (but not always of *local* community interest). Local people, on the other hand, express greater concern for and interest in ordinary, familiar nature. In interviews for this research, interactions with nature based on familiar, mundane, day-to-day practices were frequently discussed and this 'everyday' nature was valued in compound and complex ways. Aside from their obvious economic value (as commodities), livestock were frequently discussed as 'a part of the place' and at times even as part of the family.

I've five hundred sheep and they are all lambing. [...] Ah sure they're like my children. I'm up and down to them at night [inaudible] I never married. (o-n: 07)

We keep sucklers and so on, there's new born calves out there now. We've minimal income from it but we keep them more as (pause) well the children love it and I couldn't imagine not having them, they are as much a part of the place like. I grew up on a farm too so it's just normal. (hh:10a)

Observations of birds, foxes, otters to name but a few were also discussed as important and pleasurable aspect of everyday life:

Above in the bog there, there's a curlews nest and the grouses nest and they'd nest around the same spot year after year after year, the grouse would be in a bank of heather that's how he gets his name, his real name is [inaudible]– but the curlew I think has gone out there now, I've not seen one out there for many years now (hh:04).

Husband: We have foxes in our own backyard we feed them outside the backdoor (hh:1a)

Wife: Yes but there was a guy around recently shooting foxes at night and I haven't seen my friend come to the back door since. He'd even look in the window at you, he could see us watching him and he'd still eat the food! (hh:1b)

Husband: There is nothing better to see like there is a little otter down there by the river and to see him coming up and playing and hunting for fish, ah there is nothing better (hh:8a)

Wife: He [nodding at husband] takes all the children down to see it and he knows all the birds down there too. He's always trying to teach the children (hh:8b).

In contrast to this general interest in, and frequent concern for local, 'everyday' nature, few expressed any real interest in or sympathy for the hen harriers plight. Dislike for the hen harrier was sometimes linked to concerns for more familiar and well-loved nature. As one farmer said: 'he killed all the little songbirds beyond in the field, I hated him for that' (hh: 21). Other comments, often based on rumours about hen

harriers 'lifting off hens and turkeys' added to this depiction of the birds as cruel and sinister 'pests'.

Ironically and in contrast to conservationist depictions of the birds as 'vulnerable' or 'threatened', many locals described the birds as 'threatening' (to livestock, to local nature and to local livelihoods). Their threatening image was reinforced by the media: 'Hen harrier returns to haunt West Limerick' headlines one article (Feehily, 2005). The birds were often scape-goated as the underlying cause of other local concerns and anxieties. They were held accountable for planning permission refusals, irrespective of whether hen harrier protection was ever actually raised as an issue in the planning process: 'It wasn't spelt out but I've a feeling that that was what was behind it. They said it was the visual aspect was the problem but we feel it was the birds' (hh:01a).

But aside from these and other more broadly disparaging comments (describing the birds as 'dirty', 'pests' or 'scavengers' for example) the predominant attitude seemed to be one of general disinterest - possibly linked to the rarity of hen harrier sightings. In other words, it was not particularly loved but neither was it particularly resented. Resentment was directed *more* at the NPWS and the manner in which they were trying to protect the birds, than at the birds themselves. No interviewees condoned the shooting of hen harriers, although many admitted that they could appreciate the frustration behind such acts, seeing them as acts of desperation by people whose 'backs are against the wall'.

Some farmers, even some of those *vehemently opposed* to harrier designations (and actively campaigning against them) spoke with a surprising degree of respect for the birds. As one explained it, 'but there is no problem with the birds, we've lived with them for years before all this and sure they have to make their way here too, they do what they can to survive like ourselves you know, nobody wants to see the birds suffer or disappear' (hh:08).

One farmer described the birds' behaviour in a surprisingly animated and appreciative manner:

The male hunts for food while the female guards the nests, and I've seen them its interesting really because they seem to have some kind of high pitched method of communication, one calls the other [imitates a high pitched call] and as they glide past each other in the air the male transfers the food to the female mid flight you know. It's amazing to see really (hh:10a).

In spite of media attempts to demonise the birds and the provocative comments of some interest group representatives, local impressions of hen harriers, especially given their historical representation as 'pests' were not as negative as these would suggest. The hen harrier was not necessarily perceived as an adversary. Even among those whose livelihoods were potentially under threat, feelings towards the bird varied considerably and were not especially hostile. Much greater hostility was reserved for (what were described as) the 'elitist' network of conservationists who were seeking to protect the birds over and above what is considered necessary, at the expense of local, rural livelihoods. Nevertheless, interest in the hen harrier compares very unfavourably to

that in other, more familiar forms of nature such as songbirds, otters and foxes (familiar versus unfamiliar nature is discussed further Chapter 10).

Nature was not considered in terms of 'biodiversity' or through scientific worldviews but more in terms of its day-to-day significance in people's everyday lives. Enjoyment of, interest in, and respect for non-human nature was generally discussed as a part of the rural 'way of life' and as *a part of the places* in question. The fact that these places contain working farms catering for livestock means that relationships to nature are complex and ambiguous. In these places it is thus the norm to consider nature in multi-faceted and even contradictory ways. In fact 'nature' was rarely discussed as 'nature': it was discussed through the lens of the place. As a result many valued the sense of well-being which comes from interacting with everyday nature, while alternating between romantic descriptions of wildlife and more production orientated narratives of land and livestock. Natura 2000's narrow focus on 'special' (i.e. 'annexed') nature has meant that local relationships with 'ordinary' ('non-annexed') nature are also 'lost in translation'. This leads to a perception that local 'lay' people care little about 'nature'. This perception is bitterly resented because it cuts to the heart of people-place identities.

People-place identities

The translation of 'place' to 'habitat' under Natura 2000 also entails the translation of people-place relationships and identities. Interviews with conservationists (both state and NGO), reveal a view of local people as either "stressors" or "managers" of nature

(Berkes, 2004: 623). Through their practices with emplaced nature, local, 'lay' people are often seen to 'threaten' site 'integrity'; the question preoccupying conservation experts is how to encourage or convince local people to embrace the alternative role of managers or guardians of nature. Natura 2000's integrationist rhetoric (see chapter 2) clearly emphasizes a view of local people as "managers". *Implementing Natura 2000 objectives on the ground*, however, frequently requires the restriction or curtailment of people-place interactions thus effectively suggesting a view of local people as "stressors". Local people affected by Natura 2000 are thus frequently confronted with this latter view.

Wynne (2008) argues that 'social identity has to be seen as a function of social relations' (Wynne, 2008: 25). The simple reality that social relations are always emplaced suggests that places can play a part in the formation and articulation of these identities. This may be particularly the case for those who have lived and worked all their lives in a particular locale. The performance of place, though practices and discourse, is part and parcel of the construction of social identities (MacKensie, 2002:539). If place is threatened, shared place performances can be an effective form of resistance.

Interactions with a place, as Cheng et al (2003) argue can shape people's identities relative to that place (p96). A person might be a family member in 'the home', an employee 'at work', a tourist 'abroad', a hillwalker in 'the hills', an oldtimer in 'the local village', a blow-in 'a few miles up the road' (Gieryn, 2000). This is not to

suggest that place determines identity but rather that emplaced relationships can lead to the expression of some aspects of identity in particular places more than others.

Expertise, in particular, is frequently emplaced. One might be an expert in one locale, a non-expert in another. Failure to acknowledge and respect these material and semiotic demarcations might result in a person engaging in 'out of place' behaviours. Farmers interviewed in this research considered themselves to be experts in their 'fields' as farmers, but when official place meanings changed from fields and farms to 'habitats', their expertise in these locales was questioned and their identities were called into question. As Wynne argues 'people informally but incessantly problematise their own relationships with expertise of all kinds as part of their negotiations of their own identities' (Wynne, 1996: 50).

Acquiring, securing, improving and making a living from the land have long since been achievements of considerable standing in rural Ireland – achievements that bestow a deep sense of personal accomplishment and socio-cultural identity. This came across as a constant and significant issue in both case studies. As one NPWS official commented:

Farmers relate to one another by virtue of the fact that 'well my neighbour is a great farmer he has 300 sheep, he has great land and he farms very well whereas I only have 150 sheep and my land is crap' and so on, they are always looking at one another in terms of how valuable they are as farmers, what they've managed to make from the bit of land, that is their identity (on:05).

If farming bestows a 'successful' sense of identity, its relative abandonment (the uptake of forestry or land abandonment) bestows, at least for some, a sense of 'failure'. As

one farmer-forester explained: I suppose they [other farmers] think a good farmer wouldn't need to resort to forestry you know' (hh:11). Another farmer was adamant that he would not pursue 'the forestry option' irrespective of its more lucrative appeal: 'it's not in my nature' he stated proudly (hh:05). Another commented that: 'handing it all over to forestry is akin to failure' (hh:06).

For some farmers, that the practice of farming - the embodied experiences of interacting with situated nature - are such a part of who they are that the thought of not farming is unimaginable. As one farmer put it: 'Farmers don't want compensation, it's not about that, they want to farm their land. It's what they've done all their lives' (o-n: 08). There were several stories of older farmers in dire financial straits but refusing to part with 'the bit of land' or to put all or any of it into forestry or windfarms. The very idea of selling the land was unthinkable: 'ah you could do anything but sell it' (on:11).

For the older generation of farmers, it was argued, relations with 'the land' were particularly significant:

Those older farmers, their farming will not be a very profitable business, but they feel the only thing they have is the land, so it's worth something, it's worth something sentimentally, eh psychologically its the reason for their existence. Because this is the farmer who has spent his life picking stones and reseeded, and he'll have done this on land which is poor quality and he couldn't just pick up the land and go somewhere else, so psychologically it's very important to him (hh:09).

Most farmers, even those who had previously discussed nature in quite romantic terms on occasion, were most uncomfortable at the thought of their identities as farmers being 'rewritten' in more 'conservationist' terms. The following farmer explains how

Natura 2000 and REPS, in his view, will eventually involve a whole new role or identity for the farmer, an identity that he is not at all comfortable with:

And they'll just walk around and let the rabbits and the foxes take over. That's what REPS farming is all about or will be all about in time. REPS farming will just cater for wildlife, you'll be catering for wildlife instead of livestock. Ah that's not for me, sure that's not farming at all! (hh:1a)

A similar point was made by a farmer speaking at a governmental committee meeting on the subject:

I started farming at 11 years of age when my father was killed. I have toiled on that soil since then to try to educate my family. Now when I have one chance to provide something for my retirement, Dúchas comes along to snatch it from me without any regard to me or to future generations. I do not want to be left in that area for the rest of my life as a glorified game keeper (Herlihy, speaking at Joint Committee on Environmental and Local Government, 2 April 2003, on-line).

As the above quote suggests, farming 'that soil' is very much a part of how this man constructs his own self-identity. Designation, he fears, will pose a threat not only to future land-use practices but also to his socio-cultural identity. His resistance to designation is bound up with his resistance to an outwardly imposed new identity as a 'glorified gamekeeper'.

Section 9.4. Interpretative frames

There is some evidence to suggest that the contested places explored in this research acted as key 'interpretive frames' through which local people made sense of their daily lives (Gieryn, 2000:457 drawing on Bell, 1994). Particular place constructions were often used as a frame of reference against which local people evaluated and interpreted their own lives and identities, perceived others, took up political position and made

sense of their lived experiences. 'Like a tinted window, place is at once reflective and transparent' (Cheng et al, 2003: 93). Through the lens of place we not only see ourselves but we see others and the outside world looking back at us. The landscape [or I would say, place] as Ingold argues, 'is not a totally that you or anyone else can look at, it is rather the world in which we stand *in* taking up a point of view on our surroundings..... For the landscape, to borrow a phrase from Merleau-Ponty, is not so much the objects as 'the *homeland* of our thoughts' (Ingold 1993: 171).

People from both of the places studied presented themselves as decent, rural, hardworking people from *places under threat* from various outside influences. External perceptions of these places as 'neglected', 'abandoned' and 'peripheral' were central to their resentment of Natura 2000. It was generally felt that these areas were being 'earmarked' as habitats on the grounds that outsiders considered these places had little else to offer economically or culturally; these places had benefited only marginally from Ireland's recent period of economic growth and were sidelined in an increasingly urban-focused culture:

Why are all these designations on the poor quality lands on the Western seaboard, is there nothing left worth saving in Dublin? Is there no nature there at all?..... the place only interests them [conservationists] now because we looked after it.... Would they have thanked us better if we'd destroyed the place, built it all up terrible and left nothing to designate (o-n:09).

These places, they argued, had not been neglected by local people, nor will they be abandoned by them for 'the birds and tourists'. And yet people clearly resent what they perceive to be the neglect and abandonment of these places by central government. These perceptions of place have implications for cultural identities: people portrayed

themselves as located in a place where 'you have to fight for everything' including infrastructural funding for roads, schools, housing, waste collection and clean water. Planning permission concerns were continually presented in this light. 'We don't get things on a plate around here' (hh:01b) as one person explained.

Not only do places affect how individuals look out upon the world (e.g. categorization or classification of places), they influence how they look on themselves. How one understands, evaluates, and acts in a geographic setting directly reflects one's self-identity (Cheng et al, 2003:93).

They contrasted this with their perception of other places, places with more options, with more power: places more 'central':

We're not in Dublin 4 here you know, we have to get by with what we have going for us, with what this area offers us in the way of work, like our livelihoods (hh:18).

Using their relationships with nature, they presented themselves as less pretentious, more down to earth and laid-back than other 'distant' urban, anonymous and sometimes 'pretentious' places:

There's a lot of us work with land around here, its more down-to-earth if you like, we wouldn't be inclined to go on about conserving every little thing like they way that some would do. We'll leave that to the boys from the towns and beyond. I suppose some are a making a living from that, but we're not. There might be a bit of resentment alright when you get people shoving this thing down your throat. It's not how things are done around here (o-n:12).

The people around here are something else. There's not so much, eh pretence you know, people are who they are and you can just be yourself. It's more down-to-earth I'd say than you might get in a city. It might be changing now a bit but I've always felt I could just walk into any of those houses and feel at home. It's always been that kind of a place you know (hh:19).

Interactions with nature were often described as fundamental to making local people who they are:

We've two boys and a girl and they were outside in the yard at 8pm last night, it was pouring rain and they were outside doing cows, couldn't get them in, they are mad for the cattle and they'd be into the tractors and all, they just love it, or they'd be out playing hurling but they're not stuck in front of a television. It's a totally different way of life than they'd have in a town, they are healthier, sure they'd be cold and dirty, and they'd get colds and all, but I think they are better for it, they'll be better adults for it (hh:8a).

Rural places were generally perceived as safer and more community-focused than urban ones, while local people and local cultures were sometimes portrayed as more caring, laid-back, dependable (as well as forthright and practical) than their distant urban counterparts:

And it's a nice way of life really. There's 3 of us living up the road, there's a good community spirit, they can ramble into us and we can ramble into them without any specific reason, just for the chat you know and I think that way of life is -[interrupted by spouse] (hh:1b)

You could anonymous in city you know, strangers all around you. We club together to cut our hedges and all, it's a community thing again. That community spirit is there and if we want something, you go to your neighbour for it. And it's very safe too (hh:1a).

These places were also often described as having a slower pace of life, far from the hectic pace of town or city life. Interviewees spoke of rambling in and out of each others homes, having time to talk to one another. Places were presented as less ravaged by the effects of instantaneous time (Macnaghtan and Urry, 1998) and the placelessness that this engenders (p158). Hill farmers spoke of long days spent gathering sheep while those involved in walking spoke of long hours strolling through certain areas.

Unlike these locals who discuss 'nature' through the interpretive frame or lens of 'the place', ecological experts, by contrast, tend to present the place primarily through the interpretive frame or lens of 'science'. Discussions on both places with NPWS officials and other conservation experts centred on species requirements, flight paths, habitat fragmentation, bird population statistics, soil acidity levels and so on. As 'prime hen harrier habitat' the Stacks Mullaghereirks was described as providing 'the perfect combination of coverage and hunting grounds' (01: BWI). The Owenduff Nephin Complex was presented as encompassing a variety of 'high nature value' habitats from 'atlantic blanket bog', 'alpine and boreal heaths' to 'oligotrophic waters', 'dystopic lakes' and 'transition mires' (08: NPWS). Wild flowers (bog orchids) were described as 'diagnostic species' (o-n:04). One botanic expert explained how he was more familiar with the Latin nomenclature of many species and habitats (as they are classified in the Annexes to the Directives) than their vernacular names: 'yes it could be hard to follow alright if you haven't studied them that way... but no, I actually think of them in Latin terms first and then translate them back as necessary' (10: botanist).

Local people and conservationists also draw on different cognitive 'maps' of the places in question. The translation from place (a concept embracing multiple, fluid and in some sense dissolving boundaries) to that of a map (a representation wherein boundaries become fixed and settled) allows the place to be dominated by the 'scientists gaze' (Latour, 1995). This two-dimensional paper map when finalized eventually becomes the scientists' frame of reference for the place.

Feehan describes how these official, scientific frames of reference (here in the form of ordinance survey maps) transfer some aspects of place-making from local peoples' experiences to that of governmental experts:

the systematic and detailed mapping of the country by the Ordinance Survey in the nineteenth century froze the cultural landscape, and transferred responsibility for the naming of place and the setting of boundaries and meanings from the tradition and experience of the community to an arm of the central government (Feehan, 1997:587).

But just as scientists have their own cognitive, cultural *maps of science* wherein they engage in "boundary work" (Gieryn, 1999), local people have their own *cognitive place maps*, maps that frequently clash with those maps devised on the basis of science.

These maps, moreover, house a wealth of local, situated knowledges, knowledges that are often forgotten - and with a generation of ageing farmers (some with no willing heirs to pass the place on to) these knowledges run of risk of being lost for ever:

I know this place inside out and back to front, I know every corner of it and what grows there and what's in it, but no-one's ever come here to ask me about it, not once. They drive around here in those vans thinking they know it all, well they might know something but I know *those* fields out there and right back beyond to [inaudible]. You, now you're coming here to ask me about what *I* know, well I think that's great because no-one's ever asked me anything before. In over 70 years of minding it and no-one ever asked me (o-n:07).

Ecologists and local people rarely get the opportunity to compare maps, which for the most part are devised in wholly different circumstances and with different purposes in mind. A conversation with a NPWS expert, however, revealed a fascinating incident where he had the opportunity to compare his 'map in the making' with the cognitive maps of locals from the area under study:

I lived in [inaudible] once for several years with a family of shooting/fishing people. They were very knowledgeable and very interested in my work and it was a real revelation. I was working on otters so I was going around drawing maps and so on and I'd then come home and run past what I'd found with the man of the house and all his relations would know where all the otter holes were, as they being fishermen, would know a lot of them, so it was a good check on how effective I was being (hh:18).

And it was really nice to see this man relating to these six inch maps that I used which he had never seen in his life. His perception of the place and how he got around it and directed me around it, it was so interesting because he had a completely different set of landmarks and directions than what I used. It was a very different way of looking at things and it was very interesting and I could see him looking at the map and it was such a mental adjustment for him as well. I mean he had a mental map of the place but it certainly didn't correspond to what I had in the six inch one (hh:18).

Policy makers and administrators interviewed and contacted in the course of this research also deferred to standard scientific narratives. Conversations with some NPWS officials suggested a view of these places as reference numbers: projects to be completed; boxes to be ticked; files to be sent to Europe. Politicians on the other hand, tend to see both sides of both sides, although given the political unpopularity of Natura 2000 most seem to express the disgruntled views of their constituents.

Dublin versus locality-based conservation experts

The interpretative frames of *regional*, and especially *Dublin-based*, conservation experts seem to differ significantly from those of *locality-based* conservation experts, including conservation rangers with the NPWS (see Chapter 6), some of whom are born and bred locals. Unlike non-local experts, who as previously mentioned view these 'special' areas primarily through science, locality based (and sometimes self-taught) conservationists view these places through multiple lens. The experience of living

one's life in a particular locale runs contrary to the translation of that place into an 'unbundled' scientific narrative; the drawing of strict lines between 'nature' and 'society' becomes untenable.

A local, self-taught conservationist employed as a NPWS ranger in the Stacks Mullaghereirks, for example, displayed an intimate relationship with the place. He talked at length about his experiences of life in the area and how he learnt about nature through situated interactions with it from childhood to the present day: he perceives the place, in other words, as much more than a 'habitat'. His sensitivity to local biophysical circumstances as well as socio-cultural practices, norms and values means that he can appreciate the peculiarities of the place and the concerns and perspectives of local people. His articulation of local 'nature' through the lens of 'the place' is thus similar to that of other locals (see further ahead). At the same, however, his position as a NPWS ranger requires him to rely on science as the legitimate bedrock of designations: he explained how he draws heavily on ecological surveys and site maps sent from Dublin to gain credibility among landholders who question the legitimacy of the process.

Section 9.5. Place conservation and nature conservation: discourses of loss and catastrophe

Different cognitive frames held by locals and ecologists lead to different emphasises with respect to what is considered valuable, and hence worth 'conserving' in these places. While ecologists are centrally concerned with 'species and habitat

conservation', many local people are more particularly concerned with what might be described as 'place conservation'. Place, if understood as hybrid and relational, allows this broader conceptualisation of place conservation entailing concerns regarding changing hybrid materialities *and* human-human and human-nature relationships (with the former emanating, at least to some extent, from the latter). A concern for place-conservation, in other words, encompasses a multitude of concerns regarding the changing socio-ecological circumstances of life in these places.

For any society, culture, entity, habitat or social-ecological system 'change' is of course a constant fact of life. Change, however, can vary in its intensity and take place over varying time-scales. It can be slow-building and incremental (going relatively unnoticed for long periods) or it can be more sudden and immediately felt. It is commonly acknowledged that rural Ireland is in the middle of a period of fundamental, immediately felt, socio-economic and cultural change (Crowley, 2006).

Changes are taking place in its economic base, its social structures, its cultural drivers, its land-uses and even in the way that it is imagined. These changes have been brought about and are being influenced by a variety of factors, local, national, European and global. They are bringing change to ways of life that have existed for generations, to social structures within which many expected to continue to live their lives and to economic activities that at one time seemed changeless (CoFord Annual Report, 2006, on-line).

While the drivers of change, as the above suggests, are multiple, complex and operating at various levels, there is no doubt that the EU's Common Agricultural Policy and its subsequent reforms have had a particularly significant impact on rural Ireland. Other factors include increasing immigration; an increased concern for environmental issues; the growth of a more urban-focused national culture; migration from rural to urban

areas; counter-migration to rural areas; the construction of one-off holiday homes throughout rural areas; and a decline in the relative status of agriculture in the national economy.

At the same time as all this, *ecological and landscape features* in rural areas are equally understood to be undergoing a period of massive change. Reduced biodiversity, habitat fragmentation, and changing landscapes (including the demise of the small farm, the loss of wetlands, coupled with spread of afforestation, for example) are all sources of growing concern in ecological and environmental circles. The loss, or threatened loss, of scores of our 'native' species of flora and fauna (from the corncrake to the red squirrel) and the various habitats upon which they depend is a frequent topic of debate in scientific networks as well as the national media.

Against this background of inter-related processes of extensive social-ecological change, ecologists and local people express different concerns. Through their consideration of these 'unbundled' places through the lens of a scientific worldview, ecologists focus on phenomena that have been abstracted, reduced, translated and then subsequently 'purified' to appear as fundamentally 'natural'. For local people, on the other hand, who 'dwell' in these places and experience them through situated, embodied and habitual practices and relationships, these places are neither inherently 'social' or 'natural'. They are homes, workplaces, properties, achievements, memories, walkways, places to think, places to play, places to fight for, and places from which to observe and consider the world at large. They represent their lives, loves, hopes and dreams, their triumphs and failures, their pasts, their present and their futures. They are

to some extent constitutive and reflective of their multifaceted identities. Thus while local concerns regarding these changing places frequently include anxieties regarding changing aspects of locally experienced 'nature', they also include unease and apprehension regarding various aspects of 'social' phenomena - as local livelihoods, lifestyles and people-place identities appear to be fundamentally torn asunder and re-stitched differently.

As suggested in Chapter 6, presenting the claim for biodiversity loss as an environmental problem requiring action relies upon a 'rhetoric of loss' and a 'rhetoric of catastrophe' (Hannigan, 1995:155 drawing on Ibarra and Kitsuse, 1993). Ecological experts interviewed in this research drew heavily on a discourse of loss. Vastly diminishing numbers of hen harriers were frequently cited in interviews and in documentary sources: terms such as 'vanishing', 'dwindling', 'last remaining' were commonly employed. 'We just won't realize what we have lost until there's none left and then it will be too late' lamented one ornithological expert (hh:16). The Owenduff river was described as the '*last* river in Western Europe, which drains a relatively intact, extensive blanket bog system' (08: NPWS). Peatland experts described how Dutch conservationists are distraught at having 'lost all their own native peatlands' and insist that Ireland must conserve some 'outstanding representative samples' (04: IPPC). One expert argued that 'we have some of the best examples of peatlands left in Europe so we can't be allowed to see them disappear' (06: IWT). Frequent use of the term 'last' emphasizes perceptions of loss and the onus to 'save'. This rhetoric of loss is coupled with a sense of potential 'catastrophe' as regards the unknown implications of

these combined losses. If biodiversity continues to decline, it was argued that 'nobody can be sure how seriously it will affect us, all of us' (02: An Taisece).

Drawing on a similar rhetoric of loss and catastrophe to that of conservationists, locals from both places repeatedly presented *themselves* as 'a dying breed' (0-n:07) 'under threat of extinction' (hh:01) from places that were essentially 'coming apart at the seams' (hh:21). A poignant and heart-felt sense of loss was articulated with respect to changing landscapes, crumbling communities, depopulated areas and the demise of certain cultural norms and relationships. Forestry was frequently described as 'ruining' the landscape as old meadows were 'lost to forestry': 'that used to be all meadows along there, we used to walk through it to get home, it's just trees now and it's so dark and miserable, ah it has all changed' (hh:07). Communities were described as 'falling apart' as young people migrated to the towns for work, small farms were abandoned and family homes were vacated for tourists and newcomers. A NPWS ranger in the Stacks Mullaghereirks region (also a 'born and bred' local and a farmer as explained earlier) expressed a view of the place that was echoed time and again. As we drove around the area together he commented:

Ah the whole place has started to unravel now. I remember those were meadows there, we'd spend hours in there as kids, its all forestry now [...] There was a big shop here with flour, meal or whatever, everything you ever wanted was there. There used to be four of five shops in fact at one time, it's a lost era. [...] and there was a crowd of us used to meet there [pointing out the window] we'd go down to the cross-roads below, the crack was unreal! You can hardly see it now for forestry (hh:19).

And it used to be you could call into any of those houses. That's how it was. [...] There's at least 3 houses inside this area, that will be four now, where I don't even know who lives there, or if anyone does at all (hh:19).

Some relayed accounts of how newcomers frequently expect the places to change to suit their expectations of idyllic rural life (see Chapter 8). Changing norms were often discussed as a threat to older norms of socio-cultural behaviour:

but the younger generation and the new people coming in, Ballycroy is changing, the younger people coming in now would bring in their own ways, you could call to houses now and they wouldn't dream of offering the tea and that would have never happened in Ballycroy, in the genuine Ballycroy (on:13b).

Although they tend to focus on different aspects of change, the concerns of locals and conservationists, however, are not totally different: both share similar concerns about the loss of some aspects of 'nature'. Unlike conservation experts, locals express concerns regarding changing *relationships* with nature. Regret over the loss of the corncrake was a commonly raised sentiment in both case studies. But it was the experience of life among the corncrakes, rather than the corncrakes as an 'endangered species' that was lamented:

- Wife: And we are heart broken over the corncrake! With the help of God they will bring them back now. Oh I loved the corncrake, the beautiful corncrake. (on:10b)
- Husband: You'd open the door here at night and going back along the river there ah sure you'd hear them non-stop (on:10a)
- Wife: And in the early morning you'd waken to them (on:10b).

While conservationists mourn the loss of 'representative' or 'outstanding' samples of blanket bog, local people fear the loss of the embodied practice of bog cutting. Many spoke of this sensual experience of interacting with 'nature' as something particularly satisfying and enjoyable:

Did you ever cut bog with a sléan, ah it's a lovely, hard work but enjoyable. It was always done around here. It's been curtailed now in many parts. I don't know for how long we'll be allowed to do it at all now. It's sad to see that way of life come to an end really (hh:21).

This rhetoric of loss is accompanied by a rhetoric of catastrophe. The perceived inability to make a viable living post-designation is frequently discussed in terms of its 'devastating' impact on these rural places. Designation, leading to depopulation and land abandonment, it is argued, will signal the 'ruination' of these areas as these hardworking communities become wilderness areas 'bereft of people'. Such views are associated with a perception of farming as the 'backbone' of rural Ireland. Concerns regarding farming livelihoods are thus bound up with concerns regarding the 'character' or 'fabric' of the area. As one interviewee put it:

This thing [designation] is going to decimate rural Ireland cause farmers cannot sustain their income in those areas, so what else can they do, a lot of those holding would be small holdings [...] And farm abandonment is bad ecologically but also culturally. It will change the character of the place. This whole thing [Natura 2000 designations] will change the entire character of the country. It will decimate these areas. It could be the ruination of our society as we know it, and it's as simple as that (hh:08a).

The same sentiment was expressed by a farming representative speaking at a governmental committee. He claimed that 'Dúchas are intent on turning rural Ireland into a desolate wilderness bereft of people' [...] 'ruining communities and impoverishing the people who live there' (Cotter, Forestry Representative at Joint Committee on the Environment and Local Government, 2 April 2003, on-line).

Although, as highlighted in Chapter 8, perceptions of devastation and ruination are also directed at some of the practices and developments that Natura 2000 designations

sometimes help to *curtail* or block, (windfarming and forestry), this is rarely openly embraced or even recognised by those indirectly benefiting by this phenomenon (see Chapter 8). This might be explained by an overarching resistance to place as habitat and the “science-first” (Kelsey, 2003) manner in which Natura 2000 is being implemented.

Conclusion

Unlike local people who experience ‘nature’ as part and parcel of dwelling in these places (and to some extent perceive and make sense of ‘life’ through the lens of the place), Natura 2000 translates and thus reduces these places and their emplaced natures into ‘unbundled’ (Gieryn, 2000) de-contextualised scientific objects. These purely science-based place meanings strip these places of their inherent hybridity and relationality. Just as these places are ‘doubly constructed’ (Gieryn, 2000) by locals over time (both materially and cognitively), local people are doubly discounted by Natura 2000. First, in spite of its integrationist rhetoric, its “science-first” (Kelsey, 2003) methodology fails to acknowledge the contributions that generations of local people have played in constructing the materiality or bio-physicality these places. As one interviewee commented: ‘would they have thanked us better I wonder if we’d destroyed the place, it’s only of interest to them now because we treated it well’ (hh:01b). This lack of acknowledgement has only served to fuel resentment. Secondly, it fails to appreciate the diversity of (often heartfelt) meanings that emerge from intimate, often longstanding people-place relationships; these meanings are essentially ‘lost in translation’.

Translating these places into habitats also entails the translation of people-place relationships and identities. This is bitterly resented by local people whose relationships with these places (and their 'natures') are more complex and ambiguous than notions of "stressors" or "managers" (Berkes, 2004) can grasp: thus neither identity is accepted. Through strikingly similar rhetorics of loss and catastrophe, both locals and conservationists express anxieties in relation to change and the implications of change on these, in one sense or another, 'special' places. While not all locals are equally intent on conserving all aspects of these places (indeed some want to change or further develop them), most express a multiplicity of concerns regarding the changing experiences of life in these places. In these depopulated, rural areas struggling for survival in an increasingly urban-centered economic and cultural context, local people are more concerned with place conservation than nature or habitat conservation. Resistance to designation is thus bound up with a broader sense of anxiety in relation to changing rural lifestyles, livelihoods and experiences of place. Unlike nature or habitat conservation, place conservation as articulated by local people is not based on a strict demarcation between what is considered 'natural' and 'social'. This supports a dwelling perspective wherein nature and culture 'are bound together in a place' (Clope et al, 2001) and the view that people perceive nature through situated habitual practices, rather than through the mediation of concepts (Ingold, 1995; 2002; 2005).

Chapter 10: Concluding Discussion

In this final Chapter I pick up a few key issues raised in the thesis and consider them in the context of nature conservation policies. I argue the case for a “people-included”, place-sensitive model of conservationism that draws on a diversity of ways of knowing and relating to nature. I consider how we address the inevitability of social-ecological change and suggest that we need to focus on building more resilient place-based livelihoods and communities. The Chapter finally reflects on the three main sociological approaches employed in the study and considers their utility to this research and to sociological studies more broadly.

“Science-first” or “people-included”: The centrality of people-place relationships

The battle for biodiversity, it is often argued, will be ‘won or lost’ at local levels (Berkes, 2004; Kelsey, 2003; Pretty et al., 2003). Irrespective of how nature is conceptualized or valued and the terms employed to construct and describe it, there is no doubt that the future trajectory of emplaced ‘nature’ depends heavily on the actions of those who interact with it at local levels, all around the planet. Measures taken at more global levels, while important in principle, need to connect with people on the ground. To do this, they need to remain meaningful at more local levels. The Natura 2000 process of knowledge abstraction, aggregation, translation and in a sense ‘colonisation’ entails not only a loss of contextual specificity and material detail but also a loss of the people-place relationships, meanings and identities that were fundamental to constructing these ‘hybrids’ over time. If we wish to conserve these places in, or to restore them to their currently desired state we must also take stock of these relationships (acknowledging, where appropriate,

the knowledge, skills, and sensitivities to place held by local people (Berkes, 2004; Ingold, 1995; Kloppenburg, 1991, Visser et al, 2006)). This is not to suggest that all locally emplaced interactions with nature are necessarily 'benign' towards nature conservation goals or biodiversity. If blanket bog is to be conserved in the Owenduff Nephin Complex, overgrazing does need to be addressed, just as achieving the ideal mosaic style landscape for the hen harrier may require that forestry is somewhat curtailed or managed. But these humanly devised objectives cannot be achieved by displacing (literally but also socially and psychologically) the people upon whom the future of these places so heavily depends.

Based on insights from dwelling perspectives and notions of place as hybrid and relational, this study argues that ecologically 'special' places both interpretatively and materially *exist in the relationships* between human and non-human nature (Cloeke et al, 2001; Watson, 2003). The potential loss of these relationships, leading for example, to land abandonment and undergrazing, could spell challenges harder to address than many of those currently faced. Notwithstanding the fact that extreme, subsidy-induced overgrazing has undoubtedly damaged the commonages in the Owenduff Nephin region, a European Commission report on sheep and goat farming in the EU recognises 'that a decline in, or cessation of grazing' in some areas

.....would lead to a loss of a range of habitats to scrub invasion or afforestation.....probably contributing to a further decline of already endangered species. [...] Increased fire risk and increased intensity of fires, due to the accumulation of dry matter on scrub and forest land.[...] Increased soil erosion following forest fires, and risk of desertification in the case of repeated fires on the same land. (European Commission, 2006:12)

Such relationships and their accompanying knowledges and skilled practices may in fact prove harder to 'reintroduce' than some of the valuable species under consideration. Conserving some of these relationships, in other words, should be as high a priority as conserving individual species. The same report notes that:

The increasing difficulties in employing skilled shepherds appear to be common to many of the areas in question. Whilst the shepherding function is regarded as essential by many environmental experts, the tendency for policy makers and agronomists is to regard shepherding as an historic curiosity whose disappearance is inevitable. This is a clear example of how the more traditional S&G [sheep and goat] production systems need to be re-evaluated by policy makers within the context of the broader objectives for agriculture that recent European Commission reforms have introduced (European Commission, 2006:12).

Local (or emplaced) knowledges of nature (Wynne, 1996; Clark and Murdoch, 1997) and the significance of people-nature/people-place connections on the ground is by no means a new area of sociological study and is also gaining recognition in applied policy-based research (Parc Interregional du Marais Poitevin, 2003). While the essence of these arguments is not lost on some NPWS rangers and some policy analysts and ecological experts, it has yet to be institutionalised as common practice in Natura 2000 decision-making in Ireland.

There are perhaps many reasons for this but the following inter-related points seem the most important. First, as argued in Chapter 2, the methodological foundations of the network emerged from a lengthy process of negotiation wherein divergent scientific viewpoints, cultural attitudes and political factors all jostled for position. Construction of the Directives themselves was a mammoth and highly contentious line-drawing exercise plagued with tensions, dilemmas, contradictions and uncertainties (Pinton, 2001; Alphandéry et al, 2001, Scannell et al, 1999). One clearly problematic aspect of this is the resultant tension between a "science-first"

and “people-included” model of conservationism (Kelsey, 2003; Stoll-Kleeman et al, 2002). Attempts to incorporate human concerns and well-being into site management decision-making (Article 6 of the Habitats Directive) is clearly a step towards a more “people-included” approach and yet it is ambiguous and rife with interpretative grey areas. Also, because application of this requirement entails repeated, localised cognitive line-drawing exercises, wherein specific social factors are ‘teased apart’ from natural ones and weighed in significance, it remains a highly contingent process, and always underpinned by relations of power.

Kelsey (2003) and Robertson et al (2003) suggest a more ambitious people-included approach that allows *other (i.e. non-scientific) ways of knowing and relating to nature* to enter into the decision-making process itself. Because the choice of ‘annexed’ species and habitats deemed worthy of protection in the first place (perhaps the most significant decision of all) is made within the boundaries of epistemic communities of conservation scientists, the voices of ‘knowledge agents’ (Wynne, 1996) located *outside* these boundaries are silenced from the start. But while science is continually cited as the bedrock of the entire endeavour and permeates all aspects of decision-making with an unrivalled authority, several studies have revealed that science as a highly contingent, socio-cultural and political practice rather than an inherently distinct or superior form of knowledge (Waterton, 2002; Pinton, 2001). Its authority and distinctiveness are a function of its ability to travel and gain an apparent ‘placelessness’ (Latour, 1987; Clark & Murdoch 1997).

At national level this research shows how powerful interest groups can permeate the boundaries of Natura 2000 science, influencing these line-drawing processes. The

farming-forestry coalition in the hen harrier controversy were able to alter the contours of the place-making exercise (some places previously targeted as hen harrier sites were inexplicably removed from 'the map', as discussed in Chapter 7). The political nature of the line-drawing process between social and natural was also a factor in the Owenduff Nephin Complex, where the 'carrying capacity' calculated for each commonage in the framework plans was never actually applied at local levels until such a point as the threat of EU sanction forced the issue and the more drastic measure of compulsory destocking was initiated (see Chapter 8).

In the face of all this it is easy to understand why conservationist NGOs are loathe to allow any further steps in the direction of a more "people-included" science. Most argue that the process of line-drawing should not be 'hijacked' by vested interests, which in this case happen to be farmers although in other places and at other times they might be fishermen, hunters, developers and so on. And yet there are difficulties legitimising the claim that these lines should be drawn by an inner circle of conservation scientists. If, following a sociology of scientific knowledge approach, all knowledges of nature are underpinned by human values, desires, judgements and choices (Irwin, 2001; Gieryn, 1999), it is difficult to legitimise over-arching authority for line-drawing for any *one* societal group.

While some farmers (as 'vested interests' and powerfully 'lobbyists') have enjoyed a certain input into the line-drawing exercise at national level, both case studies reveal the extent to which ordinary landholder-farmers on the ground have played little or no part in these processes. Places were re-made as habitat and presented to landholders after the fact – just as site management plans were handed out as a 'fait

accompli', for information purposes following a 'deficit model' (Owens, 2000) of public engagement. Irrespective of Natura 2000's more holistic and integrative rhetoric, and some input from stakeholder groups at national level - practices on the ground remain essentially "science first" and top-down:

While conservation policies may have introduced rhetorics of human inclusion into their scope, the distant-nature conservationist mindset is still a popular motivating current among scientists and publics (Campbell, 2005: 285; see also Brockington 2002; Brechin et al. 2002)

This entrenched mindset underpinning conservationist culture, described in Ireland as 'draconian' or 'elitist' has been a significant factor in many other EU countries attempting to transpose the Directives (see Chapter 6). This is reminiscent of what Takacs describes as 'eco-ayatollahs' enforcing a particular vision of nature on others (Takacs, 1996).

This, I would argue, is the real tragedy of the Natura 2000 endeavour. Leaving aside for a moment the important ethical argument that fairness necessitates more democratic and deliberative forms of decision-making, and the argument set out above that the maintenance of some people-place relationships is necessary for the management of conservation objectives, this failure to engage with people on the ground is also detrimental in another sense. In disallowing the more varied, moderate and nuanced voices of the vast majority of farming-landholding people affected by this project (Visser et al, 2006) and thereby including *only* the more politically orientated, louder voices of powerful lobby groups (whether farmers or indeed conservationists) the Natura 2000 endeavour has allowed itself to be pulled between two opposing forces; it has never actually allowed itself to engage with the

middle ground which would require more place-based forms of deliberative negotiation and decision-making.

Resistance to conservation is often explained in terms of economic consequences for people's livelihoods. Both case studies suggest this is part of the picture but as Campbell argues 'it is not merely a matter of compensation or alternatives for livelihood support that is necessary to forge consent for conservation' (Campbell, 2005: 289).

These kinds of solutions based on economic assumptions of human behaviour being motivated by rational cost-benefit calculation of resource alternatives appear from the policy perspective as the more benign or people-friendly components of 'participatory conservation'. Such measures of substituting alternative livelihoods to ones of ecological dependence do not, however, address a key anthropological reality. That is that the regulation of resource use as a management of the environment (conceived as an externalised and controllable object) frequently involves a *cultural transformation* in the ways that people place themselves in their relational context of being alive (Campbell, 2005: 289, emphasis added).

Cultural transformation under Natura 2000 entails changing aspects of people-place relationships that (for better or worse) are fundamental to the future of these places. In the two case studies reported here, people were suddenly required to value a nature different from before, to curtail pre-existing and sometimes longstanding people-place interactions in favour of new ones, and to re-place or re-situate *themselves* in this overall context. New relationships and identities were being worked out in this process of place reinvention.

This reinvention of places under Natura 2000 is as we have already seen in Chapter 8 is an unevenly felt process as some livelihoods suffer and others gain, some place meanings are bolstered or protected and others are denied or 'lost in translation'.

But resistance to 'place as habitat' and the top-down manner in which these translations occurred in Ireland appears to be a common source of resentment among all those affected.

While earlier, "fortress" styles of conservationism may have physically and often brutally displaced people (especially in parts of the developing world), this study shows how even benign, innovative and clearly well-intentioned forms of conservationism - when underpinned by a "science-first", top-down and place-insensitive methodology - can still effectively result in 'displacement', albeit of a more subtle, social and psychological kind.

Yet the findings of this research also reveal the significance of more habitual experiences of *dwelling in place* as a form of *resistance* to the translation of place as habitat. From local stocks of emplaced knowledges to local articulations of boundaries, belongingness, access and entitlements and the appropriateness or otherwise of in-place practices or behaviours, both places (as 'unwindable spirals' of materialities and meanings (Gieryn, 2000)) 'fought back' and refused to be translated. In Latoureaux (or ANT) terms, each place, both people and nature betrayed the earlier goals and identities established for them under the network. Farmers refused to be translated into either "stressors" or "managers"; sheep refused to be translated into 'trespassers' or controllable 'stock'; whether or not hen harriers will conform to standardised depictions of where and how they might dwell in these particular places remains to be seen.

Changing Places: Nature conservation and Place conservation

Given their shared underlying malaise and anxiety in the face of change, one might wonder why 'nature/habitat conservation' as articulated by nature conservationists and 'place conservation' as articulated by local people, clash so fundamentally.

This thesis suggests it is because the processes employed to achieve the former translate these places into scientific objects which local people cannot relate to. For the people who dwell within them, these places are not defined by strict nature-society boundaries. Nature's edge does not begin or end at 'river margins' just as society's edge does not begin or end at the entrance to a home, a workplace, a property (or indeed a laboratory or an office block). Nature and culture are bound together in these hybrid places. Thus while both groups are concerned with aspects of change, the phenomena they perceive as changing fundamentally differ.

In a series of papers entitled 'Re-placing Nature' Ingold addresses (among other things) the issue of changing places over time and through space through a broader consideration of the problems encountered when trying to protect nature through protected places. 'Why should attempts to protect place threaten nature', he questions, 'and why should attempts to protect nature threaten place'? (Ingold, 2005:505). Both humans and non-humans create dwelling places in order to protect themselves from 'threats' (such as floods, fires, disease, attacks by human or non-humans). Many people living in places zoned as 'habitats', however, are 'facing a new kind of threat which comes from attempts, at national and international levels, to protect nature' (Ingold: 2005:506). One difference between both forms of protection, as identified by Ingold, is that the protection of place:

extends to constituents of the environment that are known to you, with which you have a personal relationship and a shared history, as against the

forces of disorder that lurk beyond the range of the familiar. The protection of nature, by contrast, appears to side with the unknown against the known. The objects of protection are circumscribed by a territorial boundary that sets them rigidly apart from the sphere of social interaction (Ingold, 2005: 506).

As argued in Chapter 9, local people interviewed in this research are more interested in familiar, 'everyday' nature than the 'special' and often 'unknown' nature identified by scientific experts. Their relationships with nature are bound up with their experiences of life in these 'hybrid' places. Thus while locals experience ordinary nature (and to some extent life more generally) through the 'lens' of the place, ecological experts view these places through the 'lens' of science, focusing more heavily on 'special' 'nature' as conceptually distinct from 'society'. The boundaries (both geographic and epistemological) drawn by ecological experts are thus not recognised by local people; and expert place-making assumptions regarding authenticity, belongingness, access and entitlements are cast aside in favour of local ones.

Perhaps then, as Ingold argues, the protection of nature and the protection of place are incompatible (2005:507). Protecting nature through protected places, he argues, entails 'enclosure' which ultimately 'destroys' places which are 'constituted in movement, through the comings and goings of peoples and animals' (Ingold, 2005: 507). Places, in other words, cannot be reduced to a set of component parts that can be studied, mapped, counted and 'protected' within a perimeter boundary. All places are continually affected by activities, flows and processes operating between, above and through them. Global warming, for example, does not stop at the border of a protected area. Capitalism has a salience leaving no place, however remote or 'peripheral' untouched.

Wells and Brandon (1992) note that many of the forces threatening biodiversity lie beyond the boundary fence, over which local people have little if any control. Local people are increasingly confronted by the relentless rules of global market economics. This means that land use and agriculture are not always determined in their own interests, forcing them to give top priority to survival rather than biodiversity (Stoll-Kleeman and O'Riordan, 2002: 173, see also van Schaik and Kramer 1997).

Protecting biodiversity through establishment of conservation sites as discrete bounded places, or oases of ring-fenced protection (even if these are understood to be connected through an overall 'network') will thus have very limited success if the overarching social-ecological systems within which they are embedded are not taken into account.

If clashing place perspectives helps to explain why local and conservationist articulations of change are so far apart, so too does clashing perspectives of time. Time, like place (and space) is another important medium through which 'the production of life unfolds' (Ingold, 1995). My central focus on place in this study has meant that the importance of time has been neglected. Macnaghtan and Urry (1998) discuss different experiences of time from the clock time of modernity to the instantaneous time of late modernity and the glacial (or evolutionary) time of nature/ecology. Conservationists and rural people are often united (although rarely realising it) in a shared concern to safeguard some aspects of place from the effects of instantaneous time and the sudden losses this entails. But they differ in their experiences of how time unfolds. While farmer/landholders think about place changes over generations of families invoking the experiences of their forefathers and expressing concerns for children, and often look back nostalgically, seduced by particular conceptions of place in time, environmentalists often articulate a more long-term, 'glacial' rather than generational view of time; yet they also express

allegiance to particular visions of places in time, equally seduced by an idea of relative permanence and continuity. These clashing perspectives of time may be an interesting area for further research.

Change is of course inevitable; the question is how we deal with it. Natura 2000 has been described as a 'static' or 'no net loss' (Ledoux et al, 2003) approach to biodiversity protection and this makes change a problematic issue within it. More compositionalist than functionalist in ethos (see Chapter 3), it is an attempt to conserve emplaced nature as it exists and as it is valued (by scientific practice) at a particular time and from particular places ('centres of accumulation') (Latour, 1987). The very notion of protected areas, moreover, still reflects earlier notions of 'wilderness' protection whereby oases of 'authentic' or 'pure' nature are protected from a creeping sea of non-nature and non-authenticity: nature is taken out-of-time and out-of-place.

There are interesting parallels between compositionalist approaches to ecology and some earlier articulations of dwelling. Both it seems are based on 'some idealised past original state' (Cloke et al, 2001) characterized by authenticity, oneness and purity of relations. People presented as legitimately 'rooted' in a spatially bounded area under some conceptualizations of dwelling achieve a 'belongingness' similar to that afforded to 'native' naturally-occurring species under a compositionalist schema. Thus both rely on static conceptualisations of place, and on accounts that deny the porosity of place boundaries whether geographic (the flows of people, animals, things, processes, ideas and information that continually spill over these boundaries and influence or change the places within them) or cognitive (the social and the natural).

More recent articulations of dwelling (see Ingold 1995) and functionalist or non-equilibrium schools of ecology (see Callicot et al, 1999; Berkes et al, 2002) provide accounts which more explicitly reflect change over time and through space and are more cognizant of the porosity of place and nature-society boundaries.

Functionalist trends in ecological thinking present nature as being in permanent flux and consider humans and non-humans in a more integrated, less bounded manner.

Dwelling, as Ingold (1995) points out, should not be equated with rest or stasis.

All of this adds further layers of complexities, uncertainties and indeterminacies (Yearley, 2000: drawing on Wynne, 1992) as regards the management of these places. Indeterminacy as articulated by Yearley (where 'not knowing' is exacerbated by indeterminate, future developments) is similar to what ecologists refer to as 'complex systems thinking' i.e. where mutually constituted and highly dynamic natural-social systems make knowing or predicting the future direction of the interacting 'system' a highly tentative endeavour (Berkes et al, 2002). If we accept even an element of both or either of these insights it seems that less prescriptive, more adaptive, flexible and grounded methods of management are more likely to succeed.

More resilient places?

The Resilience Alliance, which articulates such arguments, takes a rather different approach to change, accepting some degree of social-ecological change as the norm. Rather than trying to take nature out-of-time it argues that we should focus on building resilience to cope with change and adapt with it. The complexity of social-

ecological systems means that we cannot predict or 'control' change in any absolute sense. We can, however, try to 'navigate' our way through the endlessly changing conditions of life. If uncertainties and surprises are to be expected, our goal should be to remain flexible and adaptive in our responses. Maintaining diversity allows us to build on the 'adaptive capacity' of all levels of nature-society to adapt to change. Doing so enables us to avoid sudden levels of cataclysmic change as social ecological systems 'flip' from one qualitative state to another. Their arguments suggest that the impact of policy initiatives, whether economic or ecologically driven, on social-ecological resilience should not be overlooked.

Adger's study, as mentioned in Chapter 3, showed how market liberalisation and the privatization of mangroves in Vietnam ultimately reduced social and ecological resilience (Adger, 2000). Traditionally managed as common pool resources, these intertidal forests had provided multiple benefits from fisheries to coastal protection. Once they were converted into market commodities for use for agriculture and aquaculture, however, the ecosystem became increasingly fragile: aquaculture relies on a narrow range of commercial species prone to pests and conversion of mangroves to aquaculture ponds increases the risk of inundation and coastal flooding. Changes in property rights imposed external stresses on livelihoods, communities and on the ecology of the area while 'the disturbance of the [former mangrove] institution undermined the social capital of collective management and resulted in a breakdown of collective action for the remaining resource' (Adger, 2000; 359).

It might be similarly argued that perverse subsidies for sheep farming and tax incentives for forestry under the CAP resulted in reduced social-ecological resilience in the case studies explored here. Subsidy-induced sheep farming or mass forestry may have temporarily provided lucrative incomes for some but did nothing to assist the formation of resilient livelihoods *or* communities. Farming communities in the Stacks Mullaghereirk region who diversified into forestry now find themselves urged to adapt or diversify once more. The extent of local forestry has also created community tensions and divisions. Communities of divided hill farmers in the Owenduff Nephin Complex fear they are being forced into extinction as the CAP destroys the natural and social 'capital' that once characterised the area.

The places and their social institutions explored in this research are more characterised by vulnerability than stability or resilience. REPS farmers in both regions wonder for how long they can rely on a form of rural 'social welfarism' that has been already the subject of some controversy (Crowley, 2006). Others worry about future reliance on oil for home-heating, as turf-cutting is curtailed and the cost of oil continues to soar. Achieving the 'multifunctional' countryside envisaged under reform of the CAP is less straightforward on the ground than on paper. Livelihood diversification is curtailed by uneven patterns of economic development and the ecological affordances of particular places: soil acidity levels, for example, limit forestry options. Diversification also requires a cultural transformation of people-place relationships and identities. Financial constraints and lack of technological access preclude many from pursuing windfarming on their own terms, yet dependency on windfarm companies brings with it social sanction, altered landscapes and loss of control over place.

Policy prescriptions under Natura 2000 designed to maintain or improve biological diversity and hence the resilience of ecosystems should afford equal consideration to resilience in social institutions (stability of livelihoods, distribution of income, levels of social capital) necessary to their effective management in the long-term. While conflicts, tensions and divides are an inevitable part of local life, these can be greatly exacerbated by policy initiatives which bring unequal benefits to those affected: 'social capital' inevitably suffers. Nevertheless, provision of livelihood assistance is not enough to secure compliance with, or more importantly, support for nature conservation goals as established by conservation science. Support for nature conservation objectives requires that other voices are included in the articulation of these objectives, and that they are not drowned out by the voices of those more powerful. This suggests the need for more deliberative, less rigid, bounded and hierarchical conceptualisations of 'nature' and 'society'. "People-included" approaches to conservationism, in other words, need to embrace not only human 'interests' in the economic and political sense, but also other, i.e. non-scientific ways of knowing and relating to nature. In drawing the lines between the 'natural' and the 'social', these *cultural* diversities are frequently overlooked.

Focusing on resilience brings the underlying methodology of the Natura 2000 endeavour into question. Rather than drawing boundary lines between 'nature' and 'society' and trying to ring-fence the natural so as to manage or protect its integrity (whether through a network or discrete sites) more attention may need to be focused on building more resilient place-based livelihoods embracing a diversity of ways in which people know and relate to nature. Proponents of the resilience school would

suggest that we do this even if only for instrumental reasons: to build more adaptive ecological skills and knowledges so as not to 'foreclose future options' (Berkes et al, 2002). But perhaps there are other reasons why this ought to be so.

A more public ecology?

How we (humans) seek to manage the future of these and other such places is inevitably shaped by our values. Even among those who wish to conserve, protect or restore them for nature conservation purposes, there are many possible and often incompatible 'natures' that might be invoked (see chapter 3). The choices taken will lead to very different outcomes (for human and non-human nature, for places and for the many varied relationships between). As Carolan (2006) argues 'conservation policies, far from being separate from the objects of their care, actually become part of their broader ecology when implemented' (Carolan, 2006:154).

The hegemonic position of science as the legitimate 'voice of nature' (Yearley, 1991) has traditionally silenced other voices in conservation policy-making and implementing circles. This research has shown that other voices are often included in this line-drawing exercise as the boundaries of science are breached, but these tend to be the voices of the powerful, drowning out the voices of many others on the ground. Nevertheless, 'science' remains dominant. So how do we understand and attempt to manage or care for 'nature' if not through science? We are faced with a paradox that is not easy to resolve. While the material reality of nature-society *exists* 'out there', it seems that we can never entirely *know* it in any comprehensive sense. We can only ever know it *as* humans through our varied relationships with it.

Acknowledging this, however, is not to suggest complacency towards 'nature' or to encourage a lapse into nihilism. We still need some shared ways of addressing and exploring these interwoven materialities and meanings – but ways underpinned by a more self-reflexive methodology.

In questioning extreme positivist approaches to science, public ecology as articulated by Robertson et al (2003) is an attempt to devise such an alternative methodology. Public ecologists embrace the inevitability of some degree of uncertainty and subjectivity in all attempts to draw lines between 'society' and 'nature' (Robertson et al, 2003). They also call for more adaptive, self-conscious place-based forms of stewardship. Sociologists of science have long since been making a similar case. As Clark and Murdoch (1997) argue

scientific knowledge could be more efficiently and effectively applied if it opened itself up to non-scientific ways of thinking. The cost would be an admission that the universal pretensions of scientific knowledge should be cast aside in favour of a more locally sensitive, temporally contingent type of scientific endeavour (p40).

Such a flexible approach might work better managing uncertainties but we also need to consider the extent whether and to what extent it would be socially acceptable. Opponents of hen harrier designations, as we saw in Chapter 7, took advantage of scientific uncertainties in order to contest the translation of places into habitats. But it was not the uncertainties *in themselves* that *caused* conflict: this was due (inter alia) to a more fundamental clash in people-place relationships and identities (see Chapter 9). The manner in which uncertainties were handled, however, undoubtedly intensified conflict. Although the lay public have always been equivocal in their trust of expert systems (Wynne, 1992), failure to disclose uncertainties which later reveal themselves can exacerbate distrust and further sour relationships. Opening

up the universal pretensions of science and admitting its tentative nature, while it would not resolve this conceptual 'clash' in place-meanings, might be a more constructive way forward.

Proponents of public ecology argue that adaptive and self-reflexive forms of place stewardship are not only likely to be more effective but also present a fairer way of grappling with the 'contested natures' (Macnaghtan and Urry, 1998) at the heart of conservationism.

This place-based, contextual approach goes some way towards reconciling some of the conceptual difficulties regarding our understandings of nature. For example, Robertson and Hull suggest that 'although environmental quality may be conceptualised in the abstract' [e.g. environmental 'health' or 'integrity'] the specific goals and objectives of management must be determined in the context of the place-based projects where the management occurs' (Robertson & Hull, 2001:974). Place-based forms of biodiversity protection would thus undergo less 'translation' out of context and would thus also retain more local meanings.

Public ecology is about 'creating a language that is accessible enough to support broad participation and meaningful deliberation in environmental decision-making' (Robertson & Hull: 2001:975). It responds, therefore, to Endter-Wada et al's call to find a common language for interaction between the social and natural sciences (Endter-Wada et al, 1998: 901). It suggests the need for a multi or trans-disciplinary approach:

Integration is currently hindered because environmental knowledge is produced within specialised and institutional boundaries [this knowledge]

may be ineffective for policy management because it is not meaningful outside its context of origin and it is not transferable across the multiple language communities participating in decision-making (i.e. groups and sub-groups of natural scientists, social scientists, humanities scholars, environmental professionals, industry representatives and citizen activists (Robertson & Hull, 2001: 975, see also Bryant and Wilson, 1998; Scoones, 1999).

To this list I would add and indeed underline in the specific case of ecosystem or habitat management in protected places, the 'language community' of local people.

The challenge facing public ecology, then, is not just to enable effective communication across disciplinary boundaries but also across the boundaries of the broader research, policy-making, environmental management and local communities. In creating a common language (or integrative paradigm), public ecologists argue that the terminology employed should neither mask the social values embedded within them nor attempt to conceal scientific uncertainties (Robertson & Hull, 2001, drawing on Yearley, 2000 and Wynne, 1992).

Public ecology requires new, open and flexible institutions to support this more participatory process of knowledge construction (Robertson & Hull, 2003:401; see also Shannon and Antypas, 1997; Ostrom et al, 2002; Berkes et al, 2002). One suggested forum for increased public participation is that of the extended peer review (Funtowicz et al, 1995) wherein multi and trans-disciplinary teams, concerned citizens and stakeholders are involved in reviewing and commenting on the work of specialised, professional groups. In such fora, however, the parameters of useful and legitimate environmental knowledge would no longer be drawn solely on the basis of a positivist worldview. Instead, they would allow for 'competing forms of rationality' tailored to the unique people, places and issues involved

(Robertson & Hull, 2003: 406; see also Renn et al, 1995; Moote et al, 1997; Hennen, 1999).

The public ecology vision of people-included conservationism does appear idealistic, if not utopian. It presents a harmonious image of multiple ways of knowing and valuing nature coming together to build a common language for, and a shared vision of a highly uncertain and ever-changing 'nature'. Some of the potential difficulties with it and some of the obstacles to its achievement are further considered here

First, it would be naïve to underestimate the hegemony of 'hard' science as a formidable obstacle. How difficult would it be to dispel the myths of a 'complete' and 'value-neutral' science (Norton, 1998) given that, as Robertson et al have acknowledged 'the sciences and scientists are generally unwilling to even acknowledge the value-laden, prescriptive component of their language let alone actively engage in a process that makes these values explicit?' (Robertson et al, 2003:11). Under the conditions of a more public ecology, would all knowledges of nature be on an equal footing or would local knowledges be incorporated under an overall framework of scientific 'business-as-usual'? Would the voices of powerful be heard over and above other voices? What mechanisms could ensure that all voices are equally heard and what criteria would be used to mediate differences? Would a focus on achieving a multi or trans-disciplinary knowledge overshadow the need for what Wynne has referred to as 'non-disciplinarity' (everyday forms of expertise by people managing nature on the ground)? Second, the idea of place-based solutions can disguise the fact that places are far from homogenous and are

characterised as much by tensions and divisions as they are by unity and common purpose. As shown in the final section of Chapter 8, the local communities explored in this research are neither homogenous nor politically cohesive. But while there is no one, authentic local articulation of place that can be called upon, there are many shared place performances (see Chapter 9).

Also, aside from these questions as to whether it would work 'socially', it is equally worth questioning the extent to which it would work 'ecologically'? There is no guarantee that the combined voices of all 'stakeholders' would articulate a project that is ecologically sustainable or resilient, being themselves socially constructed and contested terms.

A third obstacle to the achievement of a more public ecology relates to the interface between science and policy. To what extent would place-based models be useful to policy-makers? Conservation policy (as all areas of public policy) in large part depends upon generalised, standardised (and therefore necessarily simplified) knowledge. Policy-makers tend to require quick and definitive answers to questions that reflect short-term political, rather than long-term ecological perspectives. In such a utilitarian climate there is little room for the uncertain, the contextual, the subjective, and the necessarily complex. Emplaced nature is in a sense translated out for the purposes of application which relies upon the legitimacy of science in policy-making circles.

Nevertheless, in my view, the public ecology vision of a more ambitious "people-included" conservationism remains an ideal worth striving for. The obstacles to its

implementation are not such that we should abandon its vision. Indeed there are problems in implementing the conventional system as shown in this study. What distinguishes public ecology is that it attempts to devise some principles that are reflective, inclusive and fair.

How well it would 'work' ecologically depends on the visions of nature and place espoused, and what 'working' is assumed to entail. A world without (or with very limited quantities) of peatlands or particular bird species may keep on turning, evolving and changing in unpredictable ways. Yet a world decreasingly diverse, rich, colourful and interesting is probably one that many us, if given the choice, would rather not live in. Environmental questions, as Beck argues, are to a large extent questions about 'how we want to live' (Beck, 1992). Whether diversity is central to achieving more resilient (and thereby sustainable) social-ecological systems is not yet established, yet faced with so much uncertainty perhaps the most effective and fairest course of action is to adopt these more adaptive, flexible and self-reflexive models of conservationism. Ecological science should be encouraged to embrace these principles and present the complexity, subjectivity and contextuality of nature to policy-makers as a matter of social-ecological reality.

Sociology, ecology and conservation policy

Some of the difficulties that place-based solutions incur in the policy-making arena are analogous to the difficulties experienced by some forms of sociological and ecological research. In spite of the valuable insights provided by both disciplines (see Chapter 3) neither has been particularly effective in bringing these to bear on conservation policy (Norton, 1998; SoBio project on-line; Ender-Wada et al, 1998).

While this may be partly due to epistemological status and legitimacy issues in academic and policy research communities, it might also be attributable to some features of the knowledges they construct.

With regard to ecology, Norton has argued that 'features of ecological science itself have resulted in the marginalisation of ecology in policy processes' (Norton, 1998: 352). Unlike physics, for example, which is a science with a very general applicability, ecology's 'truths apply locally' such that 'it is often difficult to generalise across cases' (ibid). As we have seen, many of these 'truths' were diluted in the name of standardization under Natura 2000. As a result, some authors have questioned its usefulness as a guide to environmental policy (McIntosh, 1985; Sagoff, 1988; Peters, 1991; Shrader-Frechette and McCoy 1993). But they do not suggest that ecologists should play a lesser role in conservation issues. Because ecology's real utility is to be found in 'providing specific and localised knowledge of particular species and ecosystems', ecologists should 'abandon pronouncements based on grand theory' and 'increase their involvement in the study and management of specific conservation sites' (Norton, 1998: 352). And yet if the overarching policy framework fails to acknowledge the contextuality of nature (as happened in the Natura 2000 project) such localised knowledges may be effectively stifled from the top down: an example is found in the knowledges of locality-based self-taught experts and some conservation rangers with the NPWS. So perhaps this approach is misguided. Perhaps it is the policy-making culture that needs to be changed, as opposed to the knowledges employed to inform it.

Another obstacle to ecology's employment in policy circles arises from its 'heterogeneous origins' and 'polymorphic character' (MacIntosh, 1982: 9 cited in Robertson et al, 2003:402). Ecology embraces plant and animal ecology, marine ecology, population and community ecology, forestry, fisheries, agronomy, pest control and wildlife management. It covers marine, freshwater and terrestrial habitats involving taxonomic groups from bacteria to mammals. These can be studied at various levels (individuals, populations, ecosystems) any of which can be studied 'from various points of view – behavioural, physiological, mathematical or chemical' (Smith, 1996: 8 cited in Robertson et al, 2003: 402). As a result, policy makers may receive multiple (and often incompatible) accounts of a given ecological reality. Sometimes it is not so much a question of seeking out 'the correct account' but of there being too many correct accounts to choose from.

Norton (1998) has written extensively on what he considers to be a communication problem between ecologists, the public and policy makers. He argues that the language employed by ecologists suffers from a 'lack of terms, indicators and measures that are based in ecological science but that are also associated with important social values' (Norton 1998:356). The US wetland's policy is illustrative in this respect. Norton argues that 'the strategy of limiting evaluation to capacity and function [of wetlands] has been disastrous for policy discourse' (Norton, 1998: 356) Ecologists, he argues are not usually concerned with 'value to society' but mainly in 'the ecological functions of wetlands processes' (ibid). While they rate wetlands with criteria they purport to be purely descriptive, they 'avoid evaluative classifications that truly rank wetlands according to social value in order to avoid becoming entangled in value judgments' (ibid: 357). This has left policy makers

with no socially and ecologically informed criteria for deciding when to accept and when to reject various development proposals. Ecologists, he argues, need to acquire 'a careful understanding of the values affected by wetland alterations' (ibid). This could be achieved by participating at public forums where such social values are articulated. Such forums could then 'act as a "filter" focusing the attention of academic ecologists on dynamics that really matter to public decision-making' (ibid).

Perhaps ironically then, sociology, a discipline well-placed to grapple with this missing 'social-values' dimension, is even more marginalised in the policy process. In many instances, the 'social' has been narrowly translated into the 'economic'. According to Endter-Wada et al, 'the widespread and entrenched use of economic analysis has been the main approach to measuring values, behaviours and ecosystem interactions' (Endter-Wada et al, 1998: 898). She argues that a more wide-ranging understanding of human values is needed (ibid).

With particular regard to biodiversity research, an EU funded project was set up to explore the reasons behind the minimal amount of research carried out in the social domain as opposed to the economic domain (SoBio project, on-line). The project found that 'the more purely social dimension of the protection of biodiversity and ecosystems is still under-explored and social research is not yet sufficiently integrated in the development and implementation of biodiversity policy' (ibid). One reason for this disparity is because biodiversity policy-makers are unfamiliar with social scientific methodologies and concepts and thus unsure how and where to employ these findings in their decision-making processes.

The reasons behind sociology's minimal role in conservation policy are partly similar to those experienced by ecology (both being faced with the hegemony of 'hard' science and economics). But just as features of ecological knowledge can help explain its relegated status, certain features of sociology have been equally problematic.

As with many strands of applied ecologies certain strands of sociology (in particular a sociology of scientific knowledge) do not easily lend themselves to building generalisations and standardised solutions to problems. In a similar vein to Norton's call for ecologists to 'abandon pronouncements on grand theory' and to 'increase their involvement in the study and management of specific conservation sites' (Norton, 1998: 352) sociologists from an SSK perspective, such as Irwin, have argued a similar case for sociology. Unlike traditional sociology which sees sites and case studies as illustrative of a wider framework, a sociology of scientific knowledge approach sees them as 'key sites in themselves' (Irwin, 2001: 87). Thus 'rather than trading in broad abstractions', sociologists, he argues, should explore the 'contextualisation' of environmental claim making. This requires a more grounded or 'situated' and empirical approach (ibid: 85).

Another major obstacle to sociology's application in policy circles is that posed by the challenges of social constructionism. By maintaining that all knowledge of the environment is essentially subjective and thereby contestable, broadly constructionist sociology (such as a sociology of scientific knowledge) provides policy-makers with more questions than answers (Sutton, 2004). In fact by insisting

that there is no one 'truth' to appeal to, such an approach is sometimes considered an unhelpful obstacle to decision-making (Sutton, 2004) (see further discussion below).

We appear to be faced with a dilemma. It is through embracing the contextual complexities and subjective uncertainties inherent in our social-natural relations that new directions in sociology and ecology assist our understandings of them – and yet these same features are partly responsible for limiting their relative effectiveness in influencing policy. If they are to be communicated, compared and discussed in any forum other than the exact locale from where they originated, all forms of knowledge, whether sociological or ecological are to some degree 'translated', accumulating traces from earlier ideas, concepts, studies and so on. Once such knowledges enter into the policy-making arena, however, it seems that translations occur with a particular speed, vigor and almost ruthless disregard for context. The same principle might be applied to sociological findings regarding, for example, race and gender studies where the more nuanced findings of qualitative case studies are often by-passed in order to achieve a more applicable, simplified, quantitative explanation – one that policy-makers can more easily manage.

This dilemma is not easily resolved. Any attempt to do so would have to take the following questions into account: Can ecological (or indeed sociological) knowledge survive without the standard of authority conferred on it as a 'science'? What would happen if policy-makers embraced ecological knowledge as a value-laden, 'philosophy of inter relatedness' (Worster, 1994: 471, cited in O'Rourke, 2005)? To protect nature it is assumed that we must first know it. But to what

extent, as Wynne questions, must we know nature scientifically before we can know it morally or socially? (Wynne, 2005 speaking at SoBio conference).

Nature and society: A reflection on the sociological approaches employed

I now return to the three main sociological approaches employed in this study to reflect upon their relative usefulness to this (and other similar) studies. To what extent can they provide us with less bounded and dichotomous understandings of nature-society relations?

A SSK approach (based on the assumption that the epistemological boundary between sociology and ecology is more apparent than real) extends the sociological contribution to questions of ecosystem management beyond the public participation component and into the very heart of ecosystem science. Such an approach is not only, I would argue, epistemologically justified but is also highly constructive in policy terms. If conservation policies are to be commonly owned, less divisive and thus fairer and easier to implement they must *engage with* the cultural values of those who own, use, manage or in some way interact with the 'nature' or 'places' in question. The absence of such explicit and clearly articulated socio-cultural values within ecology has been acknowledged as a problem (Norton, 1998; McKay et al, 2000). Sociology - a discipline well-placed to explore cultural values - has perhaps a useful contribution to make in this respect.

In response to those such as Sutton, who question the usefulness of such reflexive methodologies and argue that the 'effectivity' of the natural on the social remains largely unaddressed, I make three points. First, if ecological knowledges contain

values and uncertainties, is there anything to gain from concealing them until such a point as they lead to entrenched conflicts? Revealing the inherent values underpinning environmental decision-making, as Irwin puts it, does not negate reality but rather 'brings more reality' to the issue where reality is conceptualized as the complex interplay of materialities and meanings (Irwin, 2001). Second, Sutton's point regarding the effectivity of 'nature' is based on an assumption that sociology (or indeed any one discipline) in itself can provide all the answers to a 'hybrid' scenario (Latour, 1992). Third, perhaps we are responding to different questions. While Sutton and others continue to ask 'what is nature and what is society', SSK sociologists are asking rather 'how might we (as sociologists) best understand these socially constructed divisions?'

Irwin's articulation of an SSK approach that explores the process of line drawing between the 'social' and 'natural' is one such response to this question. This approach is particularly instructive in that it does not confine its analysis to the narrow study of science (in terms of 'what scientists do'). It allows us to consider more broadly the various factors and actors playing a role in this line-drawing process on any particular issue. Nature-society line-drawing in this study happened to have a geographic (place-making) as well as a cognitive dimension but this need not always be the case. I would suggest that there are numerous areas of environmental decision-making where a line-drawing analysis might be highly instructive. It could be applied, for example, to the topic of genetically modified organisms. Within the particular area of nature conservation, this analysis of line drawing might be extended to other areas such as that between the public and the private. Natura 2000 entails a renegotiation of the boundaries between the public

and the private, as well as those of nature-society. This is an area for further research.

Because line-drawing in *Natura 2000* is ostensibly science-based, Gieryn's analysis of the cultural boundaries of science was also found instructive (Gieryn, 1999). This allowed us to explore *Natura 2000* conflicts as episodes of "boundary-work" where the rhetorical boundaries of ecological science were mapped out by all those with a stake in the issue (Gieryn, 1999). We saw how conservationists attempted to expel the state's 'questionable' and 'politically negotiated' science from the boundaries of 'real science'. In mapping out the boundaries of their own, more 'complete' and 'objective' ecological science, they also sought to expand the grasp of science to govern areas of life not previously regulated by this epistemic authority. Opponents of designation, on the other hand, relied on boundary work of their own, not least by attempting to push these boundaries back.

Gieryn's approach is more explicitly constructionist than Irwin's. Unlike Irwin's notion of 'co-construction', Gieryn does not challenge the nature-society dichotomy or seek to move beyond the realist-social construction divide. It does provide, however, a useful analytical tool for exploring the credibility of science-in-action as it emerges from each epistemic power struggle.

An ANT inspired focus on the translation of emplaced knowledge into mobile, scientific objects that achieve a certain 'placelessness' under *Natura 2000* has proven most illuminating for this study. The insight was drawn on to show how 'place' is constructed as 'habitat', increasingly translated out of context to hover

uneasily over time and space. But while I found ANT useful in terms of understanding how emplaced knowledge is translated and extended through networks, it was less useful as a means of helping us to understand how people live in the world and experience nature-society relationships *in particular dwelling places*. For this I relied heavily on a dwelling perspective.

Ingold's articulation of dwelling wherein human and non-human history are conceived in unison as part of the 'production of life' was drawn on heavily (Ingold, 1995). This approach allows us to acknowledge the creative and agential input of non-human nature without losing sight of the significance of place as an important medium through which social-ecological life necessarily unfolds (Cloeke et al, 2001). Despite the valid criticisms of some romantic articulations of dwelling (in terms of authenticity and the purity of spatially bounded relationships), a more fluid notion of dwelling (one that recognises the dynamism of place and the porosity of place boundaries), contains some highly pertinent insights. It reminds us that nature and culture are always bound together in places and that people all around the world share their 'places' with a multitude of non-human life forms who have equally carved out their own dwelling places, exerting their own distinctive influences over time. This is no less true of the urban rat or pigeon as it is the rural grouse or otter. It is through the various relationships between humans and non-humans that 'the production of life unfolds' (Ingold, 1995) - and places (in all their temporality) are endlessly made and re-made (Gieryn, 2000) as a part of this on-going performance. Following Dahlberg, therefore, I would argue that:

...the uniqueness of place [is a] fertile position from which to ask questions about the productive and co-evolving relatedness of life forms (Dahlberg 1987, cited in Campbell, 2005: 302).

Although all forms of ecological knowledge are originally place-based, ecology's quest for credibility as a 'science' has meant that purified 'nature' is decontextualised. If translating humanly inhabited 'places' into 'habitats' displaces local people, translating 'nature' into 'science' displaces nature.

As Weizsäcker explains it:

the new term 'biodiversity' has definitely lost the specificity of place, time and context and is based on a purely additive theoretical simplification. Species have become quantities instead of irreplaceable qualities (Weizsäcker 1993:124 cited in Campbell, 2005: 302).

The principle contribution of social sciences to questions of habitat management may be to remind ecological experts and policy makers of these contexts (Williams and Patterson, 1996): to remind them, in other words, of the relationality and hybridity of place (Watson, 2003). Advocates of a dwelling perspective suggest that conservation science and policy need to 're-place' nature. 'Re-placing nature' as Campbell argues, 'is a call for the 'eco-ayatollahs' (Takacs, 1996) of biodiversity protection to come back to earth and to the here and now' (2005:304).

Many renowned ecologists contend that environmental policies should support a dwelling perspective (Berkes et al. 2002). Whether within *or beyond* the boundaries of these protected areas, it is important that people who are intimately connected to the land and skilled in its care, can continue to make a living from it. For the vast majority of people whose livelihoods are no longer connected to the land, it may be important to create learning environments reconnecting them to local 'nature' and re-establishing socio-ecological relationships (Berkes et al. 2002).

The important insights gained from a dwelling perspective about the significance of perceptual skills through habitual practices, however, should not negate peoples' abilities to reflect upon these practices in more abstract terms. The local people interviewed in this study were as capable of reflecting upon their habitual practices with 'nature' as any other group. At another time and in another place they may articulate their own versions of nature-society line-drawing. In the *context* of their own *places*, however, applying this line-drawing exercise is problematic: strict nature-society boundaries become untenable. While this may be particularly the case for those whose livelihoods are more intimately connected to the land, this thesis has shown how all attempts to devise nature-society boundaries run into difficulties: there are dilemmas, ambiguities and contradictions at every turn. 'No-one yet' as Ingold argues 'has made the crossing from nature to society, or vice versa, and no-one ever will. There is no such boundary to be crossed.' (Ingold, 2005: 508).

BIBLIOGRAPHY

- Adams, David (2008): We might all yet disappear in the blink of an eye. *The Irish Times*. 25th September 2008, on-line: www.irishtimes.com (accessed 09.07.2007)
- Adams, M. W. (2003): When Nature Won't Stay Still. In W. Adams and M. Mulligan (eds), *Decolonizing Nature: Strategies for conservation in a post-colonial era*, edited by W. Adams and M. Mulligan. London: Earthscan. Pp 220-247
- Adger, W.N. (2000): Social and ecological resilience: are they related? *Progress in Human Geography* 24: 347-64
- Adger, W.N. and Luttrell, C. (2000): Property rights and the utilization of wetlands. *Ecological Economics* in press
- Agnew, J.A. (1989): The devaluation of place in social science. In *The Power of Place: Bringing Together Geographical and Sociological Imaginations*, ed. J.A. Agnew, J.S. Duncan. Boston: Unwin Hyman. Pp 9-29
- Alphandéry, Pierre and Agnes Fortier (2001): Can a territorial policy be based on science alone? The system for creating the Natura 2000 network in France. *Sociologia Ruralis* 41, 3: 311-28
- Altman, I, Low S.M., eds (1992): *Place Attachment*. New York: Plenum
- An Bord Pleanála Inspector's Report (2003): Reference PL13.130938, 4 June 2003. <http://www.pleanala.ie/documents/reports/130-R130938.pdf> (accessed 3.5.2005)
- Anderson, J.E. (1991): A conceptual framework for evaluating and quantifying naturalness. *Conservation Biology* 5: 347-352
- Angermeier, P. L. and J. R. Karr. (1994): Biological integrity versus biological diversity as policy directives. *Bioscience* 44:690-697
- Appadurai, A. (1996): *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: Univ Minn. Press
- Arber, S. (1993): Designing Samples in N. Gilbert (ed): *Researching Social Life*. London: Sage. Pp 68-92
- Alasuutari, P. (1995): *Researching Culture: Qualitative Method and Cultural Studies*. London: Sage

- Agrawal, A. & Gibson, C.C. (1999): Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development*, 27(4), 629 -649
- Beck, U. (1992): The Politics of Knowledge in the Risk Society in *Risk Society: Towards a new modernity*. Newbury Park, New Delhi: Sage
- Bell, M.M. (1994): *Childerly: Nature and Morality in a Country Village*. Chicago: Univ. Chicago Press
- Bender B. (1998): *Stonehenge: Making Space*. Oxford: Berg
- Berkes, F., Colding, J., Folke, C. (eds) (2002): *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge, United Kingdom: Cambridge University Press
- Berkes, F. (2004): Rethinking Community-Based Conservation. *Conservation Biology*. Vol 18. No. 3, pp 621-630
- Bijker, W.E., Hughes, T.P., Pinch, T. (eds.) (1987): *The Social Construction of Technological Systems*. Cambridge, MA: MIT Press
- Blondel, J. (1995): Du théorique au concret: La biologie de la conservation. *Natures, Sciences, Sociétés* 3, pp. 10-18
- Bleasdale, A. (1995): *The vegetation and ecology of the Connemara uplands, with particular reference to sheep grazing*. PhD Thesis, University College Galway
- Borden, R.J. (1993): A social scientists perspective In: McDonnell, J.M. Pickett, S.T.A. (eds.) *Humans as Components of Ecosystems: The Ecology of Subtle Human Effects and Populated Areas*. New York, Springer-Verlag, pp. 297-302
- Bodkin, B.D. (2000): *No Man's Garden: Thoreau and a New Vision of Civilisation and Nature*. Washington DC: Island Press
- Boh, T. (2004): *Shielding implementation from politicisation? Implementation of the Habitats Directive in Slovenia*. OEUE Phase II. Occasional Paper. 6.3.-08.04
- Bradshaw, G.A. and M. Bekoff. (2001): Ecology and social responsibility: the re-embodiment of science. *Trends in Ecology and Evolution*. 16:460-465
- Brechin, S. P. Wilshusen, C. Forwangler and P.C. West (2002): Reinventing a square wheel: Critique of a resurgent 'protection paradigm' in international biodiversity conservation. *Society and Natural Resources* 15(1): 17-40
- Brown, K. (2001): Beyond consensus and empowerment: sustainability in linking conservation and development. *Geography J*. In press

Brown, K.M. (2006): Common land in Western Europe: anachronism or opportunity for sustainable rural development? Paper presented at IASCP Europe Regional Meeting *Building the European Commons: from Open Fields to Open Source* Brescia, Italy, March 23-25

Bromley, D. W. (1992): The Commons, Property, and Common Property Regimes. In *Making the Commons Work: Theory, Practice, and Policy*, D. W. Bromley et al. (eds) ICS Press: San Francisco, pp 3-15

Brockington, D. (2002): *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania*. James Murray, Oxford

Bryant, R.L., Wilson, G.A. (1998): Rethinking Environmental Management. *Progress in Human Geography*, 22, 321-343

Burger, J., Field, C., Norgaard, R.B., Ostrom, E. & Policansky, D. (2001): Introduction. In Burger, J., Ostrom, E., Norgaard, R. B., Policansky, D. & Goldstein, B. D. (eds.) *Protecting the Commons: A Framework for Resource Management in the Americas*. London: Island Press

Callicot, J. B., L.B. Crowder, and K. Mumford (1999): Current normative concepts in conservation. *Conservation Biology*. 13: 22-35

Callon, M. and Latour, B. (1981): Unscrewing the Big Leviathan: How Actors Macro-structure Reality and Sociologists help them to do so. In K. Knorr-Cetina and A. Cicourel (eds), *Advances in Social Theory and Methodology: Towards an Integration of Macro and Micro Sociologies*. Boston: Routledge and Kegan Paul. pp 277:303

Callon, M. (1986): Some Elements of a Sociology of Translation. In J. Law (ed) *Power, Action, Belief*. London: Routledge. pp 19-34

Campbell, B. (2005): Changing Protection Policies and Ethnographies of Environmental Management. *Conservation and Society*, Vol 3. No 2

Canter, D. (1977): *The psychology of place*. New York: St. Martin's Press

Carolan, M.S. (2006): Conserving nature but to what end? *Organization and Environment*. Vol 19. no2. pp 153-170

Castree, N. and T. MacMillan (2001): Dissolving Dualisms: Actor-networks and the Reimagination of Nature. In N. Castree and B. Braun (eds). *Social Nature*. Oxford UK: Blackwell Publishing. pp 208-224

Catton, W. R. and Dunlap, R. E. (1978): Environmental sociology: a new paradigm. *The American Sociologist* 13. pp 41-9

Cheng, Antony S., Kruger, Linda E.; Daniels, Steven E. (2003): "Place" as an integrating concept in natural resource politics: propositions for a social science research agenda. *Society and Natural Resources*, 16: 87-104

Clark J. and J. Murdoch (1997): Local knowledge and the precarious extension of scientific networks: a reflection on three case studies. *Sociologia Ruralis*, Volume 37, No. 1. 39-59

Clerkin, Shirley and Flynn Billy (1999): *The Impact of the Planning Process on Special Areas of Conservation*. A Report by The Irish Wildlife Trust (IWT)

Clerkin, Shirley (2000): Current needs for policy to incorporate biodiversity considerations. A short communication. ESAI Biodiversity Conference. An Taisce

Clerkin, Shirley (2002): Incorporating Biodiversity Considerations in Policy. *Biology and Environment*, Vol 102b, No. 3, p 179

Cloke, Paul and Jones Owain (2001): Dwelling, place and landscape: an orchard in Somerset. *Environment and Planning A*. Vol 33, pp 649- 666

Coford Connects (2006): *The distribution of Hen Harriers in Ireland in relation to land use cover, particularly forest cover*. Ireland: Coford: National Council for Forest Research and Development

Coford Annual Report (2006). Coford on line: www.coford.ie (accessed on 19.01.2006)

Coleman J.S. (1993): The rational reconstruction of society. *Am. Sociol. Rev.* 58:1-15

Commins, P. (1990): Restructuring Agriculture in Advanced Societies: Transformation, Crisis and Responses. In T. Marsden, P. Lowe and S. Whatmore (eds) *Rural restructuring: Global Processes and Their Responses*. London: David Fulton Publishers

Commins, P. and Keane M. (1994): *Developing the Rural Economy – Problems, Programmes and Prospects in New Approaches to Rural Development*, National Economic and Social Council (NESC) Report no 97, NESC, Dublin

Cooney, R. (2005): From promise to practicalities: the precautionary principle in biodiversity conservation and natural resource management. In Cooney, R. and Dickson, B. (eds). *Biodiversity and the Precautionary Principle: Risk and Uncertainty in Conservation and Sustainable Use*. London: Earthscan. Pp 3-17

Corcoran, Mary P. (2004): Place remaking in Dublin. In M. Peillon and M.P. Corcoran (eds) *Place and non-place*. Dublin: Institute of Public Administration. Pp 142-156

Costanza, R. et al (1997): The value of the world's eco-system services and natural capital. *Nature*. 387:253-260

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Official Journal L 206, 22.7.1992. Amended by Council Directive 97/62/EC, Official Journal L 305/42

Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds. Official Journal L 103

Crag M. (1998): *Cultural Geography*. London: Routledge.

Creed, G. and B. Ching. (1997): Recognizing Rusticity: Identity and the Power of Place. In. *Knowing Your Place: Rural Identity and Cultural Hierarchy* (eds.) B. Ching and G. Creed. Routledge, London. pp 1-38.

Cresswell, T. (1996): *In Place/Out of Place: Geography, Ideology and Transgression*. Minneapolis: Univ. Minnesota Press

Crook, S. (2000): Change, uncertainty and the future of sociology. *Journal of Sociology. The Australian Sociological Association*. Vol 39(1):7-14. (TASA Conference 2000, Presidential Address)

Crowley, E. (2006): *Land Matters: Power Struggles in Rural Ireland*. Dublin; Lilliput Press

Crowley, E. (2000): *Towards Sustainable Agriculture?: A sociological analysis of the Rural Environment Protection Scheme (REPS) in the South-West of Ireland*. Thesis presented for the degree of Doctor of Philosophy. National University of Ireland, Cork

Dahlberg, K.A. (1987): Redefining development priorities: Genetic diversity and agroecodevelopment. *Conservation Biology* 1(4):311-322

Dahlman, C. J. (1980): *The Open Field System and Beyond*. Cambridge: University Press Cambridge

De Certeau, M. (1984): *The Practice of Everyday Life*. Berkley; Univ Calif. Press

Deegan, Gordan (2004): Birds of Ireland. *The Irish Times*, 9th November 2004, on-line www.irishtimes.com (accessed 12.03.2006)

De Moor, M., Shaw-Taylor, L., & Warde, P. (2002): Comparing the historical commons of north west Europe. In *The Management of Common Land in North West*

Europe, c. 1500-1850, De Moor, M., Shaw-Taylor, L., & Warde, P., (eds). Brepols: Turnhout, pp 15-31

Department of Agriculture and Food (1999): Department of Agriculture and Food, 1999. *Evaluation of the Rural Environmental Protection Scheme*. Department of Agriculture Ireland

Department of the Environment, Heritage and Local Government (DEHLG) (n.d): *Living with Nature: The Designation of Nature Conservation Sites in Ireland* <http://www.botanicgardens.ie/gspc/ireland/living.pdf> (accessed on 5.5.2005)

Department of Arts, Heritage, Gaeltacht and the Islands (2002): *National Biodiversity Plan*. Government of Ireland, Dublin

Doyle, Oran (2006): European Community Habitats Amendment Regulations 2005. *Dublin University Law Journal* 28. Pp 379-401

Doyle Oran (2005): Ireland. In Makowiak (ed) *La Mise en Place du Réseau Natura 2000*. Limoges, Pulim, Pp 213-233

Doak, S.C. and J. Kusel (1996): Well-being in forest dependent communities, Part III: a social assessment focus. In *Sierra Nevada Ecosystem Project: final report to Congress. Volume II: Assessments and scientific basis for management options*. Center for Water and Wildland Resources, University of California, Davis, California

Dunford, B., Feehan, J., (2001): Agricultural practices and natural heritage: a case study of the Burren uplands, Co. Clare. *Irish Journal of Agri-Environmental Research* 1. 19:34

Eden, S., Tunstall, S., and Tapsell, S. (2000). Translating Nature: River Restoration as Nature-Culture. *Environment and Planning D: Society and Space*, 18: 257-73

Endter-Wada, J., Blahna, D., Krannich, R., Brunson, M. (1998): A framework for understanding social science contributions to ecosystem management. *Ecological Applications*, 8 (3), 891-904

European Commission (1998): *Communication of the European Commission to the Council and to the Parliament on a European Community Biodiversity Strategy*. (COM (98) 42). Brussels

European Communities (1991): *CORINE Biotopes Manual: Habitats of the European Community (EUR 12587/3)*. Office for Official Publications of the European Communities.
<http://biodiversity-chm.eea.europa.eu/information/document/F1088156525>
(Accessed on 23.9.2008)

European Communities (1991a): *CORINE Biotypes: The design, compilation and use of an inventory of sites of major importance for nature conservation in the European Community*. European Communities Directorate-General Environment, Nuclear Safety and Civil protection, ECSC, EEC, EAEC, Brussels, Luxembourg, 1991, <http://reports.eea.eu.int/COR0-biotopes/en/biotopes.pdf> (accessed on 23.9.2008)

European Commission (2001): *Environment 2010: Our Future, Our Choice. The Sixth Environment Action Programme*, COM (2001)31 final. Brussels: Commission of the European Communities

European Commission (2001a): *Assessment of plans and projects significantly affecting Natura 2000 sites: Article 6 (3) and 6(4) of the Habitats Directive 92/43/EEC*. Luxembourg: Office for Official Publications of the European Communities

European Commission (2006): Directorate-General for Agriculture and Rural Development. *Study on environmental consequences of Sheep and Goat farming and of the Sheep and Goat premium system*. Contract n° 30-CE-0042768/00-19th July 2006

European Commission (2007): *Interpretation Manual of European Union Habitats EUR 27*. http://ec.europa.eu/environment/nature/info/pubs/paper_en.htm

European Commission (n.d): *Managing our Heritage*, Office For Official Publications of the European Communities, L-2985 Luxembourg http://ec.europa.eu/environment/nature/info/pubs/docs/nat2000/managing_heritage_en.pdf (accessed on 11.12.2005)

Feehan, John (1997): Attitudes to nature in Ireland. In Foster, John Wilson (ed) *Nature in Ireland – a Scientific and Cultural History*. Dublin: Lilliput Press

Feehily, Patricia (2003): Shoot the Bastards. *The Limerick Leader*. 8th March 2003, on-line: <http://www.limerickleader.ie/> (18.12.2005)

Feehily, Patrick (2005): Hen Harrier returns to haunt West Limerick. *The Limerick Leader*, 9th July 2005, <http://www.limerickleader.ie/> (accessed on 18.12.2005)

FEMAT (Forest Ecosystem Management Assessment Team) (1993): *Forest ecosystem management: an ecological, economic, and social assessment*. Joint publication of the United States Department of Agriculture; Forest Service; United States Department of Commerce; National Oceanic and Atmospheric Administration and National Marine Fisheries Service; United States Department of the Interior; Bureau of Land Management; Fish and Wildlife Service, and National Park Service; and United States Environmental Protection Agency, Washington D.C., USA

Fischler, F. (1997): CAP 2000 – A Framework for the Future of EU Agriculture, *Farmers Journal*, 49, 36

Fitzsimmons M. and Goodman, D.: 2001. Incorporating Nature. In B. Braun and N.Castree and (eds). *Remaking Reality, Nature at the Millennium*, Routledge, London, UK

FIE: Designations won't save Hen Harriers. FIE archives on-line
<http://friendsoftheirishenvironment.net> (accessed 10.11.2007)

FIE: Vanishing Hen Harrier. Forest Network Newsletter 177, FIE on-line
<http://friendsoftheirishenvironment.net> (accessed 10.11.2007)

Folke, C., C.S. Holling and C. Perrings. (1996): Biological diversity, ecosystems and the human scale. *Ecological Applications* 6: 1018-1024

Foss, P. and O'Connell, C. (1997): Bogland Study and Utilisation. In: Foster, John Wilson (ed) *Nature in Ireland – a Scientific and Cultural History*. Dublin: Lilliput Press

Forás Forbartha (1981): *Areas of scientific interest in Ireland*. Dublin. An Forás Forbartha

Freudenberg, W.R. (1992): Addictive economies: extractive industries and vulnerable localities in a changing world economy. *Rural Sociology* 57, 305-32

Funtowicz, S.O. and J. R. Ravetz. (1995): Science for the post-normal age. In L. Westra and J. Lemons (eds). *Perspectives on Ecological Integrity*. Dordrecht, The Netherlands, Kluwer Academic Publishers. Pp 146-161

Gbadegesin, A. and O. Ayileka (2000): Avoiding the mistakes of the past: towards a community orientated management strategy for the proposed national park in Abuja-Nigeria. *Land Use Policy* 17:89-100

Gee, D. (1997): Economic task reform in Europe: opportunities and obstacles. In T. O'Riordan (ed.) *Ecotaxation*, pp.81-106. London: Earthscan

Gibbons, M. et al (1994): *The New Production of Knowledge: the Dynamics of Science and Research in Contemporary Societies*, London: Sage

Giddens, A. (1990): *Consequences of Modernity*. Stanford, CA: Stanford Univ. Press

Gieryn, Thomas F. (2000): A Space for Place in Sociology. *Annual Review of Sociology*. 26: 463-96

Gieryn, Thomas F. (1999): *Cultural Boundaries of Science: Credibility on the Line*. Chicago: University of Chicago Press

Goldman, M. and R.A. Schurman (2000): Closing the 'Great Divide': New Social Theory on Society and Nature. *Annual Review of Sociology*. 26:563-84

Goodman, D. (2002): Rethinking food production-consumption: Integrative perspectives. *Sociologia Ruralis* 42 (4):271-277

Green, S. F. (2005): From Hostile Backwater to Natural Wilderness: on the relocation of 'Nature' in Epirus, Northwestern Greece. *Conservation and Society*, Vol 3, no 2: 436-460

Grist Bearn (1997): Wildlife Legislation – The Rocky Road to Special Areas of Conservation Surveyed. *Irish Planning and Environmental Law Journal* Vol 4, No 3: 87-95.

Gupta, A. (1998): *Postcolonial Developments*. Duke University Press, Durham

Halahan Rebecca & Rebecca May (2003): *Favourable conservation status to the heart of EU wildlife legislation*. WWF on-line: www.wwf.org.uk/filelibrary/pdf/favconsstatus.pdf (accessed on 10.08.2007)

Hannigan, John (1995): Biodiversity loss the successful career of a global environmental problem. In *Environmental Sociology: A Social Constructionist Perspective*. London Routledge

Hardin, G. (1968): The Tragedy of the Commons. *Science*, 162, 1243-1248

Harvey, D. (1996): *Justice, Nature and the Geography of Difference*. Oxford: Blackwell

Hedges, B.M. (1979): Sampling Minority Populations. In M. Wilson (ed). *Social and Education Research in Action*. London: Longmann. Pp. 244-61

Hennen, L. (1999): Participatory technology assessment: a response to technical modernity? *Sci. Public Policy*. 26 (5), 303-312

Herndl, C., Brown, S. (eds). (1996): *Green Culture: Environmental Rhetoric in Contemporary America*. The University of Wisconsin Press, Madison, USA

Herlihy, Maria (2006): Windmills are a nightmare. *The Corkman*. 11 April 2006

Hetherington, K. (1997): In Place of Geometry: The Materiality of Place. In K. Hetherington and R. Munro (eds). *Ideas of Difference: Social Spaces and the Labour of Division*, Oxford: Blackwell, 183-199

- Hiedanpää, J. (2002): European-wide conservation versus local well-being: the reception of the Natura 2000 Reserve Network in Karvia, SW-Finland. *Landscape and Urban Planning* 61, 113-123.
- Holling, C.S., ed. (1978): *Adaptive environmental assessment and management*. London, Wiley.
- Hull, R.B., Richert, D., Seekamp, E., Robertson, D., Buhyoff, G.J. (2003): Understandings of Environmental Quality: Ambiguities and Values Held by Environmental Professionals. *Environmental Management*. Vol 31, No 1, pp. 1-13.
- Hunter, M. (1996): Benchmarks for managing ecosystems: are human activities natural? *Conservation Biology* 10:695-697)
- Hunter, M.L. (2000): Refining normative concepts in conservation. *Conservation Biology*. 14:575-574.
- Ibarra, Peter R. and John I. Kitsuse (1993): Vernacular constituents of moral discourse: an interactionist proposal for the study of social problems. In J. Holstein and G. Miller (eds.) *Reconsidering Social Constructionism: Debates in Social Problems Theory*, New York: Aldine de Gruyter. pp.25-58
- Ingold, T. (1993): The Temporality of the Landscape. *World Archaeology* 25 (2): 152-74.
- Ingold, T. (1995): Building, Dwelling, Living. How Animals and People Make Themselves at Home in the World. In M. Strathern (ed.), *Shifting Contexts. Transformations in Anthropological Knowledge*, London: Routledge: 57-80
- Ingold, T. (2000): *The perception of the environment: essays on livelihood, dwelling and skill*. Routledge, London
- Ingold T. (2005): Epilogue: Towards a Politics of Dwelling. *Conservation and Society*, Vol 3. No 2. December 2005
- Irwin, A. (1995): Citizen Science: A Study of People, Expertise and Democracy in the Biosciences. *Public Understandings of Science*. 10, 1-18
- Irwin, A. (2001): *Sociology and the Environment. A critical introduction to Society, Nature and Knowledge*. Cambridge: Polity Press
- Jasanoff, S., Colwell R., Dresselhaus S. et al. (1997): Conservations with the community: AAAS at the millennium. *Science* 278:2066-7

Jordan, A. (2001): The European Union: an evolving system of multi-level governance or government? *Policy and Politics* 29 (2): 193-208

Kates, R.W. et al. (2001): *Sustainability Science*. Science. 292:641-642

Katz, C. (1998): Whose nature, whose culture? Private productions of space and the "preservation" of nature. In *Remaking Reality: Nature at the Millennium*. Castree, N., Braun, B. (eds). London: Routledge

Kelsey, Elin (2003): Integrating Multiple Knowledge Systems into Environmental Decision-making: Two Case Studies of Participatory Biodiversity Initiatives in Canada and their Implications for Conceptions of Education and Public Involvement. *Environmental Values*, Volume 12, Number 3. pp. 381-396

Kloppenborg, Jack (1991): Social Theory and the De/Reconstruction of Agricultural Science: Local Knowledge for an Alternative Agriculture. *Rural Sociology* Vol 56. No4, pp. 519-548

Lafferty, S., P. Commins and J.A. Walsh (1999): *Irish Agriculture in Transition: A Census Atlas of Agriculture in the Republic of Ireland*. Teagasc

Laffan, Brigid and O'Mahoney, J. (2004): *Mis-fit. Politicisation and Europeanisation. The Implementation of the Habitats Directive*. Organisation for EU Enlargement. Phase II Occasional Paper. 1.3. - 08.04. Dublin European Institute, University College Dublin.

Laffan Brigid (2004a): *Bears, Birds and Bogs - EU Nature Conservation in 6 States*. Dublin European Institute, University College Dublin, Dublin 4

Latour, B. (1992): *We Have Never Been Modern*. London: Harvester Wheatsheaf

Latour, B. (1987): *Science in Action: How To Follow Scientists and Engineers through Society*, Cambridge Mass: Harvard University Press

Latour, B. (1995): The Pédofil of Boa Vista: A Photo-Philosophical Montage. Translated by Bart Simon and Katia Verresen. *Common Knowledge*. Vol 4, pp. 144-87

Laurier, E. and Philo, C. (1999): X-morphizing: A Review Essay or Aramis. *Environment and Planning A*, 31:1047-73

Ledoux L., Crooks, S., Jordan A., Turner, R. (2003): *Implementing EU Biodiversity Policy: a UK Case Study*. CSERGE Working Paper, GEC 2000-03. http://www.uea.ac.uk/env/cserge/pub/wp/gec/gec_2000_03.htm (accessed 2.09.2005)

Lee, N. and Brown, S. (1994). Otherness and the Actor-Network. *American Behavioural Scientist*, 37:762-90

- Lele, S., Norgaard, R.B., (1996): Sustainability and the scientist's burden. *Conservation Biology*. 10, 354-365
- Lenihan, C. (2005): Developments in relation to protected areas. Paper presented at Law and the Environment 2005. University College Cork, Faculty of Law <http://www.ucc.ie/law/events/environ05papers/linehan.doc> (accessed 8.02.2006)
- Levin, S.A. (1999): *Fragile Dominion: complexity and the commons*. New York, USA, Perseus
- Lockhart, N., Madden, B., Wolfe-Murphy, S., Wymer, E. and Wyse Jackson, M. (1993): *National ASI survey: guidelines for ecologists*. Unpublished report to the National Parks and Wildlife Service, Office of Public Works, Dublin
- Lucey, Anne (2003): Fears of bird defence over local economy. *The Irish Times*, 17th March 2003, on-line: www.irishtimes.com (accessed 14.1.2006)
- Lucey Anne (2005): Hen Harrier to get 80,000 acres of protected habitat. *The Irish Times*, 29th July 2005, on-line: www.irishtimes.com (accessed 14.1.2006)
- Ludwig, D. (2001): The era of management is over. *Ecosystems*. 4:758-764
- Lucey, J. and Doris, Y. (2001): *Biodiversity in Ireland. A Review of Habitats and Species*. Environmental Protection Agency, Wexford
- Lynch, M., Bogen, D. (1997): Sociology's asociological "core": an examination of textbook sociology in light of the sociology of scientific knowledge. *American Sociological Review*. Vol 62:481-493
- MacConnell, Sean (2003): Dillon 'does not condone' bird's killing. *The Irish Times*. 20th May 2003, on-line: www.irishtimes.com (accessed 14.1.2006)
- Macnaghtan, P. and Urry, J. (1998): *Contested Natures*, London: Sage
- Massey, D. (1995): The Contestation of Place. In D. Massey and P. Jess (eds). *A Place in the World*. New York: Oxford University Press Inc. pp 133-175
- McCay, B. J. & Acheson, J. M. (1987): Human Ecology of the Commons. In *Question of the Commons: The Culture and Ecology of Communal Resources*, McCay B. J. & Acheson, J. M., (eds.), University of Arizona Press, Tucson, 1-34
- McDonagh J. (n.d.): *Managing Ireland's Landscape: an interdisciplinary study on the changing role of 'commonage' in Co. Galway*. National University of Ireland (NUI) Galway, on-line: <http://www.nuigalway.ie/geography/commonage/commonage.html> (accessed 3.9.2006)

McHenry, H. (1997): Wild flowers in the wrong field are weeds! Examining farmers' constructions of conservation. *Environment and Planning A*, Vol 29. 1039-1053

McIntosh, R.P. (1985): *The background of ecology: concept and theory*. Cambridge, UK: Cambridge University Press

McKay, James & Regier, Henry (2000): Uncertainty, complexity and ecological integrity: insights from an Ecosystems Approach. In P. Crabbé, A Holland, L. Ryszkowski and L. Westra (eds), *Implementing Ecological Integrity: Restoring Regional and Global Environmental and Human Health*, Kluwer, NATO Science Series, Environmental Security. Pp 121-156 Environment & Resource Studies

McKean M. A. (1992): Success on the Commons: A Comparative Examination of Institutions for Common Property Resource Management. *Journal of Theoretical Politics*, 4(3), 247-281

McKenzie, D. (1990): *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*. Cambridge, MA: MIT Press

McNally Liam (2001): Group seeks legal advice over Brussels Conservation Directive. *The Irish Times*. 31st June 2001, on-line: www.irishtimes.com (accessed 14.1.2006)

Moote, M., McClaran, M. Chickering, D. (1997): Theory in practice: applying participatory democracy theory to public land planning. *Environmental Management*, 21 (6), 877-889

Moyle, P. B. (1989): Message from the president. *Newsletter of the Introduced Fish Section, American Fisheries Society* 9:1-2

Murdoch J. (1997): Inhuman/nonhuman/human: actor network theory and the potential for a non-dualistic and symmetrical perspective on nature and society. *Environment and Planning D: Society and Space* 15 731-756

National, Parks and Wildlife Service (NPWS). (1989): *Index to areas of scientific interest*. Unpublished report to the National Parks and Wildlife Service, Office of Public Works, Dublin

National, Parks and Wildlife Service (NPWS) (2005): *Owenduff/Nephin Complex cSAC & SPA, Site Codes 534 & 4098 Co Mayo*. National Parks and Wildlife Service, Dublin, Ireland.

Newby, H. (1991): One world: two cultures: sociology and the environment, BSA Bulletin. *Network* 50, pp. 1-8

- Norton, B. G. (1998): Improving Ecological Communication: The Role of Ecologists in Environmental Policy Formation. *Ecological Applications*. Vol 8. No 2: 350-364
- Norriss, D.W., Marsh, J. McMahon, D. and Oliver, G.A. (2002): *A National Survey of Breeding Hen Harriers Circus Cyaneus in Ireland 1998-2000*. *Irish Birds* 7, 1-10
- North, D. C. & Thomas, T. H. (1973): *The Rise of the Western World: A New Economic History* Cambridge: University Press Cambridge.
- Noss, R. (Ed.) (1994): Special Section, Conservation Biology, Values and Advocacy. *Conservation Biology*. 10 (3), 904-920
- O'Críodáin, Colmán (2002): Incorporation of Biodiversity Protection into the work of Dúchas – The Heritage Service. *Biology And Environment: Proceedings Of The Royal Irish Academy*, Vol. 102b, No. 3, pp189–192
- O'Connor, J. (1994): Is Sustainable Capitalism Possible? In *Is Capitalism Sustainable? Political Economy and the Politics of Ecology*, (ed) M. O'Connor, Guilford, New York. Pp 152-175.
- O'Connell, C. (1987): *The IPPC Guide to Irish Peatlands*. Dublin: Irish Peatlands Protection Council
- Odum, E. P. (1968): Historical review of the concepts of energy in eco-systems. *American Zoologist* 8:11-18.
- O'Loughlin, V. (1987): *Commonage and Agricultural Development in West Mayo*. National University of Ireland Galway, Galway.
- O'Neill, J. (2001): Property, Care, Environment in *Environment and Planning C* 19, 695-711.
- O'Neill P, Whatmore S. (2000): The business of place: networks of property, partnership and produce. *Geoforum* 31 121-136
- O'Riordan, Tim, Jenny Fairbrass, Martin Welp, Susanne Stoll-Kleeman (2002): The Politics of Biodiversity in Europe. In Tim O'Riordan and Susanne Stoll-Kleeman (eds.), *Biodiversity, Sustainability and Human Communities: Protecting Beyond the Protected* Cambridge: Cambridge University Press pp 115-141
- O'Riordan, Tim (2002): Protecting Beyond the Protected. In Tim O'Riordan and Susanne Stoll-Kleeman (eds.) *Biodiversity, Sustainability and Human Communities: Protecting Beyond the Protected* Cambridge: Cambridge University Press. Pp 3- 29
- O'Rourke, E. (2005): Socio-natural interaction and landscape dynamics in the Burren, Ireland. *Landscape and Urban Planning*. Vol 70. 69-83

Ostrom, E. (1990): *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: University Press Cambridge

Ostrom, E. et al. (2002): *The Drama of the Commons*. Washington, DC: National Academy Press.

O'Sullivan, Kevin (2000): Trust report criticises planning process in conservation areas. *The Irish Times*, 16 February 2000, on-line: www.irishtimes.com (accessed 14.1.2006)

Owens, S. E. (2000): "Engaging the public": information and deliberation in environmental policy. *Environment and Planning A*, 32, 7: 1141-8.

Parc Interregional du Marais Poitevin (2003): 73rd Eurosite Workshop report, Natura 2000 Conflict Management and Resolution http://www.eurosite-nature.org/IMG/pdf/73_conflict_pt01.pdf (accessed 11.07.2005)

Parizeau, M.H. (1997): Biodiversité et représentation du monde: enjeux éthiques. Pp115-136 in M.H. Parizeau (ed). *La Biodiversité: tout conserver ou tout exploiter*. Bruxelles

Percival, S.M (2003): *Birds And Wind Farms In Ireland: A Review Of Potential Issues And Impact Assessment*. Ecology Consulting.

Peters, R.H. (1991): *A Critique for Ecology*. Cambridge: Cambridge University Press.

Peuhkuri, T. (2002): Knowledge and interpretation in environmental conflict: fish farming and eutrophication in the Archipelago Sea, SW Finland. *Landscape and urban planning*. Vol 61. Issues 2-4. Pp 157-168

Pile, S. Keith M. eds. (1997). *Geographies of Resistance*. New York: Routledge.

Pinton, Florence (2001): Conservation of biodiversity as a European Directive: the Challenge for France. *Sociologia Ruralis* 41, 3: 329-42

Pretty J.N. and H. Ward (2001): Social Capital and the Environment. *World Development*. 29:209-227

Pretty, Jules and D. Smith (2003): Social Capital in Biodiversity Conservation and Management. *Conservation Biology*. Vol 18. No3. pp 631-638

Pretty, Jules (2002): People, livelihoods and collective action in biodiversity management. In T. O'Riordan and S. Stoll-Kleeman (eds.), *Biodiversity, Sustainability and Human Communities*. Cambridge: Cambridge University Press.

- Pickett, S.T.A. and R.S. Ostfeld. (1995): The shifting paradigm in ecology. In R. L. Knight and S. F. Bates, (eds), *A new century for natural resources management*. Washington D.C., Island Press. Pp 261-277
- Pickett, S.T.A., (1997): A conceptual framework for the study of human ecosystems in urban areas. *Urban Ecosystems*. 1, 185-199
- Redclift, M. and Benton, T. (eds) (1994): *Social theory and the global environment*. London and New York: Routledge
- Renn, O., Webler, T., Wiedermann, P., (1995): *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse*. Dordrecht, The Netherlands: Kluwer Academic Publishers
- Relph, E. (1976): *Place and Placelessness*. London: Pion
- Resilience Alliance (2002): www.resalliance.org/programdescription (accessed 14.01.2007)
- Robertson, D.P, Hull, R.B. (2001): Beyond biology: towards a more public ecology for conservation. *Conservation Biology*. Vol 15 (4) pp 970-979
- Robertson, D.P, Hull, R.B. (2003): Public ecology: an environmental science and policy for global society. *Environmental Science and Policy*. Vol 6 pp 399-410
- Roebuck, P., Phifer, P. (1999): The persistence of positivism in conservation biology. *Conservation Biology*. 13 (2) 444-446
- Rolston, H. (1991): The wilderness idea reaffirmed. *Environmental Professional* 13:370-377
- RTE on-line (2004): www.rte.ie/news/2004/0819/morningireland aired on 19 August 2004 (accessed 14.10.2006)
- Sack, R. D. (1992): *place, modernity, and the consumer's world: A relational framework for geographical analysis*. Baltimore, MD: Johns Hopkins University Press
- Sagoff, M. (1988): Ethics, ecology and the environment: integrating science and the law. *Tennessee Law Review*. 56: 77-229
- Scannell Yvonne, Cannon Robert, Clarke Martin, Doyle Oran (1999): *The Habitats Directive in Ireland*. Centre for Environmental Law and Policy: Trinity
- Schouten, M.G.C., (1994): Nature conservation in Ireland: a critical decade. *Biology and Environment: Proceedings of the Royal Irish Academy* 94B, 91-95.

- Schrader-Frechette, K. S. and E.D. McCoy. (1993): *Method in ecology: strategies for conservation*. Cambridge, UK: Cambridge University Press
- Schrader-Frechette, K.S. (1995): Hard ecology, soft ecology and ecosystem integrity. In L. Westra and J. Lemons, (eds.). *Perspectives on ecological integrity*. Dordrecht, The Netherlands: Kluwer Academic Publishers. Pp125-145
- Scoones, L. (1999): New ecology and the social sciences: what prospects for fruitful engagement? *Annual Review of Anthropology* 28:479-507
- Scott James, C. (1985): *Weapons of the Weak: Everyday Forms of Peasant Resistance*: Yale University Press
- Seamon, D. (1996): A singular impact: Edward Relph's Place and Placelessness, *Environmental and Architectural Phenomenology Newsletter*, 7, pp. 58
- Shannon, M.A., Antypas, A.R. (1997): Open Institutions: uncertainty and ambiguity in 21st century forestry. In: Kohm, K.A. Franklin, J.F. (eds), *Creating a Forestry for the 21st century: The science of ecosystem management*. Washington DC: Island Press, pp 437-446
- Siggins, L. (1998): Farmers fear they are losing out to conservation. *The Irish Times*. 9th February 1998, on-line: www.irishtimes.com (accessed 14.1.2006)
- Siggins, Lorna (1999): Conservation decisions spark controversy. *The Irish Times*, 22nd March 1999, on-line: www.irishtimes.com (accessed 14.1.2006)
- Silverman, D. (2000): *Doing Qualitative Research. A Practical Handbook*. London: Sage Publications
- Smith, Paddy (2004): Two organisations at Loggerheads Over Bogs Deal. *The Irish Independent*, 3rd August 2004: on-line: www.independent.ie (accessed 10.2.2006)
- Smith, R. (1996): *Ecology and Field Biology*. New York: Harper Collins
- SoBio project website: <http://www.ecnc.nl/doc/projects/sobio/index.html> (accessed 19.06.2006)
- Society for Ecological Restoration. (1997): *Strategic plan for the Society for Ecological Restoration*. Society for Ecological Restoration. Madison, Wisconsin
- Song, S.J., M'Gonigle, R.M. (2001): Science, power and system dynamics: the political economy of conservation biology. *Conservation Biology*. 15 (4). 980-989

- Sorkin, M. (1999): Introduction: Traffic in Democracy. In *Giving Ground: The Politics of Proximity*, ed J. Copjec, M. Sorkin, pp. 1-15, New York: Verso
- Sprin, A.W. (1998): *The language of landscape*. Yale University Press: New Haven
- Stevenson, G. G. (1991): *Common Property Economics: A General Theory and Land Use Applications*. Cambridge: University Press Cambridge
- Stoll-Kleeman, S. (2001): Opposition to the Designation of Protected Areas in Germany. *Journal of Environmental Planning and Management*. 44, 111-130
- Stoll-Kleeman, S. (2001a): Reconciling opposition to protected areas management in Europe: the German experience. *Environment* 43 (5): 32-43
- Stoll-Kleeman, S. and T. O'Riordan (2002): From Participation to Partnership in Biodiversity Protection: Experience from Germany and South Africa. *Society and Natural Resources*, 15:161-177
- Sutton, P.W. (2004): *Nature, Environment and Society*, New York: Palgrave MacMillan
- Symes, D. (1992): Agriculture, the State and Rural Society in Europe: Trends and Issues. *Sociologia Ruralis*, 32, 2-3. 193-208
- Takacs, D. (1996): *The Idea of Biodiversity*. Baltimore: John Hopkins
- Thomas, J.W. (1995): *Engaging people in communities of interest*. The 1995 C. Eugene Farnsworth Memorial Seminar. New York Centre Forestry Research and Development. SUNY College of Environmental Science and Forestry, Syracuse, New York, USA
- Thrift, N. (1996): *Spatial Formations*, London: Sage
- Thrift, N. (1999): Steps to an Ecology of Place. In D. Massey, J. Allen and P. Sarre (eds) *Human Geography Today*, Cambridge: Polity Press. Pp 295-323
- Tovey, Hilary (1994): Rural Management, Public Discourses and the Farmer as Environmental Actor. In D. Symes & A.J. Jansen (eds.), *Agricultural Restructuring and Rural Change in Europe*. Wageningen
- Tovey, Hilary (1997): Food, Environmentalism and Rural Sociology: On the Organic Movement in Ireland. *Sociologia Ruralis* Vol 37. No1.21-37
- Tovey, Hilary & P. Share (2003): *A sociology of Ireland*. 2ed. Dublin: Gill & Macmillan

Turner, R.K., Lorenzoni I., Beaumont, N., Bateman, I.J., Langford I.H., McDonald, A.I., (1998): Coastal management for sustainable development: analysing environmental and socio-economic changes on the UK coast. *The Geographical Journal* 164 (3): 269-281.

UNEP (1992): *Convention on Biological Diversity*. United Nations Environmental Programme, Nairobi.

Urry, John (1995): *The Tourist Gaze and the Environment*. In *Consuming Places* London & New York: Routledge.

Van Oudheusden, R. (2005): *The CORINE Biotopes project. Alive and Kicking*. NWS-I-2005-5. Utrecht University.
<http://www.chem.uu.nl/nws/www/publica/l2005-5.pdf> (accessed 10.12.2007)

Van Schaik, C. and R. Kramer. (1997): Towards a new protection paradigm. In *Last Stand: Protected areas and the defence of tropical biodiversity*, (ed.) R. Kramer, C. van Schaik, and J. Johnson, New York: Oxford University Press. Pp 212-230

Viney, Micheal (2003): Wind power and the plight of the hen harrier. *The Irish Times*, 22 February 2003, on-line: www.irishtimes.com (accessed on 14.1.2006)

Visser Marjolein, Moran James, Regan Eugenie, Gormally Mike, Skeffington Sheehy Micheline (2006): The Irish Agri-environment: How Turlough Users and Non-users view converging EU Agendas of Natura 2000 and CAP. *Land Use Policy*.

Walker, G.B. and S.E. Daniels (1996): The Clinton Administration, The Northwest forest conference and managing conflict: when talk and structure collide. *Society and Natural Resources* 9:77-91

Walters, C.J. (1986): *Adaptive management of renewable resources*. New York: MacMillan

Walters, C.J. and C.S. Holling. (1990): Large-scale management experiments and learning by doing. *Ecology*, 71:2060-2068

Walters, J.S.(1994): Coastal common property regimes in southeast Asia. In Borgese, E.M., Ginsburg,N. and Morgan, J.R., (eds) *Ocean yearbook 11*. Chicago, IL: University of Chicago Press, 304-27

Waterton, C. (2002): From Field to Fantasy: Classifying Nature. *Constructing Europe, Social Studies of Science*, 32(2): 177-204

Watson, M., (2003): Performing Place in Nature Reserves. In B. Szerszynski, W. Heim and C. Waterton (eds.) *Nature Performed: Environment, Culture and Performance*, Blackwell: Oxford, pp 145-160

Watt, A. et al, (2003): *Conflicts between human activities and the conservation of biodiversity in agricultural landscapes, grasslands, forests, wetlands and uplands in Europe*. Niemela", J. and Young, J. (eds), A report on the BIOFORUM project. Project EVK2-CT-1999-2006

Weber, M. (1962): *Basic Concepts in Sociology*. Translated from the German by H.P.Secher. London: Owen

Weizsäcker, V. C. (1993): Competing Notions of Biodiversity. In *Global Ecology: A New Arena of Political Conflict*. W. Sachs (ed), London; Zed Books. pp. 117-131

Wells, M. and K. Brandon. (1992): *People and Parks: Linking protected area management with local communities*. Washington, DC. International Bank for Reconstruction and Development, World Bank

Westman, W.E. (1990): Park management of exotic species: problems and issues. *Conservation Biology* 6:18-23

Whatmore S. (1999): Hybrid Geographies: rethinking the 'human' in human geography. In *Human Geography Today* (eds.) D. Massey, J. Allen, P. Sarre. Cambridge: Polity Press. pp 22-40

Whelan, K. (1997): *The Atlas of the Irish Rural Landscape*. Cork: Cork University Press

Williams, D. R., M. E. Patterson, J. W. Roggenbuck, and A. E. Watson. (1992): Beyond the commodity metaphor: Examining emotional and symbolic attachment to place. *Leisure Sci.* 14:29-46

Williams, D. R., and M. E. Patterson (1996): Environmental meaning and ecosystem management: Perspectives from environmental psychology and human geography. *Society Nat. Resources* 9:507-521

World Commission on Environment and Development (WCED) (1987): *Our Common Future* (The Bruntland Report). Oxford and New York: Oxford University Press

Worster, D. (1994): *Nature's economy: a history of ecological ideas*. New York: Cambridge University Press.

WWF (1999): *Natura 2000: Opportunity and Obstacles*. WWF Austria. Vienna <http://assets.panda.org/downloads/opportunitiesobstacles.pdf> (accessed 22.06.2005)

WWF (2002): *Promoting the Socio-Economic Benefits of Natura 2000*. Background Report for the European Conference on Promoting the Socio-Economic Benefits of Natura 2000, Brussels, 28–29 November 2002

Wynne, B (1992): Misunderstood misunderstandings: social identities in public uptake of science. *Public Understandings of Science* 1:281-304

Wynne, B. (1996): May the sheep safely graze? A reflexive view of the expert-lay knowledge divide. In Lash, S. Szerszynski, B, Wynne, B (eds.), *Risk, Environment and Modernity. Towards a New Ecology*. London: Sage

Wynne, B. (2008). Elephants in the room where publics encounter "science": A Response to Darrin Durant, Accounting for expertise: Wynne and the autonomy of the lay public. *Public Understanding of Science* 17; 21

Yearley, S. (1991): *The Green Case: a sociology of environmental issues, arguments and politics*. London: Harper Collins

Yearley, S. (2000): Making systematic of public discontents with expert knowledge: two analytical approaches and a case study. *Public Understanding Science* 9:105-122

Yelling, J. A. (1997): *Common Field and Enclosure in England 1450-1850*. London: Macmillan

On-line Sources Consulted

Governmental Debates

Dáil Eireann Adjournment Debate on 9 April 2003
(accessed 15.04.2005)

Joint Committee on Environ. & Local Government on 5 March 2003
(accessed 15.04. 2005)

Joint Committee on Environ. & Local Government on 2 April 2003
(accessed 15.04. 2005)

Dáil Eireann Volume 561. Adjournment Debate on 11 February 2003
(accessed 15.04. 2005)

Dáil Eireann Volume 564 on 1 April 2003
(accessed 15.04. 2005)

Dáil Eireann, Volume 561 on 19th February 2003
(accessed 16.04.2005)

On-line at <http://debates.oireachtas.ie>

National Media

<http://www.irishtimes.com/>

<http://www.independent.ie/>

<http://www.farmersjournal.ie>

<http://www.rte.ie>

Regional newspapers

<http://www.kerryman.ie/>
<http://www.limerickleader.ie/>
<http://www.westernpeople.ie/>
<http://www.corkman.ie/>

Global/EU Level

<http://www.cbd.int/>
http://ec.europa.eu/environment/nature/index_en.htm
<http://www.iucn.org/>
<http://www.biodiversityresearch.ie/>
<http://curia.europa.eu>

National and Regional Level

<http://www.npws.ie/en/>
<http://www.birdwatchireland.ie/>
<http://www.antisce.org/>
<http://www.iwt.ie/>
<http://friendsoftheirishenvironment.net/>
<http://www.teagasc.ie/>
<http://www.ifa.ie/>
<http://www.icmsa.ie/>
<http://www.coillte.ie/>
<http://www.ipcc.ie>
<http://www.agriculture.gov.ie/>
<http://www.coford.ie>
<http://www.environ.ie/en/>
<http://www.pleanala.ie/>
<http://www.mayococo.ie/en/>
<http://www.kerrycoco.ie/>
<http://www.lcc.ie>
<http://www.corkcoco.ie>
<http://www.ballycroynationalpark.ie/>
<http://towns.mayo-ireland.ie>

APPENDIX I

II

(Acts whose publication is not obligatory)

COUNCIL



COUNCIL DIRECTIVE 92/43/EEC

of 21 May 1992

on the conservation of natural habitats and of wild fauna and flora

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130s thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

Having regard to the opinion of the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas the preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and of wild fauna and flora, are an essential objective of general interest pursued by the Community, as stated in Article 130r of the Treaty;

Whereas the European Community policy and action programme for the environment (1987 to 1992) ⁽⁴⁾ makes provision for measures regarding the conservation of nature and natural resources;

Whereas, the main aim of this Directive being to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements, this Directive makes a contribution to the general objective of sustainable development; whereas the maintenance of such biodiversity may in certain cases require the maintenance, or indeed the encouragement, of human activities;

Whereas, in the European territory of the Member States, natural habitats are continuing to deteriorate and an increasing number of wild species are seriously threatened; whereas given that the threatened habitats and species form part of the Community's natural heritage and the threats to them are often of a transboundary nature, it is necessary to take measures at Community level in order to conserve them;

Whereas, in view of the threats to certain types of natural habitat and certain species, it is necessary to define them as having priority in order to favour the early implementation of measures to conserve them;

Whereas, in order to ensure the restoration or maintenance of natural habitats and species of Community interest at a favourable conservation status, it is necessary to designate special areas of conservation in order to create a coherent European ecological network according to a specified timetable;

Whereas all the areas designated, including those classified now or in the future as special protection areas pursuant to Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds ⁽⁵⁾, will have to be incorporated into the coherent European ecological network;

Whereas it is appropriate, in each area designated, to implement the necessary measures having regard to the conservation objectives pursued;

Whereas sites eligible for designation as special areas of conservation are proposed by the Member States but whereas

⁽¹⁾ OJ No C 247, 21. 9. 1988, p. 3 and OJ No C 195, 3. 8. 1990, p. 1.

⁽²⁾ OJ No C 75, 20. 3. 1991, p. 12.

⁽³⁾ OJ No C 31, 6. 2. 1991, p. 25.

⁽⁴⁾ OJ No C 328, 7. 12. 1987, p. 1.

⁽⁵⁾ OJ No L 103, 25. 4. 1979, p. 1. Directive as last amended by Directive 91/244/ECC (OJ No L 115, 8. 5. 1991, p. 41).

a procedure must nevertheless be laid down to allow the designation in exceptional cases of a site which has not been proposed by a Member State but which the Community considers essential for either the maintenance or the survival of a priority natural habitat type or a priority species;

Whereas an appropriate assessment must be made of any plan or programme likely to have a significant effect on the conservation objectives of a site which has been designated or is designated in future;

Whereas it is recognized that the adoption of measures intended to promote the conservation of priority natural habitats and priority species of Community interest is a common responsibility of all Member States; whereas this may, however, impose an excessive financial burden on certain Member States given, on the one hand, the uneven distribution of such habitats and species throughout the Community and, on the other hand, the fact that the 'polluter pays' principle can have only limited application in the special case of nature conservation;

Whereas it is therefore agreed that, in this exceptional case, a contribution by means of Community co-financing should be provided for within the limits of the resources made available under the Community's decisions;

Whereas land-use planning and development policies should encourage the management of features of the landscape which are of major importance for wild fauna and flora;

Whereas a system should be set up for surveillance of the conservation status of the natural habitats and species covered by this Directive;

Whereas a general system of protection is required for certain species of flora and fauna to complement Directive 79/409/EEC; whereas provision should be made for management measures for certain species, if their conservation status so warrants, including the prohibition of certain means of capture or killing, whilst providing for the possibility of derogations on certain conditions;

Whereas, with the aim of ensuring that the implementation of this Directive is monitored, the Commission will periodically prepare a composite report based, *inter alia*, on the information sent to it by the Member States regarding the application of national provisions adopted under this Directive;

Whereas the improvement of scientific and technical knowledge is essential for the implementation of this Directive; whereas it is consequently appropriate to encourage the necessary research and scientific work;

Whereas technical and scientific progress mean that it must be possible to adapt the Annexes; whereas a procedure should be established whereby the Council can amend the Annexes;

Whereas a regulatory committee should be set up to assist the Commission in the implementation of this Directive and in

particular when decisions on Community co-financing are taken;

Whereas provision should be made for supplementary measures governing the reintroduction of certain native species of fauna and flora and the possible introduction of non-native species;

Whereas education and general information relating to the objectives of this Directive are essential for ensuring its effective implementation,

HAS ADOPTED THIS DIRECTIVE:

Definitions

Article 1

For the purpose of this Directive:

- (a) *conservation* means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status as defined in (e) and (i);
- (b) *natural habitats* means terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural;
- (c) *natural habitat types of Community interest* means those which, within the territory referred to in Article 2:
 - (i) are in danger of disappearance in their natural range;
 - or
 - (ii) have a small natural range following their regression or by reason of their intrinsically restricted area;
 - or
 - (iii) present outstanding examples of typical characteristics of one or more of the five following biogeographical regions: Alpine, Atlantic, Continental, Macaronesian and Mediterranean.

Such habitat types are listed or may be listed in Annex I;

- (d) *priority natural habitat types* means natural habitat types in danger of disappearance, which are present on the territory referred to in Article 2 and for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory referred to in Article 2; these priority natural habitat types are indicated by an asterisk (*) in Annex I;
- (e) *conservation status of a natural habitat* means the sum of the influences acting on a natural habitat and its

typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within the territory referred to in Article 2.

The conservative status of a natural habitat will be taken as 'favourable' when:

- its natural range and areas it covers within that range are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable as defined in (i);

(f) *habitat of a species* means an environment defined by specific abiotic and biotic factors, in which the species lives at any stage of its biological cycle;

(g) *species of Community interest* means species which, within the territory referred to in Article 2, are:

- (i) endangered, except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the western palearctic region; or
- (ii) vulnerable, i.e. believed likely to move into the endangered category in the near future if the causal factors continue operating; or
- (iii) rare, i.e. with small populations that are not at present endangered or vulnerable, but are at risk. The species are located within restricted geographical areas or are thinly scattered over a more extensive range; or
- (iv) endemic and requiring particular attention by reason of the specific nature of their habitat and/or the potential impact of their exploitation on their habitat and/or the potential impact of their exploitation on their conservation status.

Such species are listed or may be listed in Annex II and/or Annex IV or V;

(h) *priority species* means species referred to in (g)(i) for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory referred to in Article 2; these priority species are indicated by an asterisk (*) in Annex II;

(i) *conservation status of a species* means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;

The *conservation status* will be taken as 'favourable' when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

(j) *site* means a geographically defined area whose extent is clearly delineated;

(k) *site of Community importance* means a site which, in the biogeographical region or regions to which it belongs, contributes significantly to the maintenance or restoration at a favourable conservation status of a natural habitat type in Annex I or of a species in Annex II and may also contribute significantly to the coherence of Natura 2000 referred to in Article 3, and/or contributes significantly to the maintenance of biological diversity within the biogeographic region or regions concerned.

For animal species ranging over wide areas, sites of Community importance shall correspond to the places within the natural range of such species which present the physical or biological factors essential to their life and reproduction;

(l) *special area of conservation* means a site of Community importance designated by the Member States through a statutory, administrative and/or contractual act where the necessary conservation measures are applied for the maintenance or restoration, at a favourable conservation status, of the natural habitats and/or the populations of the species for which the site is designated;

(m) *specimen* means any animal or plant, whether alive or dead, of the species listed in Annex IV and Annex V, any part or derivative thereof, as well as any other goods which appear, from an accompanying document, the packaging or a mark or label, or from any other circumstances, to be parts or derivatives of animals or plants of those species;

(n) *the committee* means the committee set up pursuant to Article 20.

Article 2

1. The aim of this Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural

habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies.

2. Measures taken pursuant to this Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.

3. Measures taken pursuant to this Directive shall take account of economic, social and cultural requirements and regional and local characteristics.

Conservation of natural habitats and habitats of species

Article 3

1. A coherent European ecological network of special areas of conservation shall be set up under the title Natura 2000. This network, composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.

The Natura 2000 network shall include the special protection areas classified by the Member States pursuant to Directive 79/409/EEC.

2. Each Member State shall contribute to the creation of Natura 2000 in proportion to the representation within its territory of the natural habitat types and the habitats of species referred to in paragraph 1. To that effect each Member State shall designate, in accordance with Article 4, sites as special areas of conservation taking account of the objectives set out in paragraph 1.

3. Where they consider it necessary, Member States shall endeavour to improve the ecological coherence of Natura 2000 by maintaining, and where appropriate developing, features of the landscape which are of major importance for wild fauna and flora, as referred to in Article 10.

Article 4

1. On the basis of the criteria set out in Annex III (Stage 1) and relevant scientific information, each Member State shall propose a list of sites indicating which natural habitat types in Annex I and which species in Annex II that are native to its territory the sites host. For animal species ranging over wide areas these sites shall correspond to the places within the natural range of such species which present the physical or biological factors essential to their life and reproduction. For aquatic species which range over wide areas, such sites will be

proposed only where there is a clearly identifiable area representing the physical and biological factors essential to their life and reproduction. Where appropriate, Member States shall propose adaptation of the list in the light of the results of the surveillance referred to in Article 11.

The list shall be transmitted to the Commission, within three years of the notification of this Directive, together with information on each site. That information shall include a map of the site, its name, location, extent and the data resulting from application of the criteria specified in Annex III (Stage 1) provided in a format established by the Commission in accordance with the procedure laid down in Article 21.

2. On the basis of the criteria set out in Annex III (Stage 2) and in the framework both of each of the five biogeographical regions referred to in Article 1 (c) (iii) and of the whole of the territory referred to in Article 2 (1), the Commission shall establish, in agreement with each Member State, a draft list of sites of Community importance drawn from the Member States' lists identifying those which lost one or more priority natural habitat types or priority species.

Member States whose sites hosting one or more priority natural habitat types and priority species represent more than 5% of their national territory may, in agreement with the Commission, request that the criteria listed in Annex III (Stage 2) be applied more flexibly in selecting all the sites of Community importance in their territory.

The list of sites selected as sites of Community importance, identifying those which host one or more priority natural habitat types or priority species, shall be adopted by the Commission in accordance with the procedure laid down in Article 21.

3. The list referred to in paragraph 2 shall be established within six years of the notification of this Directive.

4. Once a site of Community importance has been adopted in accordance with the procedure laid down in paragraph 2, the Member State concerned shall designate that site as a special area of conservation as soon as possible and within six years at most, establishing priorities in the light of the importance of the sites for the maintenance or restoration, at a favourable conservation status, of a natural habitat type in Annex I or a species in Annex II and for the coherence of Natura 2000, and in the light of the threats of degradation or destruction to which those sites are exposed.

5. As soon as a site is placed on the list referred to in the third subparagraph of paragraph 2 it shall be subject to Article 6 (2), (3) and (4).

Article 5

1. In exceptional cases where the Commission finds that a national list as referred to in Article 4 (1) fails to mention a site hosting a priority natural habitat type or priority species which, on the basis of relevant and reliable scientific information, it considers to be essential for the maintenance of that priority natural habitat type or for the survival of that priority species, a bilateral consultation procedure shall be initiated between that Member State and the Commission for the purpose of comparing the scientific data used by each.

2. If, on expiry of a consultation period not exceeding six months, the dispute remains unresolved, the Commission shall forward to the Council a proposal relating to the selection of the site as a site of Community importance.

3. The Council, acting unanimously, shall take a decision within three months of the date of referral.

4. During the consultation period and pending a Council decision, the site concerned shall be subject to Article 6 (2).

Article 6

1. For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.

2. Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

3. Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only

after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

Article 7

Obligations arising under Article 6 (2), (3) and (4) of this Directive shall replace any obligations arising under the first sentence of Article 4 (4) of Directive 79/409/EEC in respect of areas classified pursuant to Article 4 (1) or similarly recognized under Article 4 (2) thereof, as from the date of implementation of this Directive or the date of classification or recognition by a Member State under Directive 79/409/EEC, where the latter date is later.

Article 8

1. In parallel with their proposals for sites eligible for designation as special areas of conservation, hosting priority natural habitat types and/or priority species, the Member States shall send, as appropriate, to the Commission their estimates relating to the Community co-financing which they consider necessary to allow them to meet their obligations pursuant to Article 6 (1).

2. In agreement with each of the Member States concerned, the Commission shall identify, for sites of Community importance for which co-financing is sought, those measures essential for the maintenance or re-establishment at a favourable conservation status of the priority natural habitat types and priority species on the sites concerned, as well as the total costs arising from those measures.

3. The Commission, in agreement with the Member States concerned, shall assess the financing, including co-financing, required for the operation of the measures referred to in paragraph 2, taking into account, amongst other things, the concentration on the Member State's territory of priority natural habitat types and/or priority species and the relative burdens which the required measures entail.

4. According to the assessment referred to in paragraphs 2 and 3, the Commission shall adopt, having regard to the available sources of funding under the relevant Community instruments and according to the procedure set out in Article 21, a prioritized action framework of measures involving co-financing to be taken when the site has been designated under Article 4 (4).

5. The measures which have not been retained in the action framework for lack of sufficient resources, as well as those included in the abovementioned action framework which have not received the necessary co-financing or have only been partially co-financed, shall be reconsidered in accordance with the procedure set out in Article 21, in the context of the two-yearly review of the action framework and may, in the meantime, be postponed by the Member States pending such review. This review shall take into account, as appropriate, the new situation of the site concerned.

6. In areas where the measures dependent on co-financing are postponed, Member States shall refrain from any new measures likely to result in deterioration of those areas.

Article 9

The Commission, acting in accordance with the procedure laid down in Article 21, shall periodically review the contribution of Natura 2000 towards achievement of the objectives set out in Article 2 and 3. In this context, a special area of conservation may be considered for declassification where this is warranted by natural developments noted as a result of the surveillance provided for in Article 11.

Article 10

Member States shall endeavour, where they consider it necessary, in their land-use planning and development policies and, in particular, with a view to improving the ecological coherence of the Natura 2000 network, to encourage the management of features of the landscape which are of major importance for wild fauna and flora.

Such features are those which, by virtue of their linear and continuous structure (such as rivers with their banks or the traditional systems for marking field boundaries) or their function as stepping stones (such as ponds or small woods),

are essential for the migration, dispersal and genetic exchange of wild species.

Article 11

Member States shall undertake surveillance of the conservation status of the natural habitats and species referred to in Article 2 with particular regard to priority natural habitat types and priority species.

Protection of species

Article 12

1. Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV (a) in their natural range, prohibiting:

- (a) all forms of deliberate capture or killing of specimens of these species in the wild;
- (b) deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration;
- (c) deliberate destruction or taking of eggs from the wild;
- (d) deterioration or destruction of breeding sites or resting places.

2. For these species, Member States shall prohibit the keeping, transport and sale or exchange, and offering for sale or exchange, of specimens taken from the wild, except for those taken legally before this Directive is implemented.

3. The prohibition referred to in paragraph 1 (a) and (b) and paragraph 2 shall apply to all stages of life of the animals to which this Article applies.

4. Member States shall establish a system to monitor the incidental capture and killing of the animal species listed in Annex IV (a). In the light of the information gathered, Member States shall take further research or conservation measures as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.

Article 13

1. Member States shall take the requisite measures to establish a system of strict protection for the plant species listed in Annex IV (b), prohibiting:

- (a) the deliberate picking, collecting, cutting, uprooting or destruction of such plants in their natural range in the wild;
- (b) the keeping, transport and sale or exchange and offering for sale or exchange of specimens of such species taken in the wild, except for those taken legally before this Directive is implemented.

2. The prohibitions referred to in paragraph 1 (a) and (b) shall apply to all stages of the biological cycle of the plants to which this Article applies.

Article 14

1. If, in the light of the surveillance provided for in Article 11, Member States deem it necessary, they shall take measures to ensure that the taking in the wild of specimens of species of wild fauna and flora listed in Annex V as well as their exploitation is compatible with their being maintained at a favourable conservation status.

2. Where such measures are deemed necessary, they shall include continuation of the surveillance provided for in Article 11. Such measures may also include in particular:

- regulations regarding access to certain property,
- temporary or local prohibition of the taking of specimens in the wild and exploitation of certain populations,
- regulation of the periods and/or methods of taking specimens,
- application, when specimens are taken, of hunting and fishing rules which take account of the conservation of such populations,
- establishment of a system of licences for taking specimens or of quotas,
- regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens,
- breeding in captivity of animal species as well as artificial propagation of plant species, under strictly controlled conditions, with a view to reducing the taking of specimens of the wild,
- assessment of the effect of the measures adopted.

Article 15

In respect of the capture or killing of species of wild fauna listed in Annex V (a) and in cases where, in accordance with

Article 16, derogations are applied to the taking, capture or killing of species listed in Annex IV (a), Member States shall prohibit the use of all indiscriminate means capable of causing local disappearance of, or serious disturbance to, populations of such species, and in particular:

- (a) use of the means of capture and killing listed in Annex VI (a);
- (b) any form of capture and killing from the modes of transport referred to in Annex VI (b).

Article 16

1. Provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range, Member States may derogate from the provisions of Articles 12, 13, 14 and 15 (a) and (b):

- (a) in the interest of protecting wild fauna and flora and conserving natural habitats;
- (b) to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property;
- (c) in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- (d) for the purpose of research and education, of repopulating and re-introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants;
- (e) to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species listed in Annex IV in limited numbers specified by the competent national authorities.

2. Member States shall forward to the Commission every two years a report in accordance with the format established by the Committee on the derogations applied under paragraph 1. The Commission shall give its opinion on these derogations within a maximum time limit of 12 months following receipt of the report and shall give an account to the Committee.

3. The reports shall specify:

- (a) the species which are subject to the derogations and the reason for the derogation, including the nature of the risk, with, if appropriate, a reference to alternatives rejected and scientific data used;

- (b) the means, devices or methods authorized for the capture or killing of animal species and the reasons for their use;
- (c) the circumstances of when and where such derogations are granted;
- (d) the authority empowered to declare and check that the required conditions obtain and to decide what means, devices or methods may be used, within what limits and by what agencies, and which persons are to carry but the task;
- (e) the supervisory measures used and the results obtained.

Information

Article 17

1. Every six years from the date of expiry of the period laid down in Article 23, Member States shall draw up a report on the implementation of the measures taken under this Directive. This report shall include in particular information concerning the conservation measures referred to in Article 6 (1) as well as evaluation of the impact of those measures on the conservation status of the natural habitat types of Annex I and the species in Annex II and the main results of the surveillance referred to in Article 11. The report, in accordance with the format established by the committee, shall be forwarded to the Commission and made accessible to the public.

2. The Commission shall prepare a composite report based on the reports referred to in paragraph 1. This report shall include an appropriate evaluation of the progress achieved and, in particular, of the contribution of Natura 2000 to the achievement of the objectives set out in Article 3. A draft of the part of the report covering the information supplied by a Member State shall be forwarded to the Member State in question for verification. After submission to the committee, the final version of the report shall be published by the Commission, not later than two years after receipt of the reports referred to in paragraph 1, and shall be forwarded to the Member States, the European Parliament, the Council and the Economic and Social Committee.

3. Member States may mark areas designated under this Directive by means of Community notices designed for that purpose by the committee.

Research

Article 18

1. Member States and the Commission shall encourage the necessary research and scientific work having regard to

the objectives set out in Article 2 and the obligation referred to in Article 11. They shall exchange information for the purposes of proper coordination of research carried out a Member State and at Community level.

2. Particular attention shall be paid to scientific work necessary for the implementation of Articles 4 and 10, and transboundary cooperative research between Member States shall be encouraged.

Procedure for amending the Annexes

Article 19

Such amendments as are necessary for adapting Annexes I, II, III, V and VI to technical and scientific progress shall be adopted by the Council acting by qualified majority on a proposal from the Commission.

Such amendments as are necessary for adapting Annex IV to technical and scientific progress shall be adopted by the Council acting unanimously on a proposal from the Commission.

Committee

Article 20

The Commission shall be assisted by a committee consisting of representatives of the Member States and chaired by a representative of the Commission.

Article 21

1. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time limit which the Chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The Chairman shall not vote.

2. The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the committee.

If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a

proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on the expiry of three months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

Supplementary provisions

Article 22

In implementing the provisions of this Directive, Member States shall:

- (a) study the desirability of re-introducing species in Annex IV that are native to their territory where this might contribute to their conservation, provided that an investigation, also taking into account experience in other Member States or elsewhere, has established that such re-introduction contributes effectively to re-establishing these species at a favourable conservation status and that it takes place only after proper consultation of the public concerned;
- (b) ensure that the deliberate introduction into the wild of any species which is not native to their territory is regulated so as not to prejudice natural habitats within their natural range or the wild native fauna and flora and, if they consider it necessary, prohibit such introduction. The results of the assessment undertaken shall be forwarded to the committee for information;
- (c) promote education and general information on the need to protect species of wild fauna and flora and to conserve their habitats and natural habitats.

Final provisions

Article 23

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within two years of its notification. They shall forthwith inform the Commission thereof.

2. When Member States adopt such measures, they shall contain a reference to this Directive or be accompanied by such reference on the occasion of their official publication. The methods of making such a reference shall be laid down by the Member States.

3. Member States shall communicate to the Commission the main provisions of national law which they adopt in the field covered by this Directive.

Article 24

This Directive is addressed to the Member States.

Done at Brussels, 21 May 1992.

For the Council
The President
Arlindo MARQUES CUNHA

ANNEX I

NATURAL HABITAT TYPES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES THE
DESIGNATION OF SPECIAL AREAS OF CONSERVATION

Interpretation

Code: The hierarchical classification of habitats produced through the Corine programme ⁽¹⁾ (Corine biotopes project) is the reference work for this Annex. Most types of natural habitat quoted are accompanied by the corresponding Corine code listed in the Technical Handbook, Volume 1, pp. 73—109, Corine/Biotope/89/2.2, 19 May 1988, partially updated 14 February 1989.

The sign 'x' combining codes indicates associated habitat types, e.g. 35.2 x 64.1 — Open grassland with *Corynephorus* and *Agrostis* (35.2), in combination with continental dunes (64.1).

The sign '**' indicates priority habitat types.

COSTAL AND HALOPHYTIC HABITATS

Open sea and tidal areas

11.25	Sandbanks which are slightly covered by sea water all the time
11.34	*Posidonia beds
13.2	Estuaries
14	Mudflats and sandflats not covered by seawater at low tide
21	*Lagoons
—	Large shallow inlets and bays
—	Reefs
—	Marine 'columns' in shallow water made by leaking gases

Sea cliffs and shingle or stony beaches

17.2	Annual vegetation of drift lines
17.3	Perennial vegetation of stony banks
18.21	Vegetated sea cliffs of the Atlantic and Baltic coasts
18.22	Vegetated sea cliffs of the Mediterranean coasts (with endemic <i>Limonium</i> spp.)
18.23	Vegetated sea cliffs of the Macaronesian coasts (flora endemic to these coasts)

Atlantic and continental salt marshes and salt meadows

15.11	<i>Salicornia</i> and other annuals colonizing mud and sand
15.12	<i>Spartina</i> swards (<i>Spartinion</i>)
15.13	Atlantic salt meadows (<i>Glauco-Puccinellietalia</i>)
15.14	*Continental salt meadows (<i>Puccinellietalia distantis</i>)

Mediterranean and thermo-Atlantic salt marshes and salt meadows

15.15	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)
15.16	Mediterranean and thermo-Atlantic halophilous scrubs (<i>Arthrocnemetalia fruticosae</i>)
15.17	Iberia halo-nitrophilous scrubs (<i>Pegano-Salsolietea</i>)

Salt and gypsum continental steppes

15.18	*Salt steppes (<i>Limonietaalia</i>)
15.19	*Gypsum steppes (<i>Gypsophiletalia</i>)

⁽¹⁾ Corine: Council Decision 85/338/EEC of 27 June 1985 (OJ No L 176, 6. 7. 1985, p. 14).

ANNEX II

ANIMAL AND PLANT SPECIES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES
THE DESIGNATION OF SPECIAL AREAS OF CONSERVATION

Interpretation

(a) Annex II follows on from Annex I for the establishment of a consistent network of special areas of conservation.

(b) The species listed in this Annex are indicated:

- by the name of the species or subspecies, or
- by the body of species belonging to a higher taxon or to a designated part of that taxon.

The abbreviation 'spp.' after the name of a family or genus designates all the species belonging to that family or genus.

(c) *Symbols*

An asterisk (*) before the name of a species indicates that the species is a priority species.

Most species listed in this Annex are also listed in Annex IV.

Where a species appears in this Annex but does not appear in either Annex IV or Annex V, the species name is followed by the symbol (o); where a species which appears in this Annex also appears in Annex V but does not appear in Annex IV, its name is followed by the symbol (V).

(a) ANIMALS

VERTEBRATES

MAMMALS

INSECTIVORA

Talpidae

Galemys pyrenaicus

CHIROPTERA

Rhinolophidae

Rhinolophus blasii

Rhinolophus euryale

Rhinolophus ferrumequinum

Rhinolophus hipposideros

Rhinolophus mehelyi

Vespertilionidae

Barbastella barbastellus

Miniopterus schreibersi

Myotis bechsteini

Myotis blythi

Myotis capaccinii

Myotis dasycneme

Myotis emarginatus

Myotis myotis

RODENTIA

Sciuridae

Spermophilus citellus

Castoridae

Castor fiber

Microtidae

Microtus cabrerae

**Microtus oeconomus arenicola*

ANNEX III

CRITERIA FOR SELECTING SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE AND DESIGNATION AS SPECIAL AREAS OF CONSERVATION

STAGE 1: Assessment at national level of the relative importance of sites for each natural habitat type in Annex I and each species in Annex II (including priority natural habitat types and priority species)

A. *Site assessment criteria for a given natural habitat type in Annex I*

- (a) Degree of representativity of the natural habitat type on the site.
- (b) Area of the site covered by the natural habitat type in relation to the total area covered by that natural habitat type within national territory.
- (c) Degree of conservation of the structure and functions of the natural habitat type concerned and restoration possibilities.
- (d) Global assessment of the value of the site for conservation of the natural habitat type concerned.

B. *Site assessment criteria for a given species in Annex II*

- (a) Size and density of the population of the species present on the site in relation to the populations present within national territory.
- (b) Degree of conservation of the features of the habitat which are important for the species concerned and restoration possibilities.
- (c) Degree of isolation of the population present on the site in relation to the natural range of the species.
- (d) Global assessment of the value of the site for conservation of the species concerned.

C. On the basis of these criteria, Member States will classify the sites which they propose on the national list as sites eligible for identification as sites of Community importance according to their relative value for the conservation of each natural habitat type in Annex I or each species in Annex II.

D. That list will show the sites containing the priority natural habitat types and priority species selected by the Member States on the basis of the criteria in A and B above.

STAGE 2: Assessment of the Community importance of the sites included on the national lists

1. All the sites identified by the Member States in Stage 1 which contain priority natural habitat types and/or species will be considered as sites of Community importance.
2. The assessment of the Community importance of other sites on Member States' lists, i.e. their contribution to maintaining or re-establishing, at a favourable conservation status, a natural habitat in Annex I or a species in Annex II and/or to the coherence of Natura 2000 will take account of the following criteria:
 - (a) relative value of the site at national level;
 - (b) geographical situation of the site in relation to migration routes of species in Annex II and whether it belongs to a continuous ecosystem situated on both sides of one or more internal Community frontiers;
 - (c) total area of the site;
 - (d) number of natural habitat types in Annex I and species in Annex II present on the site;
 - (e) global ecological value of the site for the biogeographical regions concerned and/or for the whole of the territory referred to in Article 2, as regards both the characteristic of unique aspect of its features and the way they are combined.

This document is meant purely as a documentation tool and the institutions do not assume any liability for its contents

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COUNCIL DIRECTIVE
of 2 April 1979
on the conservation of wild birds
 (79/409/EEC)

(OJ L 103, 25.4.1979, p. 1)

Amended by:

	Official Journal		
	No	page	date
► M1 Council Directive of 19 October 1981 (81/854/EEC)	L 319	3	7.11.1981
► M2 Commission Directive of 25 July 1985 (85/411/EEC)	L 233	33	30.8.1985
► M3 Council Directive of 8 April 1986 (86/122/EEC)	L 100	22	16.4.1986
► M4 Commission Directive of 6 March 1991 (91/244/EEC)	L 115	41	8.5.1991
► M5 Council Directive 94/24/EC of 8 June 1994	L 164	9	30.6.1994
► M6 Commission Directive 97/49/EC of 29 July 1997	L 223	9	13.8.1997

Amended by:

► A1 Act of Accession of Greece	L 291	17	19.11.1979
► A2 Act of Accession of Spain and Portugal	L 302	23	15.11.1985
► A3 Act of Accession of Austria, Sweden and Finland	C 241	21	29.8.1994
(adapted by Council Decision 95/1/EC, Euratom, ECSC)	L 1	1	1.1.1995

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COUNCIL DIRECTIVE
of 2 April 1979
on the conservation of wild birds
 (79/409/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,

Having regard to the proposal from the Commission⁽¹⁾,

Having regard to the opinion of the European Parliament⁽²⁾,

Having regard to the opinion of the Economic and Social Committee⁽³⁾,

Whereas the Council declaration of 22 November 1973 on the programme of action of the European Communities on the environment⁽⁴⁾ calls for specific action to protect birds, supplemented by the resolution of the Council of the European Communities and of the representatives of the Governments of the Member States meeting within the Council of 17 May 1977 on the continuation and implementation of a European Community policy and action programme on the environment⁽⁵⁾;

Whereas a large number of species of wild birds naturally occurring in the European territory of the Member States are declining in number, very rapidly in some cases; whereas this decline represents a serious threat to the conservation of the natural environment, particularly because of the biological balances threatened thereby;

Whereas the species of wild birds naturally occurring in the European territory of the Member States are mainly migratory species; whereas such species constitute a common heritage and whereas effective bird protection is typically a trans-frontier environment problem entailing common responsibilities;

Whereas the conditions of life for birds in Greenland are fundamentally different from those in the other regions of the European territory of the Member States on account of the general circumstances and in particular the climate, the low density of population and the exceptional size and geographical situation of the island;

Whereas therefore this Directive should not apply to Greenland;

Whereas the conservation of the species of wild birds naturally occurring in the European territory of the Member States is necessary to attain, within the operation of the common market, of the Community's objectives regarding the improvement of living conditions, a harmonious development of economic activities throughout the Community and a continuous and balanced expansion, but the necessary specific powers to act have not been provided for in the Treaty;

Whereas the measures to be taken must apply to the various factors which may affect the numbers of birds, namely the repercussions of man's activities and in particular the destruction and pollution of their habitats, capture and killing by man and the trade resulting from such practices; whereas the stringency of such measures should be adapted to the particular situation of the various species within the framework of a conservation policy;

Whereas conservation is aimed at the long-term protection and management of natural resources as an integral part of the heritage of the peoples of Europe; whereas it makes it possible to control natural resources and governs their use on the basis of the measures necessary

⁽¹⁾ OJ No C 24, 1.2. 1977, p. 3; OJ No C 201, 23. 8. 1977, p. 2.

⁽²⁾ OJ No C 163, 11.7. 1977, p. 28.

⁽³⁾ OJ No C 152, 29. 6. 1977, p. 3.

⁽⁴⁾ OJ No C 112, 20. 12. 1973, p. 40.

⁽⁵⁾ OJ No C 139, 13. 6. 1977, p. 1.

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for the maintenance and adjustment of the natural balances between species as far as is reasonably possible;

Whereas the preservation, maintenance or restoration of a sufficient diversity and area of habitats is essential to the conservation of all species of birds; whereas certain species of birds should be the subject of special conservation measures concerning their habitats in order to ensure their survival and reproduction in their area of distribution; whereas such measures must also take account of migratory species and be coordinated with a view to setting up a coherent whole;

Whereas, in order to prevent commercial interests from exerting a possible harmful pressure on exploitation levels it is necessary to impose a general ban on marketing and to restrict all derogation to those species whose biological status so permits, account being taken of the specific conditions obtaining in the different regions;

Whereas, because of their high population level, geographical distribution and reproductive rate in the Community as a whole, certain species may be hunted, which constitutes acceptable exploitation; where certain limits are established and respected, such hunting must be compatible with maintenance of the population of these species at a satisfactory level;

Whereas the various means, devices or methods of large-scale or non-selective capture or killing and hunting with certain forms of transport must be banned because of the excessive pressure which they exert or may exert on the numbers of the species concerned;

Whereas, because of the importance which may be attached to certain specific situations, provision should be made for the possibility of derogations on certain conditions and subject to monitoring by the Commission;

Whereas the conservation of birds and, in particular, migratory birds still presents problems which call for scientific research; whereas such research will also make it possible to assess the effectiveness of the measures taken;

Whereas care should be taken in consultation with the Commission to see that the introduction of any species of wild bird not naturally occurring in the European territory of the Member States does not cause harm to local flora and fauna;

Whereas the Commission will every three years prepare and transmit to the Member States a composite report based on information submitted by the Member States on the application of national provisions introduced pursuant to this Directive;

Whereas it is necessary to adapt certain Annexes rapidly in the light of technical and scientific progress; whereas, to facilitate the implementation of the measures needed for this purpose, provision should be made for a procedure establishing close cooperation between the Member States and the Commission in a Committee for Adaptation to Technical and Scientific Progress,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies. It covers the protection, management and control of these species and lays down rules for their exploitation.
2. It shall apply to birds, their eggs, nests and habitats.
3. This Directive shall not apply to Greenland.

Article 2

Member States shall take the requisite measures to maintain the population of the species referred to in Article 1 at a level which



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corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level.

Article 3

1. In the light of the requirements referred to in Article 2, Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.



2. The preservation, maintenance and re-establishment of biotopes and habitats shall include primarily the following measures:

- (a) creation of protected areas;
- (b) upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones;
- (c) re-establishment of destroyed biotopes;
- (d) creation of biotopes.

Article 4

1. The species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

In this connection, account shall be taken of:

- (a) species in danger of extinction;
- (b) species vulnerable to specific changes in their habitat;
- (c) species considered rare because of small populations or restricted local distribution;
- (d) other species requiring particular attention for reasons of the specific nature of their habitat.

Trends and variations in population levels shall be taken into account as a background for evaluations.

Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species, taking into account their protection requirements in the geographical sea and land area where this Directive applies.

2. Member States shall take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance.

3. Member States shall send the Commission all relevant information so that it may take appropriate initiatives with a view to the coordination necessary to ensure that the areas provided for in paragraphs 1 and 2 above form a coherent whole which meets the protection requirements of these species in the geographical sea and land area where this Directive applies.

4. In respect of the protection areas referred to in paragraphs 1 and 2 above, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.



Article 5

Without prejudice to Articles 7 and 9, Member States shall take the requisite measures to establish a general system of protection for all species of birds referred to in Article 1, prohibiting in particular:

- (a) deliberate killing or capture by any method;
- (b) deliberate destruction of, or damage to, their nests and eggs or removal of their nests;
- (c) taking their eggs in the wild and keeping these eggs even if empty;
- (d) deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive;
- (e) keeping birds of species the hunting and capture of which is prohibited.

Article 6

1. Without prejudice to the provisions of paragraphs 2 and 3, Member States shall prohibit, for all the bird species referred to in Article 1, the sale, transport for sale, keeping for sale and the offering for sale of live or dead birds and of any readily recognizable parts or derivatives of such birds.

2. The activities referred to in paragraph 1 shall not be prohibited in respect of the species referred to in Annex III/1, provided that the birds have been legally killed or captured or otherwise legally acquired.

3. Member States may, for the species listed in Annex III/2, allow within their territory the activities referred to in paragraph 1, making provision for certain restrictions, provided the birds have been legally killed or captured or otherwise legally acquired.

Member States wishing to grant such authorization shall first of all consult the Commission with a view to examining jointly with the latter whether the marketing of specimens of such species would result or could reasonably be expected to result in the population levels, geographical distribution or reproductive rate of the species being endangered throughout the Community. Should this examination prove that the intended authorization will, in the view of the Commission, result in any one of the aforementioned species being thus endangered or in the possibility of their being thus endangered, the Commission shall forward a reasoned recommendation to the Member State concerned stating its opposition to the marketing of the species in question. Should the Commission consider that no such risk exists, it will inform the Member State concerned accordingly.

The Commission's recommendation shall be published in the *Official Journal of the European Communities*.

Member States granting authorization pursuant to this paragraph shall verify at regular intervals that the conditions governing the granting of such authorization continue to be fulfilled.

4. The Commission shall carry out studies on the biological status of the species listed in Annex III/3 and on the effects of marketing on such status.

It shall submit, at the latest four months before the time limit referred to in Article 18 (1) of this Directive, a report and its proposals to the Committee referred to in Article 16, with a view to a decision on the entry of such species in Annex III/2.

Pending this decision, the Member States may apply existing national rules to such species without prejudice to paragraph 3 hereof.

Article 7

1. Owing to their population level, geographical distribution and reproductive rate throughout the Community, the species listed in Annex II may be hunted under national legislation. Member States shall ensure

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that the hunting of these species does not jeopardize conservation efforts in their distribution area.

2. The species referred to in Annex II/1 may be hunted in the geographical sea and land area where this Directive applies.

3. The species referred to in Annex II/2 may be hunted only in the Member States in respect of which they are indicated.

4. Member States shall ensure that the practice of hunting, including falconry if practised, as carried on in accordance with the national measures in force, complies with the principles of wise use and ecologically balanced control of the species of birds concerned and that this practice is compatible as regards the population of these species, in particular migratory species, with the measures resulting from Article 2. They shall see in particular that the species to which hunting laws apply are not hunted during the rearing season nor during the various stages of reproduction. In the case of migratory species, they shall see in particular that the species to which hunting regulations apply are not hunted during their period of reproduction or during their return to their rearing grounds. Member States shall send the Commission all relevant information on the practical application of their hunting regulations.

Article 8

1. In respect of the hunting, capture or killing of birds under this Directive, Member States shall prohibit the use of all means, arrangements or methods used for the large-scale or non-selective capture or killing of birds or capable of causing the local disappearance of a species, in particular the use of those listed in Annex IV (a).

2. Moreover, Member States shall prohibit any hunting from the modes of transport and under the conditions mentioned in Annex IV (b).

Article 9

1. Member States may derogate from the provisions of Articles 5, 6, 7 and 8, where there is no other satisfactory solution, for the following reasons:

- (a) — in the interests of public health and safety,
 - in the interests of air safety,
 - to prevent serious damage to crops, livestock, forests, fisheries and water,
 - for the protection of flora and fauna;
- (b) for the purposes of research and teaching, of re-population, of re-introduction and for the breeding necessary for these purposes;
- (c) to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers.

2. The derogations must specify:

- the species which are subject to the derogations,
- the means, arrangements or methods authorized for capture or killing,
- the conditions of risk and the circumstances of time and place under which such derogations may be granted,
- the authority empowered to declare that the required conditions obtain and to decide what means, arrangements or methods may be used, within what limits and by whom,
- the controls which will be carried out.

3. Each year the Member States shall send a report to the Commission on the implementation of this Article.

4. On the basis of the information available to it, and in particular the information communicated to it pursuant to paragraph 3, the Commission shall at all times ensure that the consequences of these derogations are not incompatible with this Directive. It shall take appropriate steps to this end.



Article 10

1. Member States shall encourage research and any work required as a basis for the protection, management and use of the population of all species of bird referred to in Article 1.
2. Particular attention shall be paid to research and work on the subjects listed in Annex V. Member States shall send the Commission any information required to enable it to take appropriate measures for the coordination of the research and work referred to in this Article.

Article 11

Member States shall see that any introduction of species of bird which do not occur naturally in the wild state in the European territory of the Member States does not prejudice the local flora and fauna. In this connection they shall consult the Commission.

Article 12

1. Member States shall forward to the Commission every three years, starting from the date of expiry of the time limit referred to in Article 18 (1), a report on the implementation of national provisions taken thereunder.
2. The Commission shall prepare every three years a composite report based on the information referred to in paragraph 1. That part of the draft report covering the information supplied by a Member State shall be forwarded to the authorities of the Member State in question for verification. The final version of the report shall be forwarded to the Member States.

Article 13

Application of the measures taken pursuant to this Directive may not lead to deterioration in the present situation as regards the conservation of species of birds referred to in Article 1.

Article 14

Member States may introduce stricter protective measures than those provided for under this Directive.

Article 15

Such amendments as are necessary for adapting Annexes I and V to this Directive to technical and scientific progress and the amendments referred to in the second paragraph of Article 6 (4) shall be adopted in accordance with the procedure laid down in Article 17.

Article 16

1. For the purposes of the amendments referred to in Article 15 of this Directive, a Committee for the Adaptation to Technical and Scientific Progress (hereinafter called 'the Committee'), consisting of representatives of the Member States and chaired by a representative of the Commission, is hereby set up.
2. The Committee shall draw up its rules of procedure.

Article 17

1. Where the procedure laid down in this Article is to be followed, matters shall be referred to the Committee by its chairman, either on his own initiative or at the request of the representative of a Member State.
2. The Commission representative shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit set by the chairman having regard to the urgency of the matter. It shall act by a majority of ►A2 54 ◀ votes, the votes of the Member States being weighted as provided in Article 148 (2) of the Treaty. The chairman shall not vote.

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3. (a) The Commission shall adopt the measures envisaged where they are in accordance with the opinion of the Committee.
- (b) Where the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall without delay submit a proposal to the Council concerning the measures to be adopted. The Council shall act by a qualified majority.
- (c) If, within three months of the proposal being submitted to it, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 18

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within two years of its notification. They shall forthwith inform the Commission thereof.
2. Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field governed by this Directive.

*Article 19*

This Directive is addressed to the Member States.

ANEXO I — BILAGA I — ANHANG I — ANNEX I — ANNEXE I — ALLEGATO I — BILAGE I — ANEXO I — LIITE I — BILAGA I

	Español	Dansk	Deutsch	Ελληνικά	English	Français	Italiano	Nederlands	Português	Suomi	Svenska
1. <i>Gavia stellata</i>	Colimbo chico	Rødstrubet lom	Sterntaucher	Κολίμβο-βούτι	Red-throated diver	Plongeon catmarin	Strolaga minore	Roodkeel-duiker	Mobêlha-pequena	Kaakkuri	Smal lom
2. <i>Gavia arctica</i>	Colimbo ártico	Sortstrubet lom	Prachtaucher	Λαμρπο-βούτι	Black-throated diver	Plongeon arctique	Strolaga mezzana	Parelduiker	Mobêlha-ártica	Kuikka	Stor lom
3. <i>Gavia immer</i>	Colimbo grande	Islom	Eistaucher	Παρυβούτι	Great northern diver	Plongeon imbrin	Strolaga maggiore	Udsuiker	Mobêlha-grande	Ameri-kuikka	Islom
4. <i>Podiceps auritus</i>	Zammillín cuellirrojo	Nordisk lappe-dykker	Ohrentaucher	Όρεινόπτη-Χαίρα	Slavonian grebe	Grèbe esciavon	Svasso cornuto	Kuifduiker	Mergulhão-de-pescoco-castanho	Musta-kuikka-ukku	Svarthak-dopping
5. <i>Pterodroma madeira</i>	Petrel de Madeira	Madeira blod petrel	Madeira-Sturmvogel	Φινιάλο-ρούαί της Μιλόβραç	Zino's petrel	Diablotin de Madère	Berta di Madeira	Madeiras-tormvogel	Freira da Madeira	Maderan-vuistaja	Smalnbbaad sammetspe
6. <i>Pterodroma fene</i>	Petrel atlántico	Kanarísk blod petrel	Kapverdén-Sturmvogel	Φινιάλο-ρούαί του Desertas	Fea's petrel	Diablotin du Cap-Vert	Berta del Capo Verde	Gon-gonstormvogel	Freira do Bugio	Kapvenen-vuistaja	Tjocknbbaad sammetspe
7. <i>Bulweria bulwerii</i>	Petrel de Bulwer	Bulwers skrápe	Bulwer-sturmvogel	Φινιάλο-ρούαί του Bulwer	Bulwer's petrel	Pétrel de Bulwer	Berta di Bulwer	Bulwers stormvogel	Alma negra	Tyrsky-litaja	Spetsstjartad petrel
8. <i>Calonectris diomedea</i>	Pardela cenicienta	Kuls skrápe	Gelbschnabelsturmtaucher	Αρτέμις	Cory's shearwater	Puffin cendré	Berta maggiore	Kuhls stormvogel	Pardela-de-bico-amarelo	Välimeren-litaja	Gulnbbaad lura
9. <i>Puffinus puffinus mauretanicus</i>	Pardela pichoneta balear	Balcarsk almudelig skrápe	Schwarzschnebelsturmtaucher	Μύπος (πουλί Βαλεαρική)	Manx shearwater (Balearic subspecies)	Puffin des Baléares	Berta minore (sottospecie delle Baleari)	Noordse pijlstormvogel (Westmediterrane ondersoort)	Pardela-sombria das Baleares	Pikkulitaja	Modellhav-slita
10. <i>Puffinus assimilis</i>	Pardela chica	Lille skrápe	Kleiner Sturmtaucher	Μικρόπυλοç	Little shearwater	Petit puffin	Berta minore foscá	Kleine pijlstormvogel	Pardela-pequena	Kääpiolitaja	Dvärglura

APPENDIX III: NEWSPAPER ARTICLES

- Adams, David (2008): We might all yet disappear in the blink of an eye. *The Irish Times*, 25th September 2008
- Byrne, Martin (2004): Hen Harrier scuppers windfarm proposals. *The Limerick Leader*, 6th June 2004
- Cody, M. (2004): Rockchapel group question windfarm policy. *The Corkman*, 20th August 2004
- Crosbie, J. (2000): Conservation areas not to be increased. *The Irish Times*, 9th November 2000
- Deegan, Gordan (1999): Snail is safe at new golf site, says Dúchas. *The Irish Times*, 3rd March 1999
- Deegan, Gordan (1999): McKenna objects to EU funding for golf course in area inhabited by threatened snail. *The Irish Times*, 12th November 1999
- Deegan, Gordon (2003): Delay admitted on rare birds order. *The Irish Times*, 9th August 2003
- Deegan, Gordan (2003): EU fine looms for State over harried rare birds. *The Irish Independent*. 9th August 2003.
- Deegan, Gordan (2003): Conservation aims almost met. *The Irish Times*, 14th June 2003
- Deegan, Gordan (2004): An Taisce seeks change on planning in *The Irish Times*, 6th May 2004
- Deegan, Gordan (2004): Birds of Ireland. *The Irish Times*, 9th November 2004.
- Deegan, Gordan (2004): 1,500 Euro fine for destruction of habitat. *The Irish Times*, 4th June 2004
- Deegan, Gordan (2003): Farmers to oppose plan for Shannon estuary. *The Irish Times*, 19th April 2003
- Donnellan, Eithne (2001): Bypass reprieve for conservation area. *The Irish Times*, 17th May 2001
- Duffy, Carol (2003): Councillor says dump plan is 'lunacy'. *The Irish Times*, 7th January 2003

- Feehily, Patricia (2003): Shoot the Bastards. *The Limerick Leader*, 8th March 2003
- Feehily, Patrick (2005): Hen Harrier returns to haunt West Limerick. *The Limerick Leader*, 9th July 2005
- FIE (2007): Ireland slammed by EU judges on bird protection, on-line, 13.12.2007
- FIE: (2007): The vanishing Hen Harrier. *Forest Network Newsletter (FFN)*, Issue 177, November 2007
- FIE (2007): Designations won't save hen harrier. *Forest Network Newsletter (FNN)* Issue 177, November 2007
- Healy, Alison (2000): Dúchas halts removal of sand from protected dunes. *The Irish Times*, 28th June 2000
- Herlihy, Maria (2006): Windmills are a nightmare. *The Corkman*, 11th April 2006.
- Hickey, Donal (2003): Consent sought for second wind-farm in the hen harrier-earmarked area. *The Irish Examiner*, 7th June 2003
- Hogan, Treacy (2004): Bird of Prey harries massive €73m wind farm out of the sky. *The Irish Independent*, 1st June 2004
- Hogan, T. (2007): Row over new plan to protect endangered hen harriers. *The Irish Independent*, 9th November 2007
- Irish Farmers Journal (2003): Could you exploit a wind-power option on your land? in Farm Management Section. *Irish Farmers Journal*, 3rd May 2003
- Kelliher, Eve (2007): Kerry farmers cry fowl as eagle returns. *The Kerryman*, 23 January 2007
- King, Tim (2004): EU chides Ireland over wild birds. *The Irish Times*, 30th January 2004
- Lucey, Anne (2003): An Taisce opposes proposal for Clonakilty tidal barrage. *The Irish Times*, 25 January 2003
- Lucey, Anne (2003): Motor racing 'is ruining beaches'. *The Irish Times*, 24th February 2003
- Lucey, Anne (2003): Fears of bird defence over local economy. *The Irish Times*, 17 March 2003

Lucey, Anne (2003): Landfill part of Special Area of Conservation. *The Irish Times*, 10th June 2003

Lucey, Anne (2003): Groups object to hydro project for bog. *The Irish Times*, 8th August 2003

Lucey, Anne (2004): Rejection of golf course welcomed. *The Irish Times*, 27th April 2004

Lucey, Anne (2004): Cullen to get report on Inch sand spit. *The Irish Times*, 30th April 2004

Lucey, Anne (2005): Hen Harrier to get 80,000 acres of protected habitat. *The Irish Times*, 29th July 2005

MacConnell, Seán (2003): Dillon 'does not condone' bird's killing. *The Irish Times*, 20th May 2003

MacConnell, Seán (1997): Farmers press for more compensation for OPW's conservation restrictions. *The Irish Times*, 28th July 1997

MacConnell, Seán (1998): Trying to strike a fair balance between habitat and humans. *The Irish Times*, 31st July 1998

MacConnell, Seán (1999): Increased payments to REPS farmers. *The Irish Times*, 8th April 1999

MacConnell, Seán (2002): Slurry deadline extended again. *The Irish Times*, 1st August 2002

MacConnell, Seán (2003): Farmers demand changes in conservation rules. *The Irish Times*, 30th June 2003

MacConnell, Seán (2003): Farmers told they can earn more by protecting flora and fauna. *The Irish Times*, 5th November 2003

MacConnell, Seán (2003): IFA accepts £260m package and signs up to partnership deal. *The Irish Times*, 1st May 2003

MacConnell, Seán (2003): Dillon does not condone bird's killing. *The Irish Times*, 20th May 2003

MacConnell, Seán (2007): New Protocol to protect hen harrier. *The Irish Times*, 29th March 2007

MacConnell, Seán (2007): Move to ease dispute over hen harrier and farmers. *The Irish Times*, 19th April 2007

MacConnell, Seán (2008): Farmers warned over Hen Harrier. *The Irish Times*, 22nd January 2008

MacDonald, Frank (1997): Legal action likely over levelled Wicklow sand dunes. *The Irish Times*, 28th August 1997

MacDonald, Frank (1998): Areas not listed says groups. *The Irish Times*, 10th August 1998

MacDonald, Frank (2002): Dúchas reversed decision to object to development over wildlife. *The Irish Times*, 8th January 2002

MacDonald, Frank (2002): Conservation is king in the Boyne Valley. *The Irish Times*, 10th December 2002

MacNally, Liam (2001): Group seeks legal advice over Brussels conservation directive. *The Irish Times*, 31st June 2001

MacNally, Liam (2001): Appeal of Dúchas land designation is adjourned. *The Irish Times*, 25th July 2001

Magner, Donal (2006): Protecting the hen harrier and the national forestry programme. *The Irish Farmers Journal*, 15th April 2006

McGrath, Deirdre (2003): Protected bird fails to stop windmills. *The Limerick Leader*, 16 August 2003

Mulqueen, Eibhir (2001): Burren being damaged by limestone removal. *The Irish Times*, 10th March 2001

O'Brien, Tim (2002): EU criticises State over wild habitats. *The Irish Times*, 10th June 2002

O'Dea, Trish (2003): Fears village could be 60% surrounded by windfarms. *The Corkman*, 5th September 2003

O'Malley, Teresa (2004): Farmers reject Dúchas decisions on land. *The Irish Times*, 20th February 2003

O'Sullivan, Kevin (1999): Conservationists challenge list of designated wildlife sites. *The Irish Times*, 2nd September 1999

O'Sullivan, Kevin (2000): Trust report criticises planning process in conservation areas. *The Irish Times*, 16th February 2000

O'Sullivan, Kevin (2000): Green alliance push to conserve habitats. *The Irish Times*, 15th January 2000

O'Sullivan, K. (2000): Groups want EU Habitats Directive implemented to save wildlife sites. *The Irish Times*, 29th May 2000

Prendiville, Norma (2001): A £10m windfarm threatened by risk to birdlife'. *The Limerick Leader*, 20th October 2001

Raleigh, David (2003): Farmers fear plan to protect hens. *The Irish Times*, 14th March 2003

Ryan, Ray (2005): Hen Harrier Issue under scrutiny. *The Irish Examiner*, 12th November 2005

Sheehan, Aideen (2003): Forests go-ahead despite rare hen. *The Irish Independent*, 22nd April 2003

Siggins, Lorna (1998): Farmers fear they are losing out to conservation. *The Irish Times*, 9th February 1998

Siggins, Lorna (1998): Minister urged to save national heritage. *The Irish Times*, 28th May 1998

Siggins, Lorna (1998): De Valera acts on conservation after EU threat to cut drainage funding. *The Irish Times*, 5 May 1998

Siggins, Lorna (1998): 39 Special areas of conservation are submitted to the EU. *The Irish Times*, 7th August 1998

Siggins, Lorna (1998): Green lobby criticises 'stitch-up' as plan for Roundstone Bog takes off again. *The Irish Times*, 21st September 1998

Siggins, Lorna (1999): Conservation decisions spark controversy. *The Irish Times*, 22nd March 1999

Siggins, Lorna (1999): Environmental and farming interests give wildlife bill mixed reception. *The Irish Times*, 2nd March 1999

Siggins, Lorna (2000): Avoiding conflict about fish farming. *The Irish Times*, 11th December 2000

Smith, Paddy (2004): Two organisations at Loggerheads Over Bogs Deal. *The Irish Independent*, 3rd August 2004

Smyth, Patrick (1999): EU funds at risk over delays on wildlife deadlines. *The Irish Times*, 10th July 1999

Staunton, Denis (2004): State in Breach of EU Environmental Law. *The Irish Times*, 14th July 2004

The Kingdom: (2006): Farmers Want to Stick to Hen Harrier Agreement. *The Kingdom*, 14th July 2005

The Limerick Leader (2006): Hen harrier swoops in advance of SPA order in the Farmer Leader Section. *The Limerick Leader*, 11th March 2006

Tobin, Joan (2001): Objections to helicopter pad beside special area of conservation in Louisburgh in *The Irish Times*, 2nd April 2001

Tobin, Joan (2002): Gas Hearing told terminal could affect flora, fauna, *The Irish Times*, 22nd February 2002

Tyrrell, Fiona (2004): Wind farm plan rejected over fears for bird species. *The Irish Times*, 1st June 2004

Viney, Micheal (2003): Wind power and the plight of the hen harrier. *The Irish Times*, 22 February 2003

Viney, Michael (2003): Brooding on the politics of conservation. *The Irish Times*, 10th May 2003

Wood, Kieron (2007): EU court to rule on treatment of Irish Wild Birds. *Sunday Business Post*, 9th December 2007

APPENDIX IV: LIST OF INTERVIEWEES

Phase 1 interviews

Ref	Interviewee
01	Ornithologist with Birdwatch Ireland (BWI)
02	Representative of An Taisce, The Heritage Trust
03	Representative of Coastwatch Europe
04	Representative of Irish Peatlands Protection Council (IPPC)
05	Representative of Irish Wildlife Trust (IWT)
06	Representative of Teagasc
07	Marine Biologist
08	Representative of DEHLG, NPWS
09	Representative of DAFF, REPS
10	Botanist on National Platform for Biodiversity Research
11	Representative of Irish Farmers Association (IFA)
12	Representative of Irish Creamery Milk Suppliers Association (ICMSA)
13	Representative of Friends of the Irish Environment (FIE)
14	Ecologist with Coillte
15	Bord Iascaigh Mhara (BIM), Irish Sea Fisheries Board
16	Expert in Nature Conservation Law, Trinity College Dublin

Phase 2. Interviews

Case Study1: Hen Harrier designations in the Stacks-Mullaghereirks

Ref	Interviewee
hh:01a/b	Non-REPS Farmer with windfarm (IFA active) Husband and wife interviewed as a couple
hh:02	Non-REPS Farmer and potential windfarmer
hh:03	Non-REPS Farmer with windfarm (thinking of joining REPS now),
hh:04	REPS Farmer, also Chairman of local walking group (walking trail running through area likely to designated)
hh:05	REPS Farmer
hh:06	Non-REPS Farmer
hh:07	REPS Farmer with windfarm interests
hh:08 a/b	Non-REPS Farmer (IFA active) (a) Wife joined us for some of the interview (b)
hh:09	Non-REPS Farmer and Director of a Forestry Assessment Company – (IFA active)
hh:10 a/b	Non-REPS Farmer and forester (IFA active) (a) Wife joined us for some of interview (b)
hh:11	REPS Farmer with forestry
hh:12	Coillte official
hh:13	Local, walker Limerick-based
hh:14	County Council, Heritage Officer Limerick. Involved in planning.

hh:15	County Council, Heritage Officer Kerry. Involved in planning.
hh:16	Ornithological expert based in Limerick (linked to BWI)
hh:17	Ornithological expert based in Tralee
hh:18	Dublin-based NPWS official (involved in primary survey work on hen harrier)
hh:19	Local Conservation Ranger with the NPWS, Kerry
hh:20	Teagasc Advisor, Co Limerick
hh:21	Local landholder and Irish Rural Development Association (IRDA) representative
hh:22	Forestry Officer, IFA, Dublin-based

Case study 2: The Owenduff-Nephin Complex

Ref	Interviewee
o-n:01	Teagasc advisor and local farmer
o-n:02	Non-REPS Farmer and local County Councillor (IFA active) Formerly the National Chairman of IFA's Sheep Committee
o-n:03	Local non-farmer involved in walking and tourism. President of Keep Ireland Open (KIO)
o-n:04	Local Conservation Ranger with the NPWS
o-n:05	NPWS District manager
o-n:06	Representative of Coillte, Ireland's leading forestry company
o-n:07	REPS Hill farmer with commonage
o-n:08	Non-REPS Hill farmer with commonage
o-n:09	Non-REPS Hill farmer with commonage
o-n:10	REPS Farmer with commonage
a/b	Husband and wife interviewed as a couple
o-n:11	REPS Farmer with commonage
o-n:12	Non-REPS Farmer without commonage but land adjoining commonage
o-n:13	REPS Farmer with commonage (a)
a/b	Joined by his wife for some of discussion (b)
o-n:14	Non REPS Farmer with commonage
o-n:15	REPS Farmer with commonage
o-n:16	Local in the tourist industry
o-n:17	Local involved in walking, previously worked with Bord Fáilte
o-n:18	Local farmer without commonage
o-n:19	NPWS officer, Regional office
o-n:20	Walker and ex-journalist with local newspaper Organises walks in the 'Old Bangor Trail'
o-n:21	TD (Member of Parliament) and community doctor

APPENDIX V: CODING SCHEME

Devising and negotiating Nature-Society Boundaries in Natura 2000

- EU level
- National level
 - Politicisation
 - Consultation
 - Compensation
 - Nationalist Discourse
 - Lobby group strategies
 - Line drawing constraints and dilemmas
- Translating places into habitats
- Expert knowledges of nature
 - Local and non-local ecological experts
 - Scientific uncertainties
 - Boundaries
 - Access
 - Authenticity
 - Entitlements
 - Belongingness

Managing Nature-Society Boundaries in Natura 2000

- EU level
- National level
 - Boundaries
 - The public and the private
 - Social capital
 - Livelihoods
 - Place particularities
 - Agential nature

Negotiating Nature 2000 on-the-ground

- Emergent local divides and tensions
 - REPS and non-REPS
 - Discrete and shared place performances
 - Fairness and unfairness
- Identity issues

Resistance to Place Translation

- Organised resistance at national level
- Overt, demonstrative resistance
- Everyday resistance
- Dwelling in place
- Local knowledge of nature and place
- Local perceptions of expert knowledge
- Local articulations of place
 - Boundaries
 - Access
 - Authenticity
 - Entitlements
 - Belongingness

Socio-Ecological Change: Place and Nature/Habitat conservation

- Discourses of loss
- Discourses of catastrophe

