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National Parks and Ecosystem Services: A case study of how this approach impacts an English National Park's ability to meet its statutory purposes

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of MSc Spatial Planning at University College London:

I declare that this dissertation is entirely my own work and that ideas, data, and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

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List of Abbreviations

DCLG – Department for Communities and Local Government (now known as the Department for Levelling Up, Housing and Communities)

DEFRA – Department for Environment, Food and Rural Affairs

ESF – Ecosystem Services Framework

ES – Ecosystem services

GIS – Geographic Information System

NPPF – National Planning Policy Framework

TAN – Technical Advice Note

Abstract

The Ecosystem Services Framework (ESF) is an emerging topic in conservation, promising to bring together economic and environmental thinking for better policy decisions. Whilst ecosystem services were mainstreamed into the National Planning Policy Framework in 2012, little research has been conducted into how the ESF has been practically applied to planning. This dissertation thus explores the real-world policy application of the ESF in some of the England's most important conservation areas: National Parks. Firstly, a discourse analysis examines how the ESF has permeated National Park planning. Secondly, elite interviews are used to investigate how application of the ESF has impacted on the National Park Authority's ability to meet their statutory purposes in the case study area of the South Downs. The research finds considerable variation in how the ESF has permeated National Park planning. Ecosystem services terminology was strategically deployed by many National Parks to justify different policies and highlight previously overlooked services. In contrast to the ESF, however, value statements of different ecosystem services rarely took the form of formal valuations. In the case of the South Downs National Park, where the ESF was explicitly and systematically applied, the way the framework was integrated positively contributed towards the statutory purposes. The use of other policies, in tandem with ES policies, reduced potential trade-offs between ES and avoided the specific valuation of ecosystem services. The case study area shows that the ESF, if carefully integrated, has the potential to positively impact planning in National Parks. Nevertheless, if the ESF is more widely implemented, valuation systems of ecosystem services may become more important, particularly outside the confines of a National Park where specific priorities are not laid out by statutory purposes.

1. Introduction

1.1 The History of English National Parks

The origins of English National Parks lie firmly in the post-war reconstruction efforts of the 1940s. Notably, the report of the Scott Committee on Land Utilisation in Rural Areas of 1942 stressed the importance of agriculture and pushed for the preservation of the countryside (Sheail, 1997). Referred to as “the first comprehensive review of rural issues in England and Wales” (ibid, p.387), the report was followed by a 1945 White Paper on the potential of National Parks. Both coincided with the longer-term movement for outdoor recreation. These developments all contributed to the 1949 National Parks and Access to the Countryside Act which chiefly aimed to preserve natural beauty and provide access to the countryside for urban populations.

To enact this legislation the Act created two new public bodies – the National Parks Commission, charged with the creation of National Parks for recreation, and a separate Nature Conservancy, charged with the creation of nature reserves. In England, seven National Parks had been established by the end of the 1950s, with ad-hoc governance systems.

Whilst these areas had protected status, the decades that followed saw considerable decline of landscape and habitat, particularly at the hands of intensive agriculture. The Sandford Review (1974) argued that national park authorities did not have adequate power to sufficiently protect the landscape. Nevertheless, it was not until 1995 that significant reform arrived. The Environment Act of 1995 made two key changes to the National Park system. Firstly, the Act reformed the park governance system - where some parks (such as the Lake District) had operated with independent committees, others had struggled with powerless joint advisory committees made up of the areas’ respective county councils (MacEwen and MacEwen, 1987, p.13). The Act replaced this ad-hoc system with independent unified authorities.

Secondly, the Act revised the statutory purposes for National Parks as follows:

Statutory Purpose 1: To conserve and enhance the natural beauty, wildlife, and cultural heritage of the area.

Statutory Purpose 2: To promote opportunities for the public understanding and enjoyment of the special qualities of the National Park by the public.

In cases of conflict the 'Sandford Principle' (in reference to the Sandford Review) dictates that conservation should predominate.

Following these reforms, in 2005 the New Forest became the first national park to be designated in almost fifty years*, with the South Downs following in 2010. Despite the growth in power and number of National Parks, however, the work of National Park Authorities remained challenging. The need for the Sandford Principle highlighted how recreation and conservation could conflict. Furthermore, British National Parks contain a variety of settlements and much privately-owned land. This means that UK National Park authorities face distinctive development pressures that must be managed through the planning system. In this context, the statutory purposes can be seen as complex challenges for the National Park Authorities which may require innovative solutions.

*though the Broads were given equivalent status in 1987

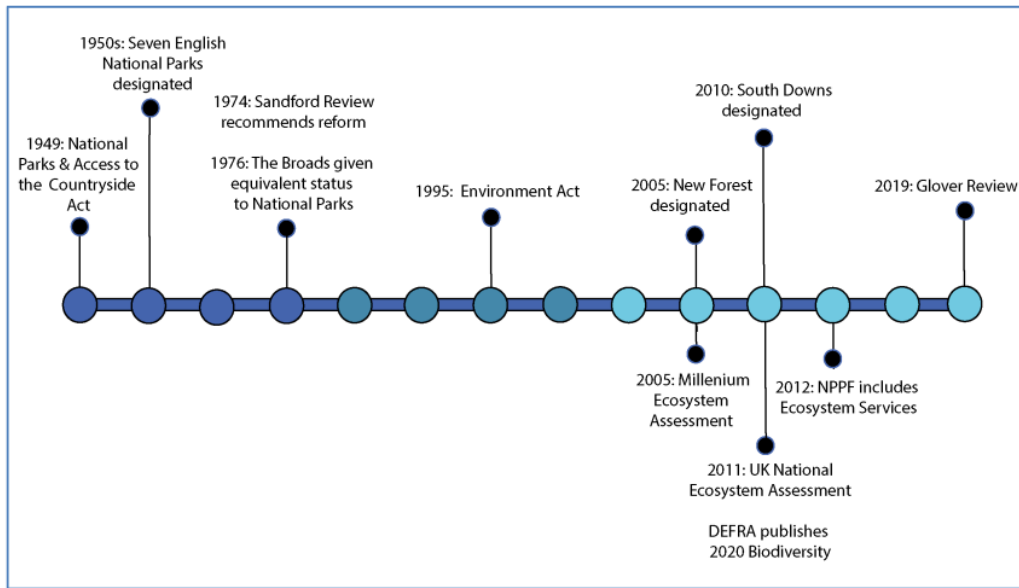


Figure 1: Key Policy Timeline: English National Parks and Ecosystem Services

1.2 The History of the Ecosystem Services Framework

Ecosystem services (ES) can be defined as “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life” (Daily, 1997, p.3). The conditions and processes themselves are not new, but the Ecosystem Services Framework (ESF) captures them together in a consolidated form. By making the many ways nature benefits human life explicit, the ESF promises a strategic approach to conservation and environmental land management.

By mapping, measuring, and assigning specific value to these services, ES can be better factored into policy decision-making. The stock of resources which provide these services is referred to as ‘natural capital’ and the services are most often grouped into four categories favoured by the UN.

These are:

- Provisioning – natural resources which can be extracted such as food
- Regulating – natural moderating processes such as air purification
- Cultural – non-material benefits which contribute to human wellbeing such as recreation
- Supporting services – natural processes which underpin other services such as nutrient cycling

(MA, 2005).

The turn of the millennium saw the ESF move from academia into the world of policy, at both the global and national scale. In 2001, the UN called for an assessment of the world's ecosystems and the services they provide. Their conclusions were published in 2005 in the form of the Millennium Ecosystem Assessment. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services was subsequently formed to continually assess global ES and drive ES policy (IPBES, n.d.). In the UK, a landmark report, the UK National Ecosystem Assessment was published in 2011. It represented the first attempt to take full stock of the UK's natural ecosystem resources. Highlighting dramatic ecological decline over the last 60 years (roughly equivalent to the lifespan of many English National Parks), the report empathized that ecosystems in the UK have been undervalued. The assessment declared that taking account of the full value of ecosystems would lead to better decision-making, greater prosperity, and greater human wellbeing.

The following year, the National Planning Policy Framework (NPPF) stated that "Planning policies and decisions should contribute to and enhance the natural and local environment by... recognising the wider benefits from natural capital and ecosystem services" (DCLG, 2012, p.25). This was supported by other government guidance such as DEFRA's publication "Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services" which emphasized a "strategic approach to planning for nature" and outlined key conservation approaches for nature recovery (DEFRA, 2011, p.6).

During the last decade therefore, the reformed National Park Authorities have been clearly instructed to integrate the concept of ES into planning. Nevertheless, without real precedent, it was less clear how ES could be applied in policy. There has thus been significant policy divergence in the application of the ESF by National Park Authorities. The Landscape's Review of National Parks and Areas of Natural Beauty – known as the Glover Review – upheld the importance of ES (DEFRA, 2019). In fact, the report even recommended reform of the statutory purposes, in part because conservation of wildlife was deemed inadequate, as a commitment to ES. It seems likely therefore that the ESF will continue to occupy an important position in policy discourse, particularly in English National Parks.

1.3 Research Scope & Objectives

The purpose of this dissertation is to examine the conceptual framework in practice. The dissertation will first analyse the way the ESF has permeated English National Park planning before focusing on a case study that has explicitly adopted the ESF.

This research specifically focuses on National Parks in England in order to avoid overlooking the impacts of legislative differences between UK nations. Whilst English and Welsh National Parks come under the same legislation, in Wales additional legislation is influential to national park management such as the Environment (Wales) Act 2016. In Scotland, moreover, the chief legislation is the National Parks (Scotland) Act of 2000. Whilst there are 15 National Parks in the UK, the dissertation will focus on the 10 National Parks in England.

The dissertation seeks to address the following question:

“How effective is the adoption of the Ecosystem Services Framework in helping a National Park Authority to realise their two statutory purposes?”

In order to respond to this question, the dissertation pursues the following objectives:

1. To outline key principles of the ESF in planning.
2. To identify how the ESF has permeated the local plans of national parks (including whether this is implicit or explicit).
3. To analyse the impact of the ESF in planning in the South Downs National Park. This will be explored in relation to the two statutory purposes.

The dissertation will first review key academic literature on both National Parks and the ESF. The literature will be used to address the first objective and outline key principles of the ESF in planning. The two-part methodology explained in Chapter 3 will correspond to the second and third objectives. This will be followed by two respective empirical chapters and a final conclusion.

2. Literature Review

This review first explores significant debates and issues within National Park planning with a focus on land use tensions and the solutions proposed to overcome them. Theoretical critiques to the ESF approach are then debated, as a novel approach to making land management decisions. The review finishes by considering the limited number of studies available on the real-world application of the ESF.

2.1 Land Use Conflicts in National Parks

As working and living landscapes, British National Parks accommodate a variety of land uses, leading to persistent conflicts that have punctuated National Park history. The decades following 1951 (the first park designation) saw diverse land use pulls from military training grounds to national energy infrastructure (MacEwen and MacEwen, 1987). This reflected the notion of the 'National' Park whose function is to meet the national interest. In many cases, this so-called national interest has conflicted with certain interests of local communities – an inherent tension between the local and national which has been much discussed in the literature (Brotherton, 1985, Illsley and Richardson, 2004, Evans, 1997, MacEwen and MacEwen 1987, Tarn, 1987).

A unitary 'national interest' has always been contentious. Perhaps the most significant tension lies between conservation and recreation – a dichotomy formalised by the 1949 Act separating National Parks for recreation and nature reserves for conservation (Bishop et al, 1995, Evans, 1997, MacEwen and MacEwen, 1987). A persistent tension between recreation and conservation cannot be denied. Even walkers can cause ecological disturbance, including to soil moisture, temperature, and fertility as well as soil compaction and erosion (Byrne and Wolch, 2019, p.6). There is understandable concern that increasing access to National Parks may exacerbate erosion (Sharpley, 2012).

Conflicts between conservation of rare habitat and the needs of visitors are analysed by Suckall et al (2009). Their study demonstrates how, in the Peak District, responding to recreational demands may not only conflict with conservation but may also involve balancing heterogeneous visitor expectations. Recreational interests are not singular, as demonstrated in other parks by the conflict between noisy and quiet forms of recreation (Collins, 2011). In other cases, conservation and recreation can align in surprising ways. Evans (1997) highlighted cases of game shooting interest groups joining the conservation cause to prevent wildlife population decline. Interests can therefore conflict and align in diverse ways.

2.2 Solutions to Conflicting Demands

While some degree of land use dispute may be inevitable, many have called for political reform to the National Park governance system to better manage tensions. Among these is the seminal text from 1987, *Greenprints for the Countryside* by MacEwen and MacEwen. A detailed account of the conflicting demands made of National Parks, it argued that much of the land use tension resulted from the ad-hoc system of National Park governance. Published in 1987, the text was too early to respond to the landmark reforms of 1995 - the two statutory purposes and the creation of a uniform system of governance. Whether National Park Authorities now have sufficient political power and direction remains to be seen. However, it is clear that conflicts persist; some even argue conflicts have intensified in recent years. Collins (2011) has argued that since the 1990s (and particularly since the 1992 Rio de Janeiro Summit), increasing drives for environmental action have brought further conflicts to light, particularly over recreational use.

With a strong role to play in addressing the climate and biodiversity crisis, National Park Authorities may need to adopt a radical new approach. Nevertheless, some have questioned whether they are politically able to do so and whether National Park designation is, in itself, effective as a conservation method (Selman, 2009, Sharpley, 2012). Selman (2009, p.142) questions the location of historically designated sites and the merits

of the system if the designated area is surrounded by “ecologically or visually impoverished countryside”.

It seems logical that for the best ecological function, conservation policy should cover not only National Parks but also the surrounding areas. Nevertheless, in the absence of strong nation-wide policy, the National Park system offers some of greatest landscape protection in the UK. For successful conservation in such landscapes, the inherent act of designating a National Park is likely to be less important than the conservation approach that has been taken in park.

2.3 The Ecosystem Services Framework and its Challenges

With an original premise of integrating ecological and economic thinking (Keenan et al, 2019), the ESF has quickly become a leading approach in environmental policy (Chan and Satterfield, 2020). Nevertheless, the ESF is not without controversy.

Perhaps the strongest criticisms are directed at the quantitative valuations at the core of some strands of ESF thinking. Calculation methods used, or hypothesized, have been disputed, but concerns have also been raised about the limits to numerical valuation as a way of valuing the natural world (Chan and Satterfield, 2020, Gunton et al, 2017, Norgaard, 2010). The potential inaccuracies and limitations of calculating economic value are widely acknowledged, including by advocates who attempt these valuations (Constanza et al 1997, Daily, 1997). The debate which emerges is whether an imperfect valuation system is better than no valuation system at all. Constanza et al (1997, p.255) make a convincing argument that “the issue of valuation is inseparable from the choices and decisions we have to make about ecological systems”. Each decision made in land management has implicit value judgements attached. Making these value judgements explicit can be useful, both for legitimising decisions and for making better judgements. Daily (1997, p.2) asserts that constraints on activity are better thought of as “trade-offs” between complex practical and ethical considerations, rather than absolute limits on activity. Important to making these trade-offs is knowledge of the ES provided (De Groot et al, 2010), particularly an

understanding of how changes to the “quantity and quality of different types of natural capital and ecosystem services may have an impact on human welfare” (Constanza et al, 1997, p.255).

Some argue that it is simply impossible for a number to reflect the plurality of ways different people appreciate nature (Gunton et al, 2017). This may be particularly pertinent in the Global South where Sikor (2013) argues ESF thinking has led to exclusionary policies and social injustices. Sikor (2013, p.3) is correct to point out that the ESF denotes a specific way of framing human-nature relations. Chan and Satterfield (2020) also argue that the language of the ESF may alienate certain audiences rather than galvanise the public support needed for environmental action. They question whether the use of figures and statistics is actually helpful in promoting a deeper appreciation of nature in society and argue that focus should instead turn to “stories... quotes, images and videos that viscerally express value, and more directly engage audiences” (p.1030).

Issues of managing public access to resources are complex and place specific. However, with regard to public support and appreciation of nature, it is worth questioning whether appreciation of the intrinsic value of nature and usage of the ESF are mutually exclusive. The UN-led Millennium Ecosystem Assessment acknowledges “the actions people take that influence ecosystems result not just from concern about human well-being but also from considerations of the intrinsic value of species and ecosystems (MA Board, 2005, *Preface*: v). If the purpose is to drive action, it seems logical to suggest that the ESF is one key potential tool that should be used in combination with other methods.

2.4 The Ecosystem Services Framework in Policy

In contrast to the active theoretical debates on the ESF, Rinne and Primmer (2016, p.287) argue that “little attention has been paid to the practical application of the approach” in policy and planning. They state that for the ESF to progress “attention needs to be shifted from concepts and valuation to the actual practice of planning” (ibid, p.288). A limited

number of studies have examined the real-world application of ESF, though results have been interesting.

Much work has found ESF to be implicit in both local and national policy (Rinne and Primmer, 2016, Stange et al, 2022, Matzdorf and Meyer, 2014). Stange et al (2022) found many ESF principles were implicit in green area indicators used by three European cities, with ESF principles in some cases predating the arrival of explicit ESF vocabulary in policy. Stange et al (2022) provide a nuanced evaluation of merits and constraints of a partial or implicit application of the ESF. Keeping ES implicit can reduce information costs for development (an issue that will be discussed below), leading to more flexibility and procedural efficiency for both planners and developers. However, Stange et al (2022) concede that outcome efficiency may be lost in terms of municipality performance targets. The systems studied were also limited by a failure to take the wider area into account. Core to the ESF approach, is a focus on entire ecological systems, discussing the ecosystem at “the relevant spatial scale” (Matzdorf & Meyer, 2014 p.530).

Tensions of spatial scale also arose in Finland, where Rinne and Primmer (2016) found implicit ESF principles coupled with more traditional approaches to conservation and land use planning. Whilst interviewees were positive about the ESF as a complimentary tool to other approaches, the planning system was also found lacking. An example of this was the failure to take into account the beneficiaries of ecosystem services living beyond the boundaries of the local planning authority. Given that tensions already exist between the local and the larger scale in English National Parks, the inability to plan at the relevant scale may pose an unforeseen issue.

As found by Stange et al (2022), a common challenge to the application of ESF at the local scale is information costs. Data from one ecosystem may not always translate onto other ecosystems (Norgaard, 2010, p.1220). Furthermore, it has been acknowledged, since the 1990s, that some ES are far easier to map and assess than others (Constanza et al, 1997, p.258, De Groot et al, 2010). Some take a pessimistic view of these data gaps presenting them as insurmountable and suggesting that ecology, as a discipline, doesn't have the predictive capacity needed to assess the sustainable use of an ecosystem service (Norgaard

2010, p.1220). More moderate calls focus on the need for more empirical information on “the quantitative relationship between land use and ecosystem management and the provision of ecosystem services” at different spatial scales (De Groot et al, 2010, p.264). It is clear that the need for detailed and precise data may present a key difficulty, on the ground, for the practical implementation of the ESF.

Despite a number of challenges, the ESF offers a novel approach to land management which may help address conflicts in National Parks. Whilst it has been deeply polemical at the theoretical stage, far less analysis has been conducted on the ESF in real-world policy. Existing studies have however highlighted different ways in which the ESF may permeate policy partially and implicitly and have described the impacts of the different approaches taken. From the literature above, three key principles of adopting ESF emerge: valuation of ES, trade-offs between different ES and an ecosystem-wide lens.

3. Methodology

3.1 A Two-Stage Approach

This section outlines the two-part methodology and the research ethics throughout the dissertation.

The two-part methodology relates to objectives 2 and 3:

2. To identify how ESF has permeated the Local Plans of National Parks (including whether this is implicit or explicit).
3. To analyse the impact of ES in planning in the South Downs National Park. This will be explored in relation to the two statutory purposes.

3.2 Stage 1: Discourse Analysis

In order to identify how the ESF has permeated planning in National Parks (objective 2), the first stage entailed a document analysis. Document analysis was chosen to “provide an excellent point of entry, both to the formal process and to the informal influences underlying decisions” (MacCallum et al, 2019, p.186). The Local Plans of the ten English National Parks were analysed. Analysis was mostly qualitative with some quantitative notes. First a simple content analysis was conducted to establish the frequency pattern of the phrase ‘ecosystem service’ and note the context in which the phrase was used. This provided an indication of how explicit the National Park’s approach to the ESF was, and which policies they explicitly related to ES.

To go deeper, a discourse analysis was then conducted which used a light coding method. An initial deductive coding frame was devised based on key principles of an ESF approach in planning according to the literature (research objective one). This frame was revised based

on initial findings. One code was found to be redundant in the context of National Park Local Plans while two others were found to overlap.

Given the emerging nature of ESF in national park planning, an overly specific criterion risked missing important data where the ESF had been applied differently in different parks. The final criteria chosen was intentionally broad in order to allow for the different ways in which the framework may have been interpreted.

Code	Objective
Provisioning services	To assess the presence of the types of ES in the Local Plans and which services were more explicitly framed as ES.
Regulating services	
Cultural services	
Supporting services	
Valuation of services	To assess how the principles of the ESF were applied and therefore how ES was being used in decision-making.
Trade-offs between services	
An ecosystem-lens	

Table 1: Coding frame for the discourse analysis

Coding the documents was an iterative process whereby each Local Plan was analysed three times and colour coded with corresponding notes made. Summary tables for each park were created (*see Appendix A for a condensed version*), which allowed for comparison between different Local Plans. In this way a general picture could be built up which showed how the ESF has permeated National Park planning policy.

3.3 Stage 2: Case Study

In order to investigate ecosystem services as a “contemporary phenomenon in its real-life context” (Yin, 1981, p.59), a case study was conducted of the park which had most explicitly applied the ESF. The South Downs was chosen for its explicit and systematic use of the framework. However, document analysis was insufficient to analyse the impact of policies on the ground. To triangulate data gathered from stage 1, elite interviews were conducted with a purposive sample.

A list was created of the key organisational actors in the South Downs considered influential in conservation. With the exception of the Sussex Ornithological Society (which was contacted on social media), individuals within the organisations were researched, whose specific roles were relevant to the dissertation focus. Areas of relevance were considered to be conservation in the South Downs, National Park policy and ES policy. This research was conducted using LinkedIn and the organisations' own websites. Over three rounds of recruitment, individuals were contacted directly to request an interview.

Area of work	Organisation	Role	Anonymised Code	Interview
National	NFU	Senior Planning Policy Advisor	NFU1	Video
National*	RSPB	Policy Officer	RSPB1	Video
South Downs	National Trust	General Manager of South Downs Portfolio	NT1	Video
South Downs	National Park Authority	Landscape & Biodiversity Strategy Lead	NPA1	Video
South Downs	National Park Authority	Development Management	NPA2	Video
South Downs	National Park Authority	Planning Policy Manager	NPA3	Video
South Downs	Estate	Conservation Project Manager	Estate1	Phone
Sussex	Sussex Ornithological Society	Member	SOS1	Phone

*with input from an RSPB colleague in the South Downs

Table 2: Interview participants – key actors in the case study area

Interviews were semi-structured in order to address specific aspects of research whilst maintaining flexibility – “leaving space for study participants to offer new meanings to the topic of study” (Galletta, 2013 p.2). The initial question list was tailored to the organisation and role of the interviewee with topics drawing on findings from the literature review, document analysis, and previous interviews (*see Appendix E for interview topic lists*). Most interviews lasted between 45 minutes and 1 hour and were conducted by video call. The interviews were then anonymised, transcribed, and sent to the interviewees to provide them with the opportunity to make any changes.

Interview transcripts were analysed thematically to draw out the most significant impacts of ES policies. In this way, different perspectives were drawn out on the ESF, conservation policy best practice, conservation in the South Downs and ultimately how ES policies have played out there in practice. Lines of argument were cross-referenced with examples, monitoring reports, and reviews.

3.4 Research Ethics

Risks associated with the research were deemed to be low and were outlined prior to the commencement of research (*see Ethical Clearance pro forma, Appendix B and Risk Assessment, Appendix C*).

In stage 1, all documents (Local Plans) were in the public domain. In stage 2, all participants were fully informed about the nature, duration, purpose, and subject of the research with an information sheet and consent form provided prior to the interview (*Appendix D*).

Interviewees were under no pressure to participate and those who chose to do so provided verbal or written informed consent.

Quotes from interviews are non-attributable and all data were carefully managed in line with UCL policy. Following the interviews, records and transcripts were anonymised with acronyms used instead of names (as per Table 2, p.16).

4. Discourse Analysis

The discourse analysis of Local Plans established how explicitly ES were cited and how different types of ES appeared in the Local Plans. The latter section examines whether the Local Plans reflected deeper principles of the ESF according to the more nuanced thematic analysis.

4.1 Explicit Usage of the Ecosystem Service Framework

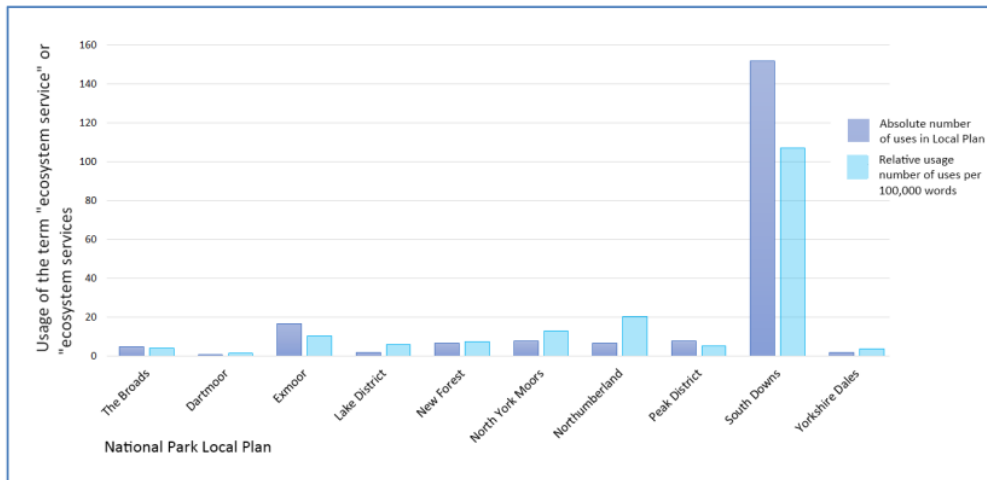


Figure 2: Usage of the term 'ecosystem service' in National Park Local Plans

The document analysis highlighted strong variation between the ten different English National Parks in terms of their citing of ES. Only the South Downs used the term 'ecosystem services' extensively throughout the document. In almost all Local Plans, introductory sections attested that an ES approach had been integrated throughout and was an underlying principle. However, in some cases, this was the only use of the term 'ecosystem services' and no further details were given on which policies related to ES or which ES were being considered. The term was least used in the Dartmoor Local Plan (2021) where 'ecosystem services' was found only in the glossary.

In approximately half of Local Plans that claimed ES was an underlying principle, the concept was closely associated with the term 'sustainable development' (New Forest, North York Moors, Northumberland). Here, protecting, or enhancing the environment's ability to provide ES was stated as a part of sustainable development.

Where the ES was explicitly used in policy, it was generally used to justify the importance of certain natural resources. Policies where ES were most likely to be explicitly cited were (in order of frequency) biodiversity, green infrastructure, pollution, and water policies. Rydin (2003, p.4) asserts that "the legitimization of planning involves rationality claims," suggesting a way of thinking and hence dictating "the appropriate even logical course of action". The explicit use of the term ES therefore serves as a tool to legitimise the deterrence or promotion of different forms of development.

4.2 Different Types of Ecosystem Services

With the exception of the South Downs Local Plan, where ESF was explicit throughout, implicit use of the ES was common. Local Plans discussed all four types of ES: provisioning, regulating, supporting and cultural. Most plans discussed the majority of ES (see Table 3, p20) listed by the Millennium Ecosystem Assessment (MA Board, 2005).

Provisioning services were a key part of all Local Plans, and these services generally corresponded to the park's traditional industries. In some cases, agriculture was also linked to the special qualities of the park – the reasons for the area's designation. Cultural services were often prevalent and easily blended with the park's special qualities. Only a few Local Plans specifically referred to such benefits as ES. Perhaps because provisioning and cultural services have been embedded historically within National Park land use and management, the services were less likely to be framed using the language of ES. It is widely understood that ES themselves are not new, but in some ways constitute "an old idea in new words" (Grunewald et al, 2021 p.5). What has changed is arguably an awareness of the wide variety of services and the attempt to draw all services together into a single framework.

	Cultural Services	Provisioning Services	Regulating Services	Supporting Services
Services found in most or all of National Park Local Plans	Recreation	Agriculture	Flood Management	Biodiversity
	Tourism	Forestry	Water purification	Habitat
	Tranquillity	Minerals /mining	Carbon storage	Soil health
	Spiritual Refreshment	Renewable Energy	Clean air	
	A feeling of wildness	Water		
	Wellbeing			
	Distinctiveness /Sense of Place			
Services found in less than half of Local Plans	Physical health	Fishing	Pollination	Nutrient cycling
	Education		Disease control	Geodiversity
	Inspiration		Erosion control	Mycology

Table 3: Ecosystem services found in National Park Local Plans

Regulating services were most likely to be framed using ESF terminology, which may indicate a perceived need to draw more awareness towards these services as overlooked natural processes. Explicit use of ES for regulating services was often linked to climate policies – itself a key theme in Local Plans. A focus on carbon storage and flood management was common to all parks.

Supporting services exhibited the strongest variation of all ES categories. In some Local Plans they were explicitly framed as the most important of all ES. Biodiversity was often framed in this way, important because of its provision of other ecosystem services. Others treated biodiversity and habitats as separate from ES: for example, where the North York Moors Local Plan (2020) explained the concept of ES, the Plan listed the other three categories but left out supporting services. Biodiversity did however occupy an important place in all Local Plans, though with differing levels of specificity and elaboration in policy.

There is, therefore, variation in how National Park Authorities chose to employ the ESF vocabulary in policy, with some services more likely to be framed using the terminology of ES than others. Park Authorities may deem it unnecessary to frame services already central to National Park planning in the language of ES; instead, they may use the ESF as a tool to highlight previously overlooked services such as carbon storage.

4.3 Thematic Analysis

Delving deeper into how the ESF may be guiding policy, as opposed to simply legitimising it, three themes were identified as underlying principles. Evidence in the Local Plans of each of those three principles, valuation, trade-offs, and an ecosystem-wide lens, will now be discussed in turn.

4.3a Valuation of Ecosystem Services

Grunevald et al (2021, p.6) found policymakers were often in favour of monetary valuations of ES as they were seen as a “powerful tool in discussion with the public”. Nevertheless, in English National Parks a variety of tools were employed to demonstrate the value of different ecosystem services, not just economic valuations.

The type of valuation often correlated to the type of ES. Statistics were most commonly used for cultural and provisioning services to demonstrate their value to the local economy. Common figures included the number of visitors to the park, the number of businesses or the number of employment opportunities it generated. These figures were generally used to provide an economic rationale for policies aiming to support tourism or provisioning services such as agriculture, forestry, and minerals. This usage aligns with the findings of Grunevald et al (ibid), who found that the most reliable monetary valuations, according to policymakers, were for provisioning services, as calculations are based on market products.

For regulating and supporting services, quantitative valuation was scarcer. There were however two notable examples. Interestingly, the Peak District quantified the carbon storage capacity of the landscape, specifically the capacity of the peatland (CO₂/year). As noted, climate change policies were more likely to explicitly use the concept of ES. The Dartmoor Local Plan (2021) used Natural England's biodiversity metric to detail the biodiversity net gain required by development. Following the Environment Act (2021), Biodiversity Net Gain – whereby development will need to deliver a minimum 10% increase in biodiversity – will be mandatory from 2023. It thus seems logical that other National Park Local Plans will follow shortly with increased usage of quantitative valuations of biodiversity.

Overall, however, the value of supporting services, biodiversity, and habitat, was far more likely to be justified through statements of rarity or irreplaceability. Such statements were common to every National Park Local Plan. Often these statements were simple: a particular habitat was irreplaceable. The South Downs was unusual in further elaborating on such statements; “the significance of irreplaceable habitats may be derived from habitat age, uniqueness, species diversity and/or the impossibilities of re-creation.” (South Downs National Park Authority, 2016a, p.62). The rarity of natural capital was used to justify converse policies – the rarity of a mineral justified its extraction to fulfil a human need (as with fluorochemicals in the Peak District), but the rareness of a habitat justified its protection. This seems to suggest that minerals may hold a use value, but habitat may hold intrinsic value.

Whilst Local Plans attempted to show the value of different ES, in many cases the value was often stated – with various levels of elaboration – rather than calculated. Aside from the ES which correspond to the park's industries, attempts at ES valuation across Local Plans were few. Whilst valuation is a significant component of the ESF, it has not strongly permeated National Park planning.

4.3b Trade-offs Between Ecosystem Services



Figure 3: Trade-offs in National Park Local Plans

Opportunities for trade-offs appeared throughout the National Park Local Plans, often framed as conflicts or potential conflicts. Most commonly National Parks Authorities framed tensions as opportunities for ‘win-win’ scenarios, suggesting solutions could arise which provide multiple benefits with no trade-off necessary. This was most common where tensions existed between biodiversity and an impactful land practice such as agriculture or mineral extraction. With mineral extraction, the potential for old sites to be rewilded was framed not as mitigation of ecological damage, but as an opportunity to provide gains in both mineral extraction and biodiversity.

It has been suggested (for example by MacEwen and MacEwen, 1987) that conflict between nature and recreational pressure is inherent to National Park planning given the original separation between nature conservation and recreational amenity. The prominence of this

conflict was clear in all Plans except the Yorkshire Dales' (2016, p.12) which stated that, "Experience indicates that 'Sandford' conflicts tend to be very rare in the Yorkshire Dales." This corresponds to comparatively low levels of both development and recreational pressure in the park. In cases of trade-off between recreation and conservation, the legislation, specifically the Sandford Principle, guides planning policy to conservation suggesting that recreation is a less valued ES in the context of National Parks.

Almost as frequent as 'Sandford' conflicts, were conflicts between renewable energy provision and other ES in the National Parks. Local Plans exhibited varying levels of hostility towards renewable energy infrastructure; all remained cautious but some favoured certain types (the Lake District was alone in its support for wind energy in the park). When justifying opposition to renewable energy infrastructure, Local Plans generally focused on the negative impacts that infrastructure could have on other ES (for example on biodiversity or recreation). Some National Park Authorities also invoked the regulating services the park offered to argue that the park should not have to host renewable energy infrastructure. The Peak District Local Plan (2019 p.81) states that "the National Park already makes a major contribution to the region's carbon management objectives" in terms of peatland carbon storage. More directly, the Northumberland Local Plan (2020, p.65) states that "The National Park's main contribution to national targets will be through its carbon 'sinks' – forests, woodlands and huge areas of peatland". By framing carbon storage as an ES, the park provides to the wider region or nation, the National Park Authority resists further development pressure.

In general, the Local Plans often merely highlighted potential conflict which could arise. Explicit trade-offs were rarely made. Without specific valuation of ES – monetary or otherwise – explicit trade-offs may be more difficult. However, some evidence showed that ES was being used to justify the authority's position on more contentious trade-offs; to underline the severity of potential damages or to justify the park's exemption from certain land-uses.

4.3c Ecosystem Lens

At first glance it appears that National Park Authorities are well disposed to take an ecosystem-wide approach due to their governance of a larger land area. Given that the term 'landscape' is embedded into National Park legislation – as for example in the requirement to create Landscape Character Assessments, it may not be surprising that beyond political administrative boundaries, the 'landscape' is the typical spatial unit used.

Whilst 'landscape' and 'ecosystem' are two distinct spatial units, their meanings are ambiguous, and the terms are often used interchangeably by both ecologists and planners (Naveh 2010, p.64). It therefore seems logical to look beyond semantics when assessing evidence of an ecosystem-wide approach. Naveh (2010, p.67) asserts that ecosystems have loose borders and that most definitions of ecosystems emphasize the “holistic nature of interacting systems” as well as their functionality. Following this line of argument, evidence of an ecosystem-wide approach was taken as instances where an area had been spatially defined by its ecological functions rather than, for instance its aesthetics – as could be said for landscapes.

Each National Park Local Plan contained elements of this approach. An example was policies on water catchment areas and flood zones, where the areas concerned were delineated by an ecological process. However, the most prominent example, was the concept of ecological corridors, found in all Local Plans. Plans encouraged development to consider ecological connectivity and promote corridors where possible, in accordance with the NPPF which has promoted ecological networks since 2011. While this shows that the Local Plans have some level of spatial regard for ecosystems, only the Yorkshire Dales (2016) specifically identified the Park's ecological corridors and charted the networks onto policy maps. Local Plans thus showed elements of an ecosystem-wide lens, around specific policies on water or wildlife, but varied in how actively these were applied.

The South Downs offered the most systematic ecosystem lens and the most explicit spatial focus on ecosystem services. The spatial portrait in the Local Plan offered a detailed

account of the ecological attributes of each area of the park. These areas were not delineated by settlement pattern but by the natural landscape, such as the Western Weald or the River Arun Corridor. Whether these groupings constitute a landscape, or an ecosystem is perhaps ambiguous. However, more important than how the areas are delineated, is that for each area the Local Plan detailed the specific ES provided. Each area is therefore viewed through an ecosystem lens. This approach was mirrored by the South Downs Landscape Character Assessments where the ES of each landscape are mapped out.

It may merit further study to ascertain whether an ecosystem is meaningfully distinct to a landscape in a planning context. Whilst each Local Plan showed some level of spatial awareness around certain ecosystem functions, the South Downs was rare in its full mapping and integration of ecological services – with a far wider variety of policies viewed through this lens.

This discourse analysis shows that in some ways the ESF has strongly permeated National Park planning though in many cases this is implicit. National Park Authorities seemed to cite ES explicitly when looking to emphasize particular services or to justify policy. In terms of valuations of ES and trade-offs between ES, evidence of this in National Park Local Plans is more limited. All National Parks showed evidence of an ecosystem-wide lens around certain types of policy with the South Downs strongly demonstrating this lens throughout the Local Plan. From the discourse analysis, the South Downs emerged as a clear outlier for explicit adoption of the ESF, both in how services in the Local Plan are framed and in terms of how deeper principles of the ESF are embedded. The following chapters will focus on the South Downs as a case study of a National Park that has actively applied the ESF.

5. Case Study

5.1 Introducing the South Downs National Park

The South Downs is England's newest National Park, formally designated on 31st March 2010. The National Park is subject to considerably greater population and development pressure, than other parks. Whilst the South Downs is the third largest by area, with a population of 117,000, it has the largest population of England's National Parks. In addition to this 2.2 million people live within 10km of the National Park. The South Downs is also the most visited National Park in England, receiving approximately 39 million people each year – many of them day visitors (South Downs, 2016a, p.15).

In terms of landscape character, there are a considerable number of settlements. The natural landscape varies, from heavily wooded areas to heathland, chalk grassland and much arable. A chalk ridgeline cuts horizontally through the centre of the park, leading to the coast in the South-East and making up the 100km South Downs way – a popular National Trail walking route. The Park is known for its characteristic rolling chalk downlands and the fine views they offer.



Figure 4: Map of the South Downs National Park

Source: South Downs National Park Authority, n.d.c

The following chapter explores the key impacts of ES policies in the South Downs. In addition to the ES analysis of each spatial area in the National Park, the Local Plan codes policies by their relationship to ES, with site allocations coded by which ES a developer should consider enhancing. The Core Policy SD2: Ecosystem Services states that “Development proposals will be permitted where they have an overall positive impact on the ability of the natural environment to contribute goods and services” (ibid, p.38). To ensure this “development proposals must be supported by a statement that sets out how the development proposal impacts, both positively and negatively, on ecosystem services.” (ibid). In accordance with objective three, to analyse the impact of ES on planning in the South Downs, this chapter will first consider how the ESF may impact the second statutory purpose, before considering in more detail the impact of ESF on the first purpose.

5.2 Educating on the Special Qualities

Whilst the South Downs applied the ESF vigorously and systematically, a key barrier to its implementation was a lack of comprehension of the concept of ES. This lack of comprehension was apparent with host authorities, applicants, and the general public. The general reaction to ES policies was described by a National Park Authority Planning Policy Manager as “a combination of incomprehension and hostility”. A Development Management Officer described an early audit that revealed that many applications determined by host authorities – the neighbouring Local Planning Authorities charged with dealing with smaller applications for the park – “were being determined without having regards to SD2 at all”.

“People have found it difficult to understand and I think that a lot of the literature that I ploughed through on ecosystem services was gobbledeygook. It is. It’s full of jargon and it’s repetitive and it completely turns people off. Just the term ecosystem services I think is awful... When we had duty to co-operate meetings and we would talk about ecosystem services, people would just turn off” – SDNPA3, Planning Policy manager

Similarly, for the general public the language of ES was deemed to be a significant challenge. This has consistently been found by other studies in different geographical contexts (Thompson et al, 2016, Grunewald et al, 2021, Keenan et al, 2019). This lack of comprehension was therefore an initial barrier to implementation however rectifying it became an opportunity, relevant to the second purpose – specifically to promote opportunities for public understanding of the special qualities.

Alongside regular training offered to host authorities, the Park Authority addressed the lack of comprehension by adapting the language used with applicants and the general public. The Nation Park Authority opted for simple language to explain the policy (SD2) and the concept of ES itself.

“We were very nervous about the language, and we tried, if you like, to avoid using the term ecosystem services at least publicly” – SDNPA1, Strategy Lead

Research has shown that even in areas where the public is used to hearing the term ‘ecosystem services’ public understanding remains low (Thompson et al, 2013). The educational approach taken by the authority not only removed an implementation barrier for policy but worked to further understanding of ES in the park. Public information campaigns chose phrases such as “the benefits nature provides for us” (see *Figure 7*). ES are explained in the two Technical Advice Notes (TANs) on the policy, as constituting “what the Park does for us”, and as providing “the essentials of life”. The TAN for householder planning applicants went furthest as an educational tool, not only providing a template for ES action and the ES statement, but also including cartoon graphics to “assist you in thinking about the environmental circumstances of your property”. Especially notable for the householder TAN, these documents move beyond educating on the policy to a real focus on educating on the concept of ecosystem services and the thinking behind it. This educational depth is mirrored by the Local Plan, where the concept was explained several of times using colourful graphics and a coding system (see figure 9 & 10) throughout to demonstrate ES in practice.



Figure 5: An information sign at the Seven Sisters Visitor Centre



Figure 6: Seven Sisters Country Park, the South-eastern corner of the South Downs

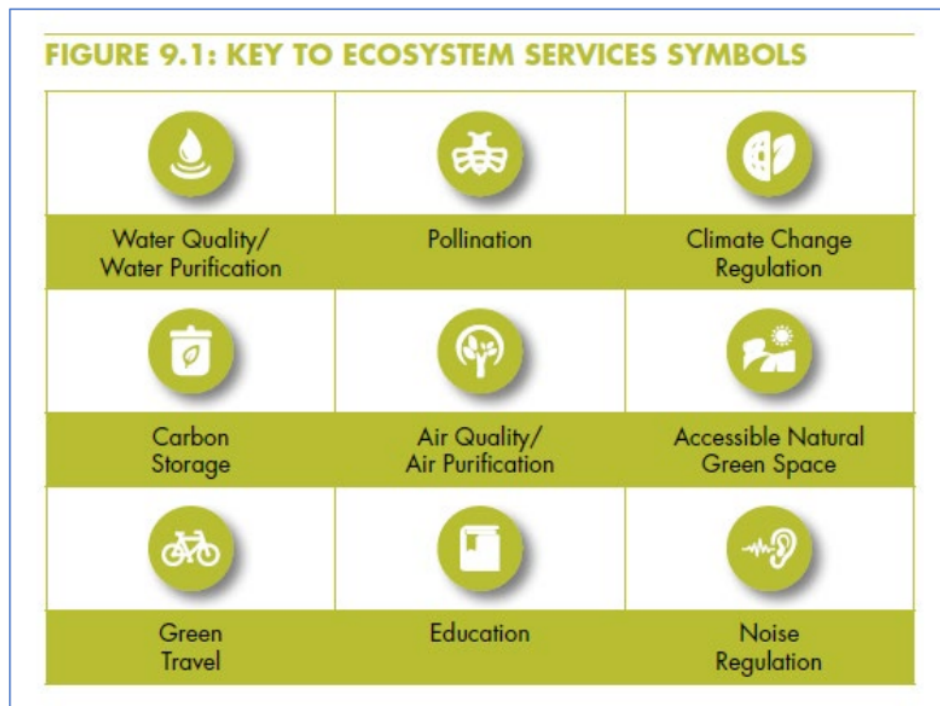


Figure 7: Graphics representing different ecosystem services in the Local Plan site allocations

Source: South Downs National Park Authority, 2016a, p.184

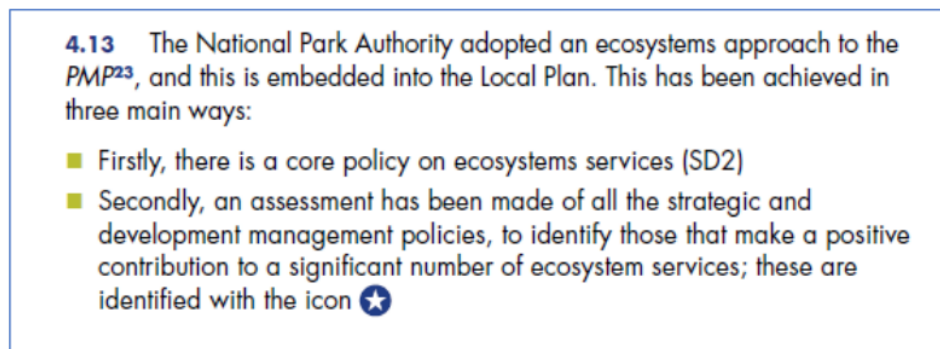


Figure 8: Star icon highlighting contributions to ES made by different Local Plan policies

Source: South Downs National Park Authority, 2016a, p.35

The educational function performed by explaining the policy is reinforced by the cumulative impact of enforcement. Policy SD2 on Ecosystem Services is enforced for every level of planning applicant, not just large developers. Development Manager staff expressed that the cumulative impact of enforcing the policy for householder applicants, helped to educate

park residents on ES even if the practical contributions made towards ES by householders were small.

The second statutory purpose refers to education on the park's special qualities. As demonstrated by the stage 1 discourse analysis, key ES provided by National Parks often pertain directly to the special qualities for which the areas were designated. The South Downs is no exception to this; of the seven special qualities (*see Appendix F*) five can be directly viewed as ES the park provides. For example, the second special quality refers to the rich variety of wildlife and habitat provided by the park. The Ecosystem Services Householder TAN encourages National Park residents to consider the "special animals" in their area (South Downs National Park Authority, n.d.d, p.3). Educating on ecosystem services in the South Downs therefore is educating on the park's special qualities. Whilst the lack of comprehension of ES was an initial barrier, it became an opportunity. By both enforcing an ES policy and educating on its meaning, the National Park Authority contributed towards the second statutory purpose.

5.3 Conserving and Enhancing Wildlife

5.3a Privileging Biodiversity within Ecosystem Services

The way the South Downs National Park Authority has implemented the ESF may thus be supposed as having some beneficial impact on their ability to fulfil the second statutory purpose. However, the links were far more pronounced between the ESF and the first statutory purpose: the conservation and enhancement of natural beauty, wildlife, and cultural heritage. A Senior Development Manager at the SDNPA described ecosystem service policies as "fundamental really, in trying to secure the delivery of our purpose one."

Breaking the first purpose down into its parts, the clearest link to ES policies in the South Downs emerged for the conservation and enhancement of wildlife. A Strategy Lead at the National Park Authority acknowledged that cultural services could in the future be

considered a supporting service given that it pertains to one of the key benefits provided by the landscape. At present, however, cultural services were considered less well integrated into the framework. Furthermore, the discourse analysis highlighted that while cultural services were less likely to be framed explicitly as ES, services such as recreation, tourism and “a sense of place” occupied a prominent place in Local Plans. It can be argued, therefore, that policy provision is already made for cultural services outside of the ESF.

Across all interviews, biodiversity was the concept most commonly linked to ES. Among the many ES provided by the park, biodiversity and habitat provision seemed to occupy a privileged position in terms of receiving benefits from ES policy. The four best practice case studies on the South Downs website all contained green infrastructure installations such as woodland planting, which could benefit wildlife (South Downs National Park Authority, n.d.a). The prevalence of this type of intervention was supported by interview data. Particularly for householder applications, biodiversity provisions were the most likely interventions to emerge from the ES statements and any negotiations. These solutions were seen as “easy quick wins” compared to other types of ecosystem service enhancement. Common provisions included wildflower planting and habitat creation (“stick a bat box up or stick a hedge in”). Whilst it was acknowledged that at the small-scale, a lack of enforcement may present a limitation (“it’s not like we can go round there and see whether they put the bird box up” -SDNPA2), National Park Authority staff stated that “if you add up all of those small things, they do make quite an impact”. This is supported by the 2021 Authority Monitoring Report which reported from a sample of planning applications that a mean average of 36% Biodiversity Net Gain was achieved on site (South Downs National Park Authority, 2021, p.2).

While the cumulative impact of small householders should not be overlooked, this figure is also a result of larger developments. Planning staff stressed that the policy was enforced proportionately thus larger developments are expected to contribute more in terms of scale and ambition.

“If you’re building a two-storey extension, what you can do in terms of ecosystem services is quite limited. But if you’re building ten houses on a field, I want to see your ecosystem services singing and dancing and delivering multiple benefits. Or we will refuse it.” (SDNPA3)

According to a Development Management Officer, the universal and proportionate enforcement of ES policies led to significant benefits from applicants who would not normally make these types of contributions. The benefits for larger developments also seemed more likely to be related to biodiversity and habitat creation.

“With something like telecoms, you’d be surprised but we do get them to do stuff. I dealt with the project for 10 telecoms masts all along the railway line between Portsmouth and London, the section of the line that was in the National Park. After a few refusals, they came to talk to us about what they could do. I mean we had a whole discussion about siting...we also asked them what are you going to do for ecosystem services? Can we see some locally appropriate native planting?” (SDNPA2)

5.3b Multiple Benefits

At all scales, therefore, biodiversity and habitat seem to hold a privileged position in terms of the ES provided. Alongside a perception of ease and lower costs, this preference stemmed from the National Park Authority’s focus on solutions that provide multiple benefits and, where possible, meet multiple policies at once. It was stated that “They can sort of meet SD2, which is our ecosystem services policy, and possibly SD9 [our Biodiversity & Geodiversity Policy] at the same time through the same intervention”. The alignment between Policy SD2 and Policy SD9 is shown in common solutions provided by applicants. One example of this is green sustainable urban drainage – which benefitted both biodiversity and flood management.

Whilst this alignment, or potential overlap, between policies may lead to promising solutions, it raises difficulties for assessing the impact of individual policies. As per the Authority Monitoring Report, it is clear that significant gains have been made for biodiversity (South Downs National Park Authority, 2021). Less clear is whether the gains

are a result of one of the policies in particular, or perhaps the result of increased clout from having both policies in place. It is particularly challenging to isolate the impact of a single policy given that the Local Plan in question is the National Park's first Local Plan: there is no previous South Downs Local Plan to use for comparison.

Considering whether a single policy on biodiversity alone would generate the same benefit, the South Downs can perhaps only be compared to other areas where Biodiversity Net Gain policies are now required nationally as per the Environment Act 2021 (enforced as of 2023). Not only has the National Park exceeded the 10% minimum increase required by National Government, but it also exceeds the policy in scope because national policy exempts many different kinds of applications from Biodiversity Net Gain, including householder applicants. It is not clear whether the National Park Authority would be equally ambitious if solutions demanded only corresponded to meeting one policy – SD9. Whether there is additional clout for applicants because their solution allows them to meet multiple policies can only be speculated on.

A third and final key policy in the Local Plan that often promotes biodiversity gains is SD4 Landscape Character, which promotes landscape-led solutions. This interface between this policy and ES will be explored in the following section.

In terms of the conservation and enhancement of wildlife and the second statutory purpose, ES policies seem at first glance to have contributed significantly through biodiversity gains made by planning applicants. Beyond the ease of providing biodiversity gains as opposed to other types of ES, it is likely that the privileging of biodiversity was a result of the way that the ESF was applied in tandem with other policies.

5.4 Ecosystem Services Framework as a Decision Management Tool

What differentiates the ESF from a policy such as Biodiversity Net Gain is that such a policy simply outlines a preferred outcome, whereas the ESF is promoted as a decision-making tool (Grunewald et al, 2021, Keenan et al, 2019). The ESF directly considers trade-offs

between different services provided, or that can be potentially provided in a given location (Daily, 1997, Matzdorf and Meyer, 2014, Sikor, 2015). This final section considers whether, in the South Downs, the ESF is actually performing this decision-making function and addressing the issue of competing land-uses.

5.4a Decision-Making at Site Level

In terms of competing land-uses, concerns were raised by some conservation groups interviewed that an ES approach, particularly if poorly applied, could conflict with the interests of biodiversity enhancement. The concern here was that, in the ESF, when making a trade-off between habitat and another ES, biodiversity may emerge as the less valued option. The RSPB interviewee, whilst broadly supportive of the ESF stated that “the risk is that biodiversity can sometimes be missed out... a bog can be healthy in storing carbon and water, but we need to make sure there are birds in that bog, there are plants, there are butterflies.” Depending on how the ESF is implemented, these concerns suggest that the application of the ESF as a decision-making tool could actually hinder the first statutory purpose by valuing other priorities.

In the South Downs, biodiversity gains have clearly been made. At the site level, interviewees suggested trade-offs of any kind, including biodiversity and other ES, were in fact unlikely to emerge. Along with SD9 on biodiversity, a third policy, SD4, insists that development should be landscape-led and may drive planning solutions towards biodiversity. Considering the landscape-led approach in practice, this policy appears to have all the merits of a decision-making tool. Solutions and interventions were not only decided based on ease and the provision of multiple benefits, as previously discussed, but by the perceived opportunities and constraints of the landscape. In the Ecosystem Services TAN for householders, the first stage of the section titled “How do I find the best Ecosystem Services actions for my proposal?” asks applicants to consider their environmental constraints and the characteristics of the surroundings. Importantly, this comes before stage 2 – considering the list of prospective ES outlined in the policy (South Downs National

Park Authority, n.d.d, p.3). It's clear that ES and the landscape-led approach are intertwined where decision-making at site-level is concerned.

"It's not like you can just pick one [ecosystem service] off a list and say alright, you can do that if you fancy there. The landscape will tell you what's right and what isn't right... in terms of trade-offs we're not saying 'oh we'd like to see a swale and the applicant would prefer to see a woodland or something like that. The site will tell you what it needs."

- SDNPA2

This idea that the best solution would emerge from the site was also supported by conservationists. An Estate Conservation Manager stated that the appropriate land-use "kind of defines itself, in terms of the landscape and habitats that are already there" (Estate 1). A landscape-led approach was widely advocated by the conservationists interviewed as the best type of conservation policy. The RSPB Policy Officer stated that "the most important [thing] for nature is to protect nature wherever it is" whilst the National Trust, focusing on cultural heritage, stressed the importance of ensuring new designs are sympathetic to their context. This focus appears to reduce trade-offs at the site level and also appears advantageous for the conservation and enhancement of wildlife, and even cultural heritage. In this way, direct valuations of different ES were not made – the correct land-use is not decided, a priori, by which service is deemed the most valuable. The way the ESF has been applied in the South Downs may therefore differ from academic literature but may positively impact conservation and the first statutory purpose.

5.4b An Information Base at the Strategic Level

At the strategic level, the ESF was arguably used in a more standard way to drive decisions. Grunevald et al (2021, p.5) state that "ES help to provide arguments for urban planning decisions aimed at environmental conservation". They explain how, in most countries examined, the ESF is proposed as an "information base" for setting policies or strategies (ibid, p.7). Critics of the ESF see the requirement of gathering large amounts of data as a

limitation. As data does not translate between ecosystems, research needs “to be conducted site by site” with the ecological conditions continuously monitored (Norgaard 2010, p.1222). The South Downs National Park Authority appeared unphased; developing an advanced mapping system to serve as an information base for policy.

The South Downs National Park Authority took a thorough approach to mapping ES, using the Geographic Information System (GIS) mapping software EcoServ. Mapping was undertaken in the early stages of Local Plan production and was referred to by staff as a “spatial targeting tool” that could inform policies – “a decent evidence base for that work” (SDNPA1). The Evidence Report for EcoServ stated that “In terms of the Local Plan, developing a GIS based tool provides us with greater resolution and detail for the Policies Map. It also provides us with important context for major development sites and helps to inform decisions on allocations and strategic sites.” (South Downs National Park Authority, 2016b, p.5).

“With EcoServ if you go back to first principles you think ok ecosystem services, well, what and where? How do we map that across the National Park? To understand what we’ve got and use them to drive decision-making. So, you start with first principles – can we map it? Where is it? What does it look like? What areas are most valuable in terms of delivering multiple benefits? Where are they in relation to our settlements and the local communities that we serve. What does that mean in terms of provision?” (SDNPA1)

Conservationists stressed the importance of policy being led by science and of spatial awareness in biodiversity. The notion of the ‘right tree, right place’ was repeated by different organisations, referring to the careful planning of where it is appropriate to plant different species. The most common example given, with regards to the South Downs, was the importance of chalk grassland to biodiversity, with tree planting in these landscapes considered inappropriate. Ambitious and extensive mapping is thus clearly important to conserving and enhancing wildlife. National Park Authority staff also noted that biodiversity was easier to model than other services, making it easier to integrate into policy. Measurable aspects included pollination (at the catchment-scale), vegetation cover and woodland. Looking at projects and policy, this has been applied, for instance the Bee Lines

project, which aims to create a “road network” of interconnected habitats. Converting arable land to wildflower meadow, the project reported a 72% increase in pollinator species and an increase in species diversity of 98% (South Downs, n.d.b) Tangible gains for the second statutory purpose, in terms of the conservation and enhancement of wildlife can therefore be observed as a result of the ESF evidence base.



Figure 9: Chalk grassland in the South Downs

6. Conclusion

The ESF is an emerging topic in planning policy. This dissertation has considered the application of the SF in a real-world context. With a two-part methodology, the discourse analysis examined how the theoretical framework has permeated planning across English National Parks, while elite interviews explored the impacts of an ESF approach in the context of the South Downs National Park.

6.1 Impact of the Ecosystem Services Framework on National Park Planning

Although elements of the ESF can be found in all National Park Local Plans, even the most systematic and explicit adoption of the ESF varied in key ways from how the ESF was conceived in the literature. The South Downs rigorously applied the ESF; however, other policies, namely policies on biodiversity and the landscape-led approach, guided planning solutions for applicants. Given that National Parks operate within a bounded legislative framework, priorities are already set, namely through the statutory purposes. This application of the ESF in tandem with other policies has brought great benefits to wildlife conservation and the first statutory purpose.

In relation to the mapping of ES, conceived as a barrier by some literature to application, this has allowed the National Park to generate a detailed, spatially, and scientifically informed evidence base which can help improve decisions in line with the first statutory purpose. Furthermore, in the rigorous application of the ESF, the National Park Authority undertook considerable efforts in public education. Given that the ES relate directly to the park's special qualities, educating on the park's ecosystem services aligns with the second statutory purpose.

This work demonstrates how ambitious mapping, education, and integrating the ESF with a suite of other policies can be beneficial for conservation. However, like much of the case study work already conducted on the application of the ESF in policy, the application of the

academic framework can be seen as partial, due to the lack of explicit valuation of ES. A case study of an explicit valuation system, being utilised in a planning context, would make fertile ground for future study.

6.2 Future Policy Considerations

A view shared both by conservationists and the literature is the highly contentious nature of valuating ES. Where other policies guide choices made in the South Downs to reduce the occurrence of trade-offs, explicit valuation of ES are not used. However, if the ESF is employed in other contexts, such as those without a statutory framing, valuation systems may need to be employed in order to ensure the value judgements underlying decisions can be publicly justified and legitimised.

The Glover Review has recommended changing the statutory purposes to include ecosystem services (DEFRA, 2019). Whilst this may provide a boost to the provision of ES in National Parks, problems may arise if valuation systems are not in place. Moving beyond the Sandford Principle, questions would need to be answered about trade-offs between the elements most important to conserve and enhance. It is possible that trade-offs between the conservation and enhancement of biodiversity and other ES would appear, and there would no longer be a guiding legislative frame in favour of wildlife conservation.

Valuation systems have proved the most challenging aspect of much national policy on ecosystem services, notably schemes in the agricultural sector. It is essential therefore that, if the ESF is more widely adopted, the challenge of valuating ES is tackled head-on.

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Appendices

Appendix A: Discourse Analysis Summary Tables

National Park	Cultural ES	Provisioning ES	Regulating ES	Supporting ES
Broads Local Plan 2015-2036 Adopted May 2019 * equivalent status to National Parks	Strongest focus on recreation Tourism identified as the key ES (implicit) Importance of tourism repeated throughout and used as a justification for policy (eg. to maintain water quality) High reliance on tourism is also identified as a weakness.	Agriculture and forestry Agriculture has a key role in maintaining the landscape though reliance on this is listed as a weakness Minerals - brief	Soil protection policies justified by citing NPPF eg. peat soil - references carbon capture (and biodiversity). Benefits of GI include reducing flooding and promoting clean air.	Less references Biodiversity and habitats (lots of stats given).
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	Importance of cultural ES consistently justified using statistics and monetary evaluations. Emotive quotes. Landscapes stated as different from one another but not better or worse (p.72) Wet wildland habitat - the "most important and species rich" (p.174)	Potential tension between tourism, recreation, and conservation. Renewable energy can impact recreation & biodiversity – latter two prioritised	Implicit – lack of has caused problems for biodiversity. Wider lens justified due to flood risk ("catchment-scale approach") rather than ES. Ecological corridors are also a heavily used concept – not directly linked back to ES.	"There is no specific single policy relating to natural capital in the Local Plan, as all the policies aim to protect or reflect our natural capital and what it provides us." (p.5). Most explicit references to ES (using term directly) in GI and soil – respective ES provided are also listed. Water - key focus, described as a resource and an amenity. The importance of water quality is often stated but rarely explained
Dartmoor Local Plan 2018-2036 Adopted December 2021	Cultural ES	Provisioning ES	Regulating ES	Supporting ES
	Tourism less prominent Emotive language in special qualities for cultural services – opportunities to roam Tranquility, spiritual refreshment	More prominent than cultural Minerals prominent Forestry (woodlands referred to as "resource") and farming (important	Peatlands regulating water flow. Biodiversity explained in terms of pollination, regulation of climate change	Biodiversity is justified in terms of ES (doesn't use the term ES but lists services). Habitats part of special qualities of the park

	Dark skies -sense of wellbeing, tranquility etc.	for conservation, and the principle land use in the park) Water Renewable energy encouraged (subject to conditions)		Air and water quality discussed in terms of its importance to habitats and species (not people directly) Biodiversity linked to nutrient cycling, soil health
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	Key idea of net gain- detailed and quantifiable. Use of Natural England's biodiversity metric. Financial contributions can also be made where tangible net gain is not suitable. Priority habitats "designated because of their uniqueness, the species diversity they support and because most take many years to support" (p.34). Dark skies valued as finite resources that have an economic value (not calculated).	Renewable energy on many ES – biodiversity, cultural, regulating Recreation impacts on biodiversity - eg. damage to vegetation Trade-off in ES of woodlands – amenity vs commercial forestry Mineral extraction impact on geodiversity, biodiversity. Site restoration can be a win-win	Comparatively less focus on this. Ecological networks Repeated acknowledgement of the impact of the areas surrounding the park ("this is not a defined area, but a matter of judgement p.31)	Many of the park's listed special qualities framed in terms of ES. Sustainable development framed with an implicit reference to ES.
Exmoor Local Plan 2011-2031 Adopted July 2017	Cultural ES Inspiration, tranquility, recreation Visual amenity Dark skies – boost to tourism Tourism largest employer but doesn't dominate the LP. Major attraction for tourism – biodiversity, tranquility etc. Whole chapter on cultural services – lists the services, discusses recreation and wellbeing. Geological sites – educational benefit GI – wellbeing, physical and mental health of children, education, recreation and more Water - recreation	Provisioning ES Agriculture & forestry Local building materials (stone and wood) Clean water Ecological corridors source of wood GI – local food production	Regulating ES In vision statement under ecosystem benefits – woodland cover and mire which acts as carbon sinks (specific to an ecosystem) – repeated in ecological corridors Objective: maximise carbon storage, minimise pollution, (also to improve air and water quality) GI – climate change mitigation and adaptation. Carbon storage (also in peat and woodland) Water purification, flood protection and more Water – manage flood risk, dilute	Supporting ES Objective – soil quality Habitats incl. ecological corridors Dark sky – impact on other species Biodiversity justified in terms of ES – uses phrase "ecosystem services" – not fully explained but cultural services referenced. Vaguer than Dartmoor. Water supports biodiversity Soil pollution also explained in terms of effect on humans and ecosystems

			pollution/sewage etc.	
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	<p>Use of surveys to show an area is an “important environmental asset for a wide range of people”</p> <p>DM policy condition for “land of high environmental value” – this is not explained</p> <p>Use of sustainable, local materials justified by economic benefit</p> <p>Mitigation and compensation not enough for “irreplaceable habitats”</p> <p>Little use of figures and statistics when valuing ES</p> <p>Selection of local landscapes/green areas identified through consultation then assessed by a professional</p>	<p>Objective: win-win between profitable farming and forestry with enhancing special qualities of the park (this includes habitats and cultural ES)</p> <p>“Government has made a commitment to identify the means of increasing food production in ways that also improve the environment” (p.214)</p> <p>Recreational use can affect geomorphology</p> <p>Mineral policy should maximise carbon storage, ensure soil is in good condition etc.</p> <p>Demand for water supplies from tourism but also for agriculture and local people</p> <p>Wind supply is good but must be “sympathetic” to landscape, tranquility biodiversity etc. (p.106). Though wildlife benefits can be gained from some renewables</p> <p>Biomass crops & hydro schemes impact on water quality (runoff)</p> <p>Can be recreation/ biodiversity win-wins.</p>	<p>Very prominent in this LP.</p> <p>Repetition of intention to co-ordinate with neighbouring authorities. Also, agencies and national bodies – marine, road etc.</p> <p>Ecological corridors - “multi-functional green corridors” (p.13)</p> <p>Includes forests and woodlands</p> <p>Landscapes go beyond national park boundaries – Somerset Ecological Network, North Devon Biosphere Reserve, the coast</p> <p>Identification of Ecological Zones of Influence e.g., Barbastelle bat habitat</p> <p>Water catchment area</p>	<p>Explicit mention of ES in introduction – not in-depth.</p> <p>In the vision “the full benefits of its ecosystems are understood and harnessed” – explained most precisely with provisioning and regulating.</p> <p>Explicit justification of ES for ecological corridors, GI</p> <p>Ecosystem services as a term is used in other contexts but can be non-specific as to which services it refers to.</p> <p>“The need for minerals safeguarding is not considered to be as significant as it is in locations with higher expectations of mineral workings” (p.85)</p> <p>Renewables goes through different ES that could be affected (implicit)</p> <p>Water pollution explained in terms of the ES it may disrupt</p> <p>Partnership Plan – the need to provide ES through farming – lists ES and explicitly mentions the term</p> <p>“13.13 Some enterprises... which nonetheless provide wider benefits (e.g. providing ecosystem services ... can be sustained on relatively low financial returns.” P.367</p>

<p>Lake District Local Plan 2020-2035 Adopted 2021</p>	<p>Cultural ES Tourism - major industry attracted by the scenery. Important to economy</p> <p>Intangible benefits emphasized throughout – inspiration, tranquility “harmony” “The spirit and feeling of the lake district” “Important contribution to the nation’s wellbeing” These are framed as services provided by the park to people, though the term ES is not used</p>	<p>Provisioning ES Farming & forestry. Part of the “distinctiveness” the area</p> <p>Principles of development includes natural capital and “sustainable use of ecosystem services”. This is expanded mainly to provisioning (water, stone, raw materials, energy) and regulating</p> <p>Pro-renewables– hydro, wood, heat pumps, wind (unusual), solar</p> <p>Pro-quarrying – importance nationally, to local vernacular, employment.</p>	<p>Regulating ES Prominent - carbon storage and sequestration, peatland restoration</p> <p>Regulating services expanded on in Principles of Development” focus on the maintaining the above (no net loss) above as well as maintaining “coastal and river processes”</p> <p>Natural flood management</p> <p>No peat extraction – strict policy.</p>	<p>Supporting ES Very little Biodiversity</p>
	<p>Valuation</p>	<p>Trade-offs</p>	<p>Ecosystem Lens</p>	<p>Other Notes</p>
	<p>Visitor numbers</p> <p>“Irreplaceable source of inspiration”</p> <p>Biodiversity net gain – “use of locally defined metric” to secure this.</p> <p>Idea of “universal value” (p.32) – of the “spectacular landscape”</p> <p>Woodlands one of the most valuable and scenic wildlife assets – not elaborated</p>	<p>Impact of agriculture on the Lakes – inhibiting aquatic life and recreational usage</p> <p>Win-win – renewable energy schemes to diversify agriculture.</p> <p>Renewables if badly managed can cause conflicts.</p> <p>Minerals extraction – importance of restoration for biodiversity etc.</p>	<p>Joined-up habitat – ecological corridors.</p> <p>Biodiversity or wildlife corridors may be part of planning obligations</p>	<p>Various non-specific statements particularly in the vision section about improving functions of ecosystems</p> <p>Idea of environmental limits/capacities referenced but not explored ES very explicitly invoked (and listed) to justify biodiversity policies</p> <p>Focus on multi-functional benefits in terms of green space.</p>
<p>New Forest Local Plan 2016-2036 Adopted 2019</p>	<p>Cultural ES Tourism & recreation</p> <p>Natural beauty – primary reason for designation</p> <p>Tranquility</p>	<p>Provisioning ES Farming, forestry and communing – importance also for maintaining the landscape</p>	<p>Regulating ES Flood regulation</p> <p>Trees important for air quality and reducing the effects of heavy rain</p>	<p>Supporting ES Prevention of soil erosion and disease outbreaks</p> <p>“Extraordinary” diversity of plants and animals as a special</p>

	<p>Sense of place & character</p> <p>Trees and gardens important to character and distinctiveness</p>	<p>Commoners and grazing land very important in the NF</p> <p>Use of local materials</p> <p>A focus on local produce – the New Forest brand</p> <p>Sustainable development – provision of food and water</p> <p>Development to manage regard for water as a resource</p> <p>Waterbodies currently prevented from reaching ES potential (including biodiversity)</p> <p>Pro-solar and biomass</p>		<p>quality identified through public consultation (2007)</p> <p>Biodiversity net gain and habitat enhancement in site allocations</p>
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	<p>Visitor statistics</p> <p>Habitats that are deemed “irreplaceable”</p> <p>Farming, communing, forestry and woodland management only provide a small number of local jobs but are vital to land management and cultural identity of the park including commoners animals as a “major attraction</p>	<p>Key - Recreational pressure impact on park’s special qualities and designated sites. Mitigation required from developers for recreational pressure.</p> <p>On-shore wind not appropriate due to conflict with landscape character, tranquillity and wildlife.</p> <p>Importance of sustainable tourism to avoid conflicts between locals, visitors and the environment</p> <p>Potential for recreational horsekeeping to adversely impact landscape and ecology</p>	<p>Calls for inter-boundary co-operation for habitat protection</p> <p>Ecological corridors – this is also explicitly linked to ES (eg. hedgerows as habitat, protecting soil, beauty etc.)</p> <p>“Green Halo Partnership” for new GI – to relieve recreational pressure</p> <p>Water catchment areas</p>	<p>New Forest stated as largely escaping effects of big development and intensive agriculture</p> <p>ES linked to sustainable development and to biodiversity net gain</p> <p>Impact of climate change on ES (relatively explicit)</p>

North York Moors Adopted 2020	Cultural ES Special qualities – dark skies, tranquility, (gradual erosion of this) Spiritual wellbeing (multiple references) Distinctiveness of the landscape Sense of belonging Promotion of sustainable tourism & recreation – “recreational resource” Park “perhaps best known for its iconic heath moorland” GI to also provide recreational benefit	Provisioning ES Agriculture Timber provision Historic mining On-site renewable energy required for development	Regulating ES Carbon sequestration and storage – part of climate change mitigation and adaptation policy Woodland and grassland prioritised for biodiversity Helping the flow of stormwater Soil, air and water quality including groundwater	Supporting ES Water management and soil loss “an issue” p.30 Biological diversity to be enhanced – vision Increase habitat connectivity. GI for biodiversity Geodiversity to be conserved and enhanced – objective In definition of ES, supporting services are not listed as a category. However different supporting services are invoked throughout. Importance of biodiversity explained because of benefits such as pollination, soil health, nutrient cycling, regulation of climate change, clean air and water Dark skies important for wildlife SUDs multiple benefits – also wildlife
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	Moorland – protected landscape for its importance to key habitats and species People’s connection to the landscape demonstrated by artists and number of volunteers Importance of tourism – job numbers and annual income Landscape importance both intrinsic (“for its own sake” p.54) and important for visitors and the economy.	Visitor & recreational pressure potential impact on special qualities, local landscape character, ecology Horse riding may conflict with landscape, natural environment and natural beauty as well as with walkers Wind turbines harmful to landscape character – should be mitigated by positioning,	Biodiversity to be enhanced “at all scales” (p.30) Promotion of Whole Estate Plans in spatial strategy Landscape-wide lens for aesthetics – local distinctiveness Connectivity of GI Tranquillity policy – impact of development outside the park	Introduction – states that the Plan cannot control land cover or land management Minerals and waste not dealt with by the Plan Note on recognising environmental limits in the vision. Sustainable development related to ES Explicit use of ES in Strategic policies on the Environment but ES benefits expected to be demonstrated

	<p>Species prioritised “for which the National Park supports a significant proportion of the regional or national populations and those found at the edge of their range.” (p.56)</p> <p>Some ecological features are “by their nature irreplaceable” so can’t be mitigated or compensated for</p> <p>Tranquil places “highly valued” – rarity, use of surveys to show importance to visitors</p>	<p>materials and colour.</p> <p>Renewable energy may harm nature conservation site or protected species</p> <p>Agriculture should contribute to sense of place – these are interrelated</p>		<p>only “where appropriate”</p> <p>Importance of trees, woodlands and hedgerows explained through ES – more often use the term “environmental benefits”</p>
<p>Northumberland Adopted 2020</p>	<p>Cultural ES</p> <p>3 of 4 given special qualities are cultural: distinctive landscape character, rich cultural heritage and tranquility</p> <p>“The most tranquil place in England”</p> <p>Tourism and recreation development unusually may be permitted in open countryside if need is proven</p> <p>Prioritising of cultural services in farm diversification policies Importance of sports including fishing, shooting, walking and horse-riding</p>	<p>Provisioning ES</p> <p>Highest concentration of agricultural businesses of all English NPs though resident employment numbers have fallen</p> <p>Food production important</p> <p>Fishing</p> <p>Sustainable development includes small-scale renewables</p> <p>Pro-mineral extraction</p>	<p>Regulating ES</p> <p>Water efficiency and quality. Carbon storage and sequestration part of climate policy.</p> <p>Sustainable development includes conserving air, water and soil quality, and protecting and enhancing natural drainage carbon sinks</p>	<p>Supporting ES</p> <p>Remaining special quality – landscape rich in biodiversity and geodiversity</p> <p>Biodiversity and geodiversity part of sustainable development</p> <p>Diversity and disease resilience - in woodlands</p>
	<p>Valuation</p>	<p>Trade-offs</p>	<p>Ecosystem Lens</p>	<p>Other Notes</p>
	<p>Biodiversity – provides ES and economic value</p> <p>Farming (and forestry) dominant industry in the NP – use of stats –</p> <p>Tourism and recreation justified similarly (lower numbers)</p> <p>Visitor surveys - main reasons people visit (tranquility, scenery, open spaces)</p>	<p>Sport and recreational facilities should not “prejudice” national park purposes</p> <p>Tourism and recreation potential conflict with landscape, wildlife and tranquility</p> <p>Grouse moor and forestry management potential conflict</p>	<p>Landscape-scale approach stated as important for biodiversity net gain – conserve and link land habitats</p> <p>Ecological networks</p> <p>“The location of Northumberland National Park ... an important ecological crossroads between other rich habitats” p.57</p>	<p>ES - one of the five strategic priorities</p> <p>Sustainable development directly linked to supporting, regulating and provisioning</p> <p>Woodland landscape explained in terms of ES – mainly cultural and supporting (particularly biodiversity) with some regulating (flood management)</p>

	Minerals deemed essential to the construction industry. To meet needs locally, nationally and internationally	with landscape and views Renewable energy – potential conflict with special qualities, environment Acknowledge potential impact of minerals – all types of ES. Seek a win-win in site restoration with biodiversity		
Peak District Adopted 2011	Cultural ES	Provisioning ES	Regulating ES	Supporting ES
	Tourism and recreation - Challenge to manage Tourism also important - supports services residents need. “Sense of wildness” Tranquility offering “superb recreational and amenity value” (part 2, p.18) Sense of place, distinctiveness Recreation linked to education – “landscape must remain the attraction” – otherwise proposals will be refused. So tourism (implicit) must be an ES) The impact on people who visit for recreation classed as a “material consideration”	Agriculture – businesses to be supported where they conserve and enhance the landscape. Mineral extraction seeking gradual reduction Renewables - hydro Soil, air and water - resources to be conserved (vision), part of the “valued characteristics” of the park	Carbon sinks (peatland) and natural flood management – both come up several times. Very explicit ES in pollution policies – particularly for water quality (and supply)	Soil quality and stability – better management of development Biodiversity and wildlife. In DM policies – protecting biodiversity “equally important” as cultural heritage (Core Policy L2) Loss of connectivity harming biodiversity – explained in detail including genetic diversity. Most clear so far.
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	“Valued by millions of visitors” Beauty that is “more natural” is more important to conserve “in the opinion of the National Park Authority” (p.56). Calculations of peatland’s carbon storage value (CO2/yr) used to justify	Concern about impact of renewables especially wind. Acknowledge short-term (impact on environment) vs long-term (environmental benefit) trade off here. This acknowledgement	Focus on the “Natural Zone” Working with Derbyshire CC re-minerals Division of three distinct areas, which each incorporate different landscapes.	Policies specific to each three area mainly focus on cultural and regulating services. Development not permitted in Natural Zone (NZ)– exceptions might include “work in support of ecosystem services” (p.23, not elaborated on).

	<p>sites of geodiversity importance. Only LP to do this.</p> <p>Rarity of minerals used to justify mineral policy. Importance of the fluorochemical industry nationally</p> <p>“The National Character (NCA) profiles...explains the importance of cultural ecosystem services including a sense of place/inspiration, a sense of history, tranquility and recreation” (p.29)</p> <p>Importance of farming – number of people employed, & proportion of all employment</p> <p>Tourism importance – lots of statistics</p>	<p>also in transport provision policy.</p> <p>Quarries impact on landscape, residents and visitor enjoyment. “Mineral extraction...conflicts with national park purposes set out in the Environment Act 1995”</p> <p>Minerals impact on water quality and soil stability.</p> <p>Conflict between different types of recreation</p> <p>Events permitted except where they conflict with tranquility, wildlife, ecology, other recreation, agriculture etc.</p> <p>Agricultural development in open countryside permitted “to reflect the role of farming in managing landscape” (part 2, p.55) – special status for this reason stressed throughout.</p> <p>Tourism conflict with valued landscape and wildlife</p> <p>Conflict between aircraft (eg. helicopters) and wildlife as well as other recreation.</p>	<p>Different objectives for each</p> <p>Integration of landscape character with land use plans</p> <p>Larger land owners in some areas make management less fragmented</p> <p>Strong awareness of the impact of neighbouring areas and city regions and to some extent the NPs impact on them.</p> <p>Duty of neighbouring authorities to relieve pressure on the NP</p> <p>Ecological corridors</p>	<p>Impact on development in the NZ will need to be carefully watched to ensure no adverse impact on ES (implicit, lists them) – justifies limiting PD and justify planning obligations/conditions</p> <p>Perhaps most explicit references to ES – all types in the pollution policies section – everything from “sense of remoteness” to water quality.</p> <p>In policy DMC14, provisioning and cultural services are separate from the ES interests – which focus on water. Why? ES used here to bring out more subtle impacts?</p>
<p>South Downs Local Plan 2014-2033 <i>Adopted 2019</i></p>	<p>Cultural ES</p> <p>Tourism</p> <p>Education – children & young people</p> <p>Inspirational landscapes</p> <p>“People derive happiness”</p> <p>Tranquility</p> <p>Recreation and leisure</p>	<p>Provisioning ES</p> <p>Farming & forestry – this land covers most of the park</p> <p>Rural supply chains</p> <p>Renewable energy. Wood fuel favoured</p> <p>“Most ecosystem services are provided Park-wide, but the stock of</p>	<p>Regulating ES</p> <p>Carbon sequestration and storage. Attributed to specific areas</p> <p>Chalk aquifer– natural filtering system</p> <p>Regulation of water timing and flows (river corridors)</p>	<p>Supporting ES</p> <p>Key supporting habitat, flora and fauna.</p> <p>Biodiversity & geodiversity permits other ES</p> <p>Genetic dispersal</p> <p>In forestry policies, consideration to be given to mycology and</p>

	<p>Aesthetic qualities</p> <p>Reference to other documents which identify the features which create a “sense of place”</p>	<p>natural capital from which these services flow does vary spatially between the different areas. This differentiation is particularly clear with ‘provisioning services,’ “</p> <p>Chalk aquifer – water provision</p> <p>Potential for viticulture</p>	<p>Vegetation cover removing pollutants</p>	<p>the health of forest soils</p>
	Valuation	Trade-offs	Ecosystem Lens	Other Notes
	<p>Very explicit about conflicts place, type and details eg. Western Wealds conflict between habitats and species and methods of watercress cultivation.</p> <p>Agriculture – loss of land capacity for flood storage</p> <p>Recreational pressure at the coast</p> <p>Strategy to avoid conflict “so that visitors enjoy the National Park without compromising its special qualities. The strategy establishes four themes or ‘lands’ which seek to engage the public, building knowledge and patronage of the National Park. They are Adventure, Cultural, Natural and Working Lands.” P.93</p> <p>Seeking multiple benefits – eg. GI and SuDs</p> <p>Renewable energy and special qualities. Wind and bat populations</p>	<p>Use of EcoServ mapping – which ES are present or in deficit</p> <p>“... has been likened to a European rainforest”</p> <p>Soil fertility – most important agricultural areas</p> <p>Irreplaceable and priority habitats</p> <p>Very specific: “the significance of irreplaceable habitats may be derived from habitat age, uniqueness, species diversity and/or the impossibilities of re-creation.” p.62</p>	<p>“Key message” is that it’s “landscape-led” – which drives the site allocations and policies. Explained with a diagram p.49</p> <p>Spatial strategy drawn in part from geology and geography</p> <p>Landscape-led approach key because landscape underpins all special qualities of the Park.</p> <p>Duty to Cooperate linked to cultural (tourism, natural beauty) and supporting (biodiversity) – strategic issues</p> <p>Areas split into river corridors</p>	<p>ES explicitly used from the foreword to the end. Phrase ES used over 200 times</p> <p>Core Policy SD2: Ecosystem Services</p> <p>Justifies use of ESF “allows the environment to be seen as a valuable asset to society, in a way which can be used to steer growth to the right places, and ensure that growth incorporates features that support these benefits”</p> <p>Each area of the park has its ES listed including challenges and opportunities.</p> <p>Systematic use of colour coding and icons to show how different site allocations and different policies link to different ES.</p> <p>Link ES also to purpose 2 p.35</p> <p>Development proposals must be supported by a statement that sets out how the development proposal impacts, both positively and</p>

				negatively, on ecosystem services. Woodlands, water linked to all four ES
Yorkshire Dales Local Plan 2015-2035 Adopted 2016	Cultural ES “These extensive areas of open upland have particular qualities of tranquility and remoteness that have been protected since the 1980s in recognition of their huge value for public access and recreation” p.17. Then wildlife after Tourism linked to local distinctiveness Public views Historic landscapes Natural beauty – tied in part to geomorphology. Longest cave system, largest waterfall	Provisioning ES Upland farming – crucial to special qualities but in decline as an employer Food production to be supported as a business which “thrive[s] on the park’s special qualities” p.25 Farm diversification can deliver ES (explicit use of term) Quarrying of building stone or quarrying slate. Woodlands producing all ES – including biofuel, shelter, and livestock control Small-scale renewables permitted except wind turbines – justified because of the park’s existing contribution to targets through carbon sinks	Regulating ES Quality of groundwater, air and soil to be safeguarded Watercourses and aquifers within the park Trees reducing flood run-off	Supporting ES Sustainable development linked to biodiversity Geology and geomorphology - importance to scenery and for species and habitat Biodiversity net gain “where possible” Trees preventing soil erosion Almost 30% of park is important habitat – largest of any NP
	Valuation of ES	Trade-offs	Ecosystem Lens	Other Notes
	Park special qualities “not only do these provide the basis for a multi-million pound tourism industry, they are part of the cultural fabric of the area” Visitor numbers and surveys. Agriculture one of the main employers (10%) in the park Landscapes with the park can have great historical	“Experience indicates that ‘Sandford’ conflicts tend to be very rare in the Yorkshire Dales.” p.12 Old quarrying can continue if it can present a win-win between minerals and environment. Also no effect on tranquility etc.	“The Plan is an opportunity to ... for the first time to identify the National Park’s ecological corridors that are important to the movement of wildlife.” p.5 Policy specifically on ecological networks. Cross-boundary planning – river catchment and in relation to agricultural	Green spaces can be protected if they are important for wildlife, cultural services or help mitigate flood risk. “Given that the main harm to the landscape of the National Park has already taken place, the environmental benefits of some continued, carefully managed working

	<p>significance even if not designated</p> <p>Minerals important to the local, regional and national economy</p> <p>“The importance of grouse shooting to the local economy is understood” p.89</p>	<p>Concern about impact of quarrying on water quality</p> <p>Conflicts between different types of recreation (noisy sports and golf courses not fitting within the NP – tranquility.</p>	<p>products, minerals and recreational routes.</p> <p>Open upland area designated through mapping, includes habitat mosaics</p> <p>Ecological networks identified on the policy map. Acknowledges that the map is updated periodically but that ecological networks are dynamic.</p>	<p>can outweigh the environmental disadvantages” p.83</p> <p>Mutual benefits – woodlands. Retaining and enhancing native woodland for supporting and regulating services (policy objectives)</p> <p>Mutual benefits - peatlands.</p> <p>Woodland policies all 4 ES types - make a “disproportionately important contribution to the landscape” – compared to their area coverage</p>
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Sources: Broads Authority (2019), Dartmoor National Park Authority (2021), Exmoor National Park Authority (2017), Lake District National Park Authority (2021), New Forest National Park Authority (2019), North York Moors National Park Authority (2020), Northumberland National Park Authority (2020), Peak District National Park Authority (2011), Peak District National Park Authority (2019), South Downs National Park Authority (2016a), Yorkshire Dales National Park Authority (2016)

Appendix B: Ethical Clearance Pro Forma

Submission Details

1. Name of programme of study:

MSc Spatial Planning

2. Please indicate the type of research work you are doing (Delete that which do not apply):

- Dissertation in Planning (MSc)

3. Please provide the current working title of your research:

National Parks & Eco-systems Services: Two case studies of how this approach impacts an English National Park Authority's ability to meet its statutory purposes

4. Please indicate your supervisor's name:

Yvonne Rydin

Research Details

5. Please indicate here which data collection methods you expect to use. (Tick all that apply/or delete those which do not apply.)

- Interviews
- Documentary analysis – only public documents
- Secondary data analysis

6. Please indicate where your research will take place (delete that which does not apply):

- UK only

7. Does your project involve the recruitment of participants?

'Participants' means human participants and their data (including sensor/locational data and observational notes/images.)

Yes

Appropriate Safeguard, Data Storage and Security

8. Will your research involve the collection and/or use of personal data?

Personal data is data which relates to a living individual who can be identified from that data or from the data and other information that is either currently held, or will be held by the data controller (you, as the researcher).

This includes:

- Any expression of opinion about the individual and any intentions of the data controller or any other person toward the individual.
- Sensor, location or visual data which may reveal information that enables the identification of a face, address etc. (some post codes cover only one property).
- Combinations of data which may reveal identifiable data, such as names, email/postal addresses, date of birth, ethnicity, descriptions of health diagnosis or conditions, computer IP address (of relating to a device with a single user).

No

9. Is your research using or collecting:

- special category data as defined by the General Data Protection Regulation*, and/or
- data which might be considered sensitive in some countries, cultures or contexts?

*Examples of special category data are data:

- which reveals racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership;
- concerning health (the physical or mental health of a person, including the provision of health care services);
- concerning sex life or sexual orientation;
- genetic or biometric data processed to uniquely identify a natural person.

No

10. Do you confirm that all personal data will be stored and processed in compliance with the General Data Protection Regulation (GDPR 2018)? (Choose one only, delete that which does not apply)

- N/A

11. I confirm that:

- The information in this form is accurate to the best of my knowledge.
- I will continue to reflect on and update these ethical considerations in consultation with my supervisor.

Yes

Appendix C: RISK ASSESSMENT FORM

FIELD / LOCATION WORK



DEPARTMENT/SECTION: BARTLETT SCHOOL OF PLANNING

LOCATION(S): UK – SOUTH DOWNS, LAKE DISTRICT NATIONAL PARKS AND DESK
WORK COMPLETED FROM LONDON

PERSONS COVERED BY THE RISK ASSESSMENT: -

BRIEF DESCRIPTION OF FIELDWORK (including geographic location): Interviews at the location of national park authority (Midhurst in the case of the South Downs and Kendal in the case of the Lake District)

COVID-19 RELATED GENERIC RISK ASSESSMENT STATEMENT:

Coronavirus disease (COVID-19) is an infectious disease caused by coronavirus SARS-CoV-2. The virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. Droplets fall on people in the vicinity and can be directly inhaled or picked up on the hands and transferred when someone touches their face. This risk assessment documents key risks associated fieldwork during a pandemic, but it is not exhaustive and will not be able to cover all known risks, globally. This assessment outlines principles adopted by UCL at an institutional level and it is necessarily general. Please use the open text box 'Other' to indicate any contingent risk factors and control measures you might encounter during the course of your dissertation research and writing.

Please refer to the Dissertation in Planning Guidance Document (available on Moodle) to help you complete this form.

Hazard 1: Risk of Covid -19 infection during research related travel and research related interactions with others (when face-to-face is possible and/or unavoidable)

Risk Level - Medium /Moderate

Existing Advisable Control Measures: Do not travel if you are unwell, particularly if you have COVID-19 symptoms. Self-isolate in line with NHS (or country-specific) guidance.

Avoid travelling and face-to-face interactions; if you need to travel and meet with others:

- If possible, avoid using public transport and cycle or walk instead.
- If you need to use public transport travel in off-peak times and follow transport provider's and governmental guidelines.
- Maintain (2 metre) social distancing where possible and where 2 metre social distancing is not achievable, wear face covering.
- Wear face covering at all times in enclosed or indoor spaces.
- Use hand sanitiser prior to and after journey.
- Avoid consuming food or drinks, if possible, during journey.
- Avoid, if possible, interchanges when travelling - choose direct route.
- Face away from other persons. If you have to face a person ensure that the duration is as short as possible.

- Do not share any items i.e. stationary, tablets, laptops etc. If items need to be shared use disinfectant wipes to disinfect items prior to and after sharing.
 - If meeting in a group for research purposes ensure you are following current country specific guidance on face-to-face meetings (i.e rule of 6 etc.)
 - If and when possible meet outside and when not possible meet in venues with good ventilation (e.g. open a window)
 - If you feel unwell during or after a meeting with others, inform others you have interacted with, self-isolate and get tested for Covid-19
 - Avoid high noise areas as this mean the need to shout which increases risk of aerosol transmission of the virus.
 - Follow one way circulation systems, if in place. Make sure to check before you visit a building.
 - Always read and follow the visitors policy for the organisation you will be visiting.
 - Flush toilets with toilet lid closed.
- 'Other' Control Measures you will take (specify):

NOTE: The hazards and existing control measures above pertain to Covid-19 infection risks only. More generalised health and safety risk may exist due to remote field work activities and these are outlined in your Dissertation in Planning Guidance document. Please consider these as possible 'risk' factors in completing the remainder of this standard form. For more information also see: [Guidance Framework for Fieldwork in Taught and MRes Programmes, 2021-22](#)

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.

If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.

Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT

The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard

e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.

Low – interviews will take place in an office environment

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

N/A work abroad incorporates Foreign Office advice

N/A	only accredited centres are used for rural field work
Yes	participants will wear appropriate clothing and footwear for the specified environment
N/A	refuge is available
N/A	work in outside organisations is subject to their having satisfactory H&S procedures in place
N/A	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EMERGENCIES

Where emergencies may arise use space below to identify and assess any risks

e.g. fire, accidents

Low risk due to the location of the research stated above

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

N/A	participants have registered with LOCATE at http://www.fco.gov.uk/en/travel-and-living-abroad/
Yes	contact numbers for emergency services are known to all participants
Yes	participants have means of contacting emergency services
N/A	a plan for rescue has been formulated, all parties understand the procedure
N/A	the plan for rescue /emergency has a reciprocal element
Yes	OTHER CONTROL MEASURES: please specify any other control measures you have implemented: Journeys will be planned in advance and I will not travel when extreme weather warnings are in place.

FIELDWORK 1

May 2010

EQUIPMENT

Is equipment used?

NO

If 'No' move to next hazard
If 'Yes' use space below to identify and assess any Risks

e.g. clothing, outboard motors. -

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

	the departmental written Arrangement for equipment is followed
	participants have been provided with any necessary equipment appropriate for the work
	all equipment has been inspected, before issue, by a competent person

all users have been advised of correct use
 special equipment is only issued to persons trained in its use by a competent person
 OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

LONE WORKING	Is lone working a possibility?	<input type="checkbox"/> YES	If 'No' move to next hazard If 'Yes' use space below to identify and assess any Risks
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*e.g. alone or in isolation
lone interviews.*

Low –Park offices are located in national parks but are in towns not isolated areas.

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
-------------------------	---

<input type="checkbox"/>	the departmental written Arrangement for lone/out of hours working for field work is followed
<input type="checkbox"/>	lone or isolated working is not allowed
<input type="checkbox"/>	location, route and expected time of return of lone workers is logged daily before work commences
Yes	all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
Yes	all workers are fully familiar with emergency procedures
Yes	OTHER CONTROL MEASURES: please specify any other control measures you have implemented: Someone will be aware of my whereabouts on any day where I travel to a National Park or other interview setting. Whenever possible I will avoid walking alone at night, I will keep to busy, well-lit roads, avoid poorly lit or rarely used underpasses and walk facing on-coming traffic to avoid kerb-crawlers

ILL HEALTH

The possibility of ill health always represents a safety hazard. Use space below to identify and assess any risks associated with this Hazard.

e.g. accident, illness, personal attack, special personal considerations or vulnerabilities.

Examples of risk: injury, asthma, allergies. Is the risk high / medium / low? Low – I (the researcher) am in good health with no pre-existing conditions and the research will not be physically demanding.

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

N/A	all participants have had the necessary inoculations/ carry appropriate prophylactics
N/a	participants have been advised of the physical demands of the research and are deemed to be physically suited
N/A	participants have been adequate advice on harmful plants, animals and substances they may encounter
N/A	participants who require medication should carry sufficient medication for their needs

OTHER CONTROL MEASURES: please specify any other control measures you have implemented: I will carry a phone at all times with an emergent contact aware of my whereabouts should help be required

TRANSPORT

Will transport be Required

NO

YES

X

Move to next hazard

Use space below to identify and assess any risks

e.g. hired vehicles

Examples of risk: accidents arising from lack of maintenance, suitability or training
Low

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

Yes	only public transport will be used
	the vehicle will be hired from a reputable supplier
	transport must be properly maintained in compliance with relevant national regulations
	drivers comply with UCL Policy on Drivers http://www.ucl.ac.uk/hr/docs/college_drivers.php
	drivers have been trained and hold the appropriate licence
	there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods
	sufficient spare parts carried to meet foreseeable emergencies
	OTHER CONTROL MEASURES

As stated above I will not travel in extreme weather, journeys will be planned in advance, and a contact will be aware of my travel details at all times.

DEALING WITH THE PUBLIC

Will people be dealing with public

YES

If 'No' move to next hazard

If 'Yes' use space below to identify and assess any Risks

e.g. interviews, observing

Examples of risk: causing offence, being misinterpreted
 Low – small number of elite interviews whose work relates to national park activity (eg. officers from national park authorities)

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- Yes all participants are trained in interviewing techniques
 - NA advice and support from local groups has been sought
 - Yes participants do not wear clothes that might cause offence or attract unwanted attention
 - Yes interviews are conducted at neutral locations or where neither party could be at risk
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented: My emergency contact will be aware of my interview location at all times. Interviews will be conducted in public places or places of work. I will let participants know how much of their time I will need and be calm and polite at all times. I will be responsive to emotional cues given during interviews and not push sensitive topics. I have previous experience in interview techniques from my undergraduate degree.

FIELDWORK 3

May 2010

WORKING ON OR NEAR WATER

Will people work on or near water?

NO

If 'No' move to next hazard

If 'Yes' use space below to identify and assess any Risks

e.g. rivers, marshland, sea.

Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- lone working on or near water will not be allowed
- coastguard information is understood; all work takes place outside those times when tides could prove a threat

- all participants are competent swimmers
- participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- boat is operated by a competent person
- all boats are equipped with an alternative means of propulsion e.g. oars
- participants have received any appropriate inoculations
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

MANUAL HANDLING (MH)

Do MH activities take place?

NO

If 'No' move to next hazard
If 'Yes' use space below to identify and assess any Risks

e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.

Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangement for MH is followed
- the supervisor has attended a MH risk assessment course
- all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities
- all persons performing MH tasks are adequately trained
- equipment components will be assembled on site
- any MH task outside the competence of staff will be done by contractors
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

SUBSTANCES

Will participants work with

NO

If 'No' move to next hazard
If 'Yes' use space below to identify and assess any Risks

Substances

e.g. plants, chemical, biohazard, waste

Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangements for dealing with hazardous substances and waste are followed
- all participants are given information, training and protective equipment for hazardous substances they may encounter
- participants who have allergies have advised the leader of this and carry sufficient medication for their needs
- waste is disposed of in a responsible manner
- suitable containers are provided for hazardous waste
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

OTHER HAZARDS

Have you identified any other hazards?

NO

If 'No' move to next section
If 'Yes' use space below to identify and assess any Risks

i.e. any other hazards must be noted and assessed here.

Hazard:
Risk: is the risk

CONTROL MEASURES

Give details of control measures in place to control the identified risks

Have you identified any risks that are not adequately controlled?

<input type="checkbox"/> NO	<input type="checkbox"/> X
<input type="checkbox"/> YES	<input type="checkbox"/>

Move to Declaration
Use space below to identify the risk and what action was taken

DECLARATION

The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

I the undersigned have assessed the activity and associated risks and declare that there is no significant residual Risk

I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

NAME OF SUPERVISOR

Yvonne Rydin

FIELDWORK 5

May 2010

Appendix D: Information and consent form

Working Research Title: National Parks & Eco-systems Services: A case study of how this approach impacts an English National Park Authority's ability to meet its statutory purposes

Researcher: -

Introduction

You are being invited to take part in a research project being undertaken by a master's student from the Bartlett School of Planning, University College London (UCL).

Before you decide whether or not to participate it is important for you to understand why the research is being conducted and what participation will involve. Please read the following information carefully, feel free to discuss it with others if you wish, or ask the research team for clarification or further information. Please take time to decide whether or not you wish to take part.

Why is this research being conducted?

The aim of this project is to firstly establish how the concept of "ecosystem services" is currently being used in national park planning. Secondly, the research aims to explore the impact of this through a case study of the South Downs National Park, which has explicitly adopted the ecosystem services framework.

Why am I being invited to take part?

You are being invited to take part because of your valuable insight into conservation in the South Downs National Park.

Do I have to participate?

Participation is entirely voluntary. If you do choose to participate and then change your mind, you may withdraw from the research at any time with no consequences and without having to give a reason.

What will happen if I choose to take part?

If you do choose to participate, you will be invited to a telephone interview to explore the topic highlighted above. The interview will last approximately 40 minutes and will be audio recorded (and transcribed at a later date). You will have the opportunity to see the interview transcript and agree any amendments with the researcher after the interview is concluded.

What are the advantages of taking part?

There are no immediate benefits for participating in this project and no financial incentive or reward is offered, however it is hoped that this project will inform on planning in national parks and environmental management planning.

What are the possible disadvantages of taking part?

We anticipate no significant disadvantages associated with taking part in this project. If you experience any unexpected adverse consequences as a result of taking part in the project you are encouraged to contact the researcher as soon as possible using the contact details at the bottom of this page.

If I choose to take part, what will happen to the data?

The interview data will be anonymised at the point of transcription and identified by a general identifier (e.g. 'Planning officer A' or 'Planning consultant B' or a suitable pseudonym). A record of participant identities and any notes will be kept separately and securely from the anonymised data. All data and information affiliated with this project will be securely stored on an encrypted computer drive and physical documents will be stored securely on University property.

The data will be only used for the purposes of this research and relevant outputs and will not be shared with any third party. The anonymised data may be utilised in the written dissertation produced at the end of this project, and this dissertation may then be made publicly available via the University Library's Open Access Portal, however no identifiable or commercial sensitive information will be accessible in this way.

What will happen to the results of the research project?

It is anticipated that the data collected in this project will be included in the dissertation produced at the end of this project, submitted for the award of a Masters degree at University College London (UCL). You will not be personally identified in any of the outputs from this work, and attributions and quotations will be anonymised. If you would like to receive an electronic copy of any outputs stemming from this project please ask the contact below who will be happy to provide this.

Contact Details

If you would like more information or have any questions or concerns about the project or your participation please use the contact details below:

Primary contact-

Role MSc student

Email-

Supervisor Yvonne Rydin

Appendix E: Interview Topic List

Organisation	Key Interview Topics
NFU	<ul style="list-style-type: none"> • PES schemes and their challenges • Future potential for PES and ES in farming • Valuation of ES • National parks and farming
RSPB	<ul style="list-style-type: none"> • Impact of national park designation • Reform of national park system • Impacts of development • Challenges to conservation in the South Downs • Ecosystem Services policy • Good conservation policy
National Trust	<ul style="list-style-type: none"> • Effects of being in the South Downs on properties and countryside sites • Managing recreational pressure on the countryside • Impact of development • Good conservation policy • Conservation priorities in the South Downs • Decision-making on land use and management
National Park Authority (Strategy)	<ul style="list-style-type: none"> • Evidence base & mapping for ES • Valuating ES • Reception to ES policies in the South Downs • Challenges of mainstreaming ES • Statutory purposes in relation to ES
National Park Authority (Development Management)	<ul style="list-style-type: none"> • Planning in the South Downs • Role of ES in policy • Impact of ES policies on planning applications • Response from applicants to ES policies • Trade-offs between different ES • Valuating ES

National Park Authority (Policy)	<ul style="list-style-type: none"> • Role of ES in policy • Challenges of, and reception to implementation of ES policies • Planning in the South Downs • Requirements for development • Valuating ES • Trade-offs between different ES
Estate (Conservation Manager)	<ul style="list-style-type: none"> • Challenges to conservation in the South Downs • Impact of national park designation • Conservation priorities • Good conservation policy • Decision-making on land use and management • Managing recreational pressure
Sussex Ornithological Society	<ul style="list-style-type: none"> • Challenges to conservation in the South Downs • Effects of the national park designation • Views on development • Good conservation policy • Ecosystem Services

Appendix F: Special Qualities of the South Downs



Source: South Downs National Park Authority, 2016a, p.3

FINAL GRADE

GENERAL COMMENTS

/100

Instructor

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