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An evaluation of decisions for aggregates working in designated areas since the introduction of MPS1

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An evaluation of decisions for aggregates working in designated areas since the introduction of MPS1

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Executive summary

Superimposed on the geology of England is a network of sites and areas of national, European and even global value where new proposals for the excavation of aggregates, like other developments, are strictly controlled. Nonetheless, important aggregates reserves continue to be worked within or close to some of these protected areas, making a significant contribution to fulfilling demand. Pressures for the extraction of aggregates poses a challenge: policy aims to continue the protection of designated sites and meet overall demand while facing tougher conflicts everywhere about how land should best be used in the interests of a rising population. This research study examines how the pursuit of these aims has affected decisions on proposals for significant aggregates extraction in practice, both inside and outside key designated sites.

Policy on planning for aggregate minerals in England is set out primarily in Minerals Planning Statement 1 (MPS1), issued in November 2006. The current study examined all significant proposals for aggregates working (taken as being accompanied by an Environmental Statement (ES)) decided by either the Mineral Planning Authority (MPA) or Secretary of State between that date and the end of July 2009. This comprised 60 cases, which were analysed in depth.

The designated areas covered were:

- World Heritage Sites (cultural value);
- Special Areas of Conservation and Special Protection Areas (designated under European law) (wildlife value); and
- National Parks and Areas of Outstanding Natural Beauty (AONBs) (landscape value).

Aggregates proposals were identified as being wholly or partly within one or more of these designated sites (four proposals) or at varying distances from them. The policies in MPS1, aimed at protecting the sites for the qualities for which they were designated, appeared to be working well.

The environmental impacts of all new permissions were examined by analysis of the ES and MPA officers' reports to their committees of councillors, and the approaches inside and outside designated areas compared. This included a review of the topics on which most attention was focused, mitigation measures, and an assessment of any preference for short term impact mitigation or long term landscape restoration. An initial assessment was also made of schemes which might be classified as exemplary in planning and design, either in respect of minimising impacts during operation or in respect of providing beneficial restoration or after-uses (or both). Seventeen sites exemplary in one or other respect were identified, offering approaches, techniques and solutions to typical aggregates planning issues which were considered as transferable to other sites. However, no significant analysis was practical to compare experiences inside and outside designated areas in view of the very small number of proposals within them. The four sites are reported in depth to assess whether attention was properly paid in the decision process to the designations they are associated with. This appeared to be achieved in all cases, though in one – refused permission on unrelated grounds, against officers' advice, and appealed to the Secretary of State – the proper approach to the handling of European wildlife interests, in relation to MPS1, is currently being decided in the High Court (as a result of a further appeal against the Inspector's decision). The overall analysis suggests that **current legislation and policy on the protection of designated areas in England is meeting its objectives.**

An analysis was carried out for the study of public perceptions and degree of acceptance of quarrying, with particular reference to designated areas. This was by means of a desk-based literature review. This identified only a few relevant studies, which often focused on controversial cases, favoured qualitative methods and rarely captured public attitudes directly. However, two UK-based studies addressed attitudes to quarrying, and a range of other

background indicators were informed by studies internationally. UK adults were found to have a generally negative view of quarrying close to their homes, though attitudes were shaped by deeply held values which tended broadly either towards the preservation of natural environments or towards their utilisation. Public attitudes to extraction in designated areas (notably National Parks) are particularly affected by such values, given that these places are recognised in planning policy as well as in local culture as areas where the aesthetics of landscape *should* be preserved, colouring the views of visitors as well as residents.

The research also considered the impact of local cultural pressures on decisions on proposals for aggregates working. The intention was to try to identify, by reference to decisions taken contrary to officers' recommendations, whether underlying forces decidedly sympathetic or unsympathetic to aggregates working were influencing decisions and, if so, whether these correlated consistently with any local circumstances (such as unemployment levels). The study identified eleven such decisions, just one of which was an approval against officers' recommendations for refusal. As only one case was within a designated area, there was an insufficient sample for a further previously-anticipated analysis to examine differences in cultural pressures inside and outside designated areas. In all eleven cases the overwhelmingly important consideration in the decision had been councillors' perceptions of the impact of the proposals on local amenities (in all cases with little weight being given to strategic issues such as the policy for sustaining a sufficient local landbank of aggregates with planning permission). Councillors also appeared to be influenced to some degree by the planning history of the site or the company's past performance. However, conclusions were difficult to draw in the absence of a review – beyond the scope of the current study – of the officers' reports and committees' decisions in the other 49 cases, where comparable issues may have arisen but had different outcomes.

The study concludes with a series of recommendations for further work to enhance the initial findings which the study has established. These recommendations include:

- Investigating the implications for 2042 and beyond of the continued application of MPS1 and related policies;
- Examining the reasons why councillors accepted officers recommendations for the 49 cases identified in this report;
- Gathering primary evidence on public beliefs and acceptance of quarrying;
- Enhancing the site inventory and number of designations examined;
- Identifying transferable lessons from exemplar quarries.

1 Introduction

In August 2008 The Office for National Statistics (ONS) issued a press release stating that the UK population had reached 61.4 million and had grown by an average of 0.5% per year since mid-2001. Population is projected to increase a further 4 million by 2018 and exceed 70 million by 2029. Population density in England is one of the highest in Europe with an average of 395 people in every square kilometre (ONS 2008). Competition for land use is therefore intense, and will continue to intensify. This brings about several challenges for those involved in spatial planning and/or policy making.

The challenge for mineral planning

Mineral resources are vital to maintain a modern society. They play a fundamental role in underpinning the growth of many sectors of the UK economy and in contributing to the UK's high standard of living. Aggregate resources, such as sand and gravel or crushed hard rock are vital to the construction industry which maintains and enhances our built environment and transport infrastructure. Maintaining a steady, continued and adequate supply of these essential raw materials is crucial to the UK economy and society and is a key aspect of national minerals policy and guidance provided in *Minerals Policy Statement 1: Planning and Minerals* (MPS1) (DCLG 2006).

The challenge for environmental planning

The natural environment provides society with a wide range of important benefits (called ecosystem services), including the purification of air and water, regulation of climate, regeneration of soil fertility, and recreation/well being. Environmental/landscape designations have been established in order to help conserve and enhance particular areas and features of environmental interest, to promote nature conservation and ensure diverse habitats. These designated sites are protected through a mixture of UK and EU legislation and, domestic policy, implemented through UK legislation. This legislation needs to be taken into account by Planning officers (e.g. when assessing applications for aggregate extraction) in order to prevent development which would adversely affect important areas of nature conservation. In England, Planning Policy Statement 9*: Biodiversity and Geological Conservation* (PPS9) sets out planning policies for the protection of biodiversity and geological conservation through the planning system (DCLG 2005a). MPS1 refers to PPS9.

The combined challenge

The underlying geology gives rise to the location of aggregates resources but also often contributes to an area's conservation or landscape value. According to a recent MIRO commissioned report on aggregate resource alternatives just under a third (32%) of all active aggregate quarries in England lie within a National Park or Area of Outstanding Natural Beauty (AONB), or are associated with (within 500 metres of) a Special Area of Conservation (SAC)/ Special Protection Area (SPA)/ Site of Special Scientific Interest (SSSI) (Mankelow *et al.* 2008). Between them, these sites extract 47 Mt/y of aggregates, constituting a third of the total yearly supply of primary land-won aggregates in England (Mankelow *et al.* 2007). Although there are many economic benefits brought about by the aggregates industry, the extraction of aggregates does result in some environmental costs. In 2000, the aggregates levy was introduced in an attempt to address some of the environmental costs associated with quarrying (HMRC 2009). The challenge for planners is to ensure that the need for minerals by society and the economy and the impacts of extraction and processing on people and the environment are managed in an integrated way (DCLG 2006). It is the role of the planning system to balance these conflicting demands on land-use in an integrated way and ensure that government objectives for mineral planning, outlined in MPS1, are met. It is increasingly more challenging to do so as importing significant amounts of aggregates is not a realistic option (Brown *et al.* 2008) and the demands

and expectations (in terms of availability of open space) of a rising population are likely to increase. The wider implications of MPS1 for the geographical distribution of mineral supply in future is, as yet, largely unexplored.

2 Minerals policy and environmental designations

In November 2006, as a result of the Planning and Compulsory Purchase Act 2004, MPS1 was published, replacing Minerals Planning Guidance 1 (MPG1), and set out the Government's key planning policies for minerals with policy on protected areas, heritage and countryside appearing principally in paragraph 14 (DCLG 2006). MPS1 did not introduce any substantive new policy on designated areas, instead, it made reference to policies which already exist, but which are held in separate documents. For example, in MPS1:

- National Parks policy derives from the National Parks and Access to the Countryside Act 1949 and the Environment Act 1995, and minerals policy in National Parks has been effectively unchanged since. [1]
- AONB policy was changed as a result of the Countryside and Rights of Way Act 2000 (elevating them to National Park status in landscape and policy terms);
- the approach to World Heritage Sites is fixed in the World Heritage Convention of 1972, though the Government has periodically updated its approach to implementation;
- SPAs and SACs are governed by the Habitats Regulations 1994.

In other words, the main policies applicable to each of the principal designations had been previously established, each at different dates and in different places, and are largely reiterated in MPS1. There are also other initiatives in place which complement these policies, such as the Quarry Products Association (now Mineral Products Association) Four Point Plan which is discussed in more detail in Mankelow et al. (2008).

A short summary of the legislation and the specific components of MPS1 which relate to the designations in this study are provided in Appendix 2. It is this legislation that informs policy and ultimately affects the decisions that are made by planning authorities when considering planning applications for development. A more holistic narrative about each statutory designation type, its legislative history and impact on aggregates working can be found in Mankelow *et al.* (2008).

2.1 MPS1

MPS1 refers the reader to *Planning Policy Statement 9 : Biodiversity and Geological Conservation* (PPS9) (DCLG 2005a) and *Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System* (Circular 06/05) (DCLG 2005b) with regards to effects on European sites, and states that major mineral development would only be permitted in National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage Sites in exceptional circumstances. It is also advised that careful consideration should be given to mineral proposals within or likely to affect any regional and local sites of biodiversity, geodiversity, landscape, historical and cultural heritage. In this way, the national policy appears resolute in its consideration of minerals development within or which affect national environmental/landscape designations. MPS1 states that a national objective is to *'protect internationally and nationally designated areas of landscape value and nature conservation importance from minerals development other than in exceptional circumstances'* The supporting evidence that is necessary to demonstrate these '*exceptional circumstances'* is stated in MPS1 (paragraph 14), but the impact (economic, environmental and

[1] Policy in MPS1 on the tests to apply to new extraction proposals derives in principle and format from the 'Waldegrave test' issued in April 1987, which was repeated in MPG1 in January 1988 and MPG6 in 1989. Small variations were made to the policy in MPG6 in April 1994 (including the additional requirement to consider "*the scope for meeting the need in some other way*"), and again in MPS1 in November 2006 (when the separate consideration of the extent to which extensions would achieve an enhancement of the landscape was dropped). For further information about the Waldegrave test and its evolution, see Brotherton (1989).

social) of the national stance taken with regard to the production of aggregates in designated areas is, as yet, largely unexplored.

Shortly after the release of MPS1, in response to the Kate Barker Review (2006) the government committed, through the Planning White Paper (HM Government 2007), to significantly streamlining the planning policy framework in England to achieve a more strategic, clear and focused framework and to provide an improved context for plan making and decision taking at the local level. In 2008, the Killian Pretty Review reinforced this need to simplify national planning policy and guidance. In response to this, Government have indicated that national policy will be streamlined as and when there is good reason to do so (DCLG and DBERR 2009). Although a formal timetable to review the suite of minerals planning guidance has not been set, MPS1 as a national policy may also be reviewed in the future. The research conducted here may help inform any future review.

2.2 PREVIOUS RESEARCH

Recent research by Mankelow *et al.* (2008) showed that between 1998 and 2005, three new sites, two borrow pits and 46 extensions were granted permission for aggregates extraction in National Parks, AONBs or (in the terminology utilised for the study) associated with SACs/SPAs and SSSIs. These permissions accounted for 7% (52.4 Mt) of all the reserves permitted in England during that period. Further investigations were made for those permissions granted in designations for the period 2002-2005. As all the case data are published, the individual sites involved were traced and details obtained from local Mineral Planning Authority (MPA) staff familiar with them. Only those sites with significant permitted reserves were studied as smaller ones would have little bearing on the overall output of aggregates from designated areas. The analysis undertaken indicated that large-output planning permissions continue to be granted in designated areas. In some cases these were simply because the proposals could be permitted without causing conflicts with the purposes of designation, such as the wildlife value in Longstone Edge (Peak District), Bramshill (Hampshire), and Horse Bank (Sefton). In some other cases, conflicts of interest were established but the designation held to be less important than other interests (including other environmental interests), such as the landscape value in Longstone Edge (Peak District) and the wildlife value in Arcow (Yorkshire Dales).

Having assessed both the planning permissions granted and the volume of reserves released by the granting of new permissions Mankelow *et al.* (2008) suggest that the rate of aggregates working decline in designated areas will be somewhat slower overall than indicated by the production rates current at the time of the study set against the levels of permitted reserves. In addition, the evidence available suggests that designated areas do not impose absolute constraints on aggregates working, and that new permissions can still be granted if the relevant tests are satisfied.

The study undertaken by Mankelow *et al.* (2008) assessed the number of aggregates quarries, the volume of reserves, the volume of sales and the number of new permissions within environmental designations. It also investigated the reasons behind the granting of planning permission for quarries located within environmental designations. By undertaking an analysis comparing the environmental impacts associated with all planning permissions granted both within and outside of environmental designations since the introduction of MPS1 the current study builds upon this previous research.

3 Project aims, objectives and approach

3.1 AIMS

The aim of this project, as set out by the Aggregates Strategic Research Programme, was to use available evidence to evaluate the environmental impacts of granting new permissions within designated sites to enhance the evidence base available for any future review of MPS1. Details of the original invitation to tender for this strategic research project can be found in Appendix 1.

One of the principal aims of this project was therefore to compare the environmental mitigation approaches proposed in the Environmental Statements (ES) for each planning application between sites inside and outside of the specified designated areas (Table 1) and between sites located in different types of designation.

Table 1. Statutory designations for the purpose of this study (i.e. 'specified designations').

Designation	Primary reason for designation
Area of Outstanding Natural Beauty (AONB)	Landscape beauty.
National Park	Landscape beauty and recreational value.
Special Areas of Conservation (SAC)	Ecology and conservation of habitat.
Special Protection Areas (SPA)	Ecology and conservation of habitat.
World Heritage Site	To protect cultural sites.

A report by the UK Minerals Forum (2009) found that "a*lthough a variety of future supply options outside National Parks & AONBs exist for aggregate minerals, these"* also *"present some political, environmental and socio-economic challenges"*. A further aspect of this project was therefore to consolidate existing research on public awareness and attitudes to aggregates extraction and examine evidence on the influence of local pressures on spatial planning decisions, with the aim of providing insight into some of these political and socio-economic challenges.

3.2 OBJECTIVES

The project objectives can be summarised as follows:

1) To include available evidence on the permissions granted within and outside designations since the introduction of MPS1.
2) To include at least National Parks and AONBs and any other types of designation that researchers consider are relevant, and should assess differences in environmental impacts between different types of designation.
3) To consider the environmental impacts of new permissions outside designated sites as a reference point.
4) To include evidence on the public perceptions of aggregates extraction within different designations and outside.
5) To examine the influence of local cultural pressures on spatial planning decisions.
6) To define a programme of further research.

3.3 APPROACH

In order to ensure the project objectives were met, the following approach was taken:

1) A survey of all applications for aggregates extraction in England was conducted for the time period since the introduction of MPS1 in November 2006 to 31st July 2009 and an inventory produced.
2) ES for each application in the inventory were obtained and the mitigation measures at the individual sites identified. The environmental mitigation approaches proposed by each applicant between sites inside and outside designated areas, and between sites located in different types of designation were then compared.
3) Ideal or exemplar quarry applications, which were considered to be of minimal or acceptable environmental impact during operation were identified.
4) An analysis of the public perception and acceptance of quarrying in designated areas through a desk-based literature review methodology was conducted.
5) An investigation into whether, and to what extent, local cultural pressures influence mineral planning application decisions within the specified designated areas (Table1).
6) A programme of work for further research has been identified to ensure that the evidence base available for any future review of MPS1, with respect to future policy on extraction in environmental designations, is both definitive and robust and based on sufficient data.

3.3.1 Methodology used to create an inventory of planning permissions

A list of planning applications for the extraction of aggregates that have been determined (either by the committee decision or a final decision notice) between November 2006[2] and 31st July 2009 were collated. To do this, information about applications (granted or refused since November 2006) was gathered and tabulated from each edition of Mineral Planning Magazine within this time period. The information was then sent out to every Regional Aggregate Working Party (RAWP) Secretary in England for comment. The RAWP secretaries were asked to check whether any data had been omitted or whether any amendments were required.

The next stage of the process was to refine the inventory. In order to be objective in the assessment of the environmental effects of aggregates extraction, it was important to consider like-for-like applications. Only applications for extensions in area or for a new quarry were included in the final assessment. For consistency it was decided that only aggregate applications that were accompanied with an ES and that had been formalised through the issue of a decision notice would be included in the final inventory for analysis. This was to ensure that applications which were, for example, an extension for time and therefore had additional requirement to conduct an ES, were removed. It is a legal requirement that an ES should accompany a planning application which is '*likely to have significant effects on the environment*' in the view of the decision-making authority. Without this information, an objective analysis of the environmental impacts for aggregate production would not be possible.

The final inventory of relevant applications is contained in Appendix 3.

3.3.2 Methodology used to evaluate environmental impacts

To facilitate an analysis and evaluation of the environmental impacts of granting planning permissions within the specified designated areas, the following information was gathered from the corresponding MPA for each relevant application identified in the inventory:

- Non Technical Summary (NTS);
- ES where the NTS was inferior or required clarification;
- Officer/committee reports which included the officer recommendation; and
- Decision Notice and planning conditions.

[2] MPS1 was formally published on 13th November 2006.

The aim of the analysis was to attempt to address the following series of overarching questions:

1. What has been the impact of MPS1 on the granting of aggregate permissions?

2. What are the differences of approach in applying for permission inside and outside of the specified designations?

3. Are there variations in Conditions/Mitigation Measures between the applications inside and outside of the specified designations?

4. Are applications for new quarries dealt with more stringently than extensions to existing permissions both within and outside of the specified designated areas?

5. Can any exemplar applications/operations be identified?

6. What further evidence would be advantageous to gather to inform a review of MPS1?

A proforma questionnaire was developed which could be applied to each of the 60 relevant applications in turn. A series of questions was devised and tested to assist in the analysis. Where possible, only those questions which could be answered objectively were selected for the final proforma. The questionnaire was distilled down to core areas which were designed to achieve the following:

1. Establish whether the specified designations were considered by the applicant and/or MPA and if greater emphasis was placed on any specified designations by applicants, officers, councillors or the Inspectorate/Secretary of State;

2. Determine the extent to which MPS1 was referred to in individual applications and also in applications called in by the Secretary of State and heard at Appeal;

3. Identify the subjects considered in the ES accompanying each application and analyse whether any differences, if identified, can be attributed to the specified designations;

4. Establish whether being inside, outside or adjacent to a specified designation affected the nature and scale of mitigation measures identified from the analysis of ES;

5. Specifically for extensions to existing quarries, establish whether any new specified designation (which had been imposed since the earlier permissions) had any effect on the new application;

6. Examine if there are any differences in the approaches outlined by the applicant in the ES for applications which are affected by more than one of the specified designations;

7. Establish whether there was any difference of approach to restoration/afteruse and to the balance between short term impacts (especially visual) and longer term restoration (especially landform) for applications inside, outside or adjacent to the five specified designations;

8. Establish whether there were potential ‘exemplar’ quarries which combined good planning, design, mitigation and restoration/afteruse using the results from a subjective analysis of an exploratory question;

9. Analyse whether there is variation in the transport mode inside, outside and adjacent to the specified designations;

10. Provide insight into whether local community or politics influenced the determining of applications inside or outside to a specified designation.

In an attempt to avoid bias, six members of staff from various planning and environmental backgrounds were used in teams to complete the questionnaire for each application. Each team cross-checked their results against the results of another team. The final results were then collated and analysed. The proforma questionnaire can be found in Appendix 4. The complete set of results from this analysis (Technical Appendix) can be found in Appendix 5.

3.3.3 Methodology used to investigate public perception and acceptance of quarrying

A desk-based methodology was employed to research available published material relating to quarrying and other relevant industries (e.g. power, mining etc.) with the aim to produce a written analysis of public beliefs, attitudes and acceptance of quarrying within and outside of nationally designated areas of landscape value and nature conservation. Using a variety of search techniques, including electronic databases and contacts with expert individuals, a list of relevant publications was identified and reviewed.

3.3.4 Methodology used to evaluate local cultural pressure influences on decisions

For the purposes of this study, the assumptions are made that a level playing field for the assessment of applications is provided in three ways which influence councillors:

- national planning policy on aggregates working is applicable equally everywhere, and should be taken into account by councillors in their decisions;
- the right of appeal by prospective developers refused planning permission, coupled with an expectation that at appeals Inspectors and the Secretary of State will apply national (and local) policy even-handedly, acts as a brake on councillors departing too far from decisions which can be justified on the facts of the case against the policy background;
- Officers' recommendations in reports to committee are not tainted by local cultural pressures, but are broadly reproducible on the facts of the case by all officers everywhere: councillors must therefore expect to provide an argued justification for not supporting officers' recommendations.

These are effectively constraints on the expression of cultural predisposition for or against quarrying by councillors of MPAs. None of these constraints is a fully effective yardstick against which to assess cultural pressures for departures of view: if they were there would be no need for councillors, as the officers' recommendations would be 'right' and invariably upheld by Inspectors and the Secretary of State should any decision be taken finally at that level.

Despite the limitations, this study has taken officers' reports, with their analysis and recommendations, as the best indicator of independent assessment of the merits of each case – the yardstick against which decisions can be judged. Interest is focused on those cases in which officers' recommendations are not accepted: permission granted despite recommended refusal and permission refused despite recommended approval. The influence of councillors' views can be gauged from the minutes of the decision-making committee (it is assumed), and from the reasons given for the decision reached (stated on the decision notice). In principle there should be scope to assess any geographical pattern of decisions emerging, to see if any area is more inclined to assert pro- or anti-quarrying tendencies and whether this correlates with any other data.

In the first instance the analysis addresses all cases of overturned recommendations. A subset of these cases will be those sites within designated areas. The intention in those cases is to establish if there is a cultural approach in support of mineral working by requiring no higher standards of operation within these designated areas than outside them.

3.4 ASSUMPTIONS AND LIMITATIONS OF THIS STUDY

3.4.1 Environmental designations included in the study

For the purpose of this study, National Parks, AONBs, SPAs, SACs and World Heritage Sites have been selected for analysis (as shown in table 1). With the exception of World Heritage Sites, these correspond to the designations considered by the Aggregate Resource Alternatives (Mankelow *et al.* 2008) study and specifically referred in MPS1. SSSI's were not included as they were considered too numerous for the time allocated to this project[3]. It is recommended that SSSIs be considered in any future analysis. The study focused on aggregates working in relation to these five designated areas of national or international importance. Sites outside of these, as well as inside, were evaluated to explore the impact of each designation.

3.4.2 Study period and sample size

For the purpose of analysis, this study has considered applications for planning permission for the extraction of aggregates in England since the introduction of MPS1 in November 2006 to 31st July 2009. Sixty relevant application sites were identified in this period. Where additional information about these sites has become available since July 2009 (i.e. subsequent to the original analysis) to the date of publication (30th November 2009), the authors have tried to include this information as textual commentary when appropriate to do so.

The sample size of applications identified within designated areas (four) is too small to usefully compare against applications outside designations (56). This also extends to the cultural analysis undertaken where the sample size is too small to conduct any worthwhile analysis of the factors which might correlate with the observed pattern of overturned officers' recommendations. Extrapolation of the findings observed in this study should therefore be approached with caution.

3.4.3 Relevant applications

For the purpose of this study, relevant applications in England were defined as those applications which:

- were at least partially for aggregate extraction of aggregate minerals (hard rock or, sand and gravel);
- were granted or refused planning permission after the introduction of MPS1 (November 2006) (determination is deemed not to have occurred unless a decision notice has been issued either by the MPA or by the Secretary of State);
- removed in-situ mineral (i.e. not applications related to plant, extensions of time or working hours, or similar variations of conditions[4]);
- were accompanied by an ES; and
- applied to new quarries, extensions to existing quarries and satellite quarries using existing plant.

[3] As of June 2005, there were 4,101 SSSIs in England (Mankelow *et al* 2008).

[4] In June 2007, Tarmac Ltd submitted a planning application (C/23/67G) to the Yorkshire Dales National Park Authority to request permission for the continuation of working until 2030 and to extend the area of extraction within its existing planning application boundary at its rail-linked limestone quarry at Swinden, near Skipton. The proposal sought to extend the life of the existing quarry rather than increase the annual output extracted and did not therefore fall within the criteria for "relevant applications". The planning application was approved by the Yorkshire Dales National Park Authority Planning Committee in November 2008 and is (to date) awaiting completion of legal agreement. As a condition of the approval, Tarmac will close and fully restore the nearby Threshfield Quarry by 2011, surrendering 24 Mt of reserves at this site. The approval means that an extra 24 Mt of limestone can be extracted from new workings at Swinden that are already within the original planning permission boundary.

3.4.4 Aggregates as a by-product

Mineral applications whose primary function was not aggregates extraction, but included aggregates extraction as a by-product, were discounted from the analysis. The underlying reason for this was to ensure a scientific comparison was conducted. The part of the application dealing with the non aggregate material (e.g. silica sand) could have different conditions and equipment needs to that of an application whose primary extraction was for aggregate. The corresponding ES for these applications would have to take into consideration the needs of the non-aggregate mineral as well as the aggregate mineral, so applications such as Wrotham Quarry, Kent (application TM/07/2545) were not included in our final analysis (Appendix 3).

4 Analysis of decisions on aggregate planning applications (since November 2006)

4.1 INVENTORY OF AGGREGATE PLANNING APPLICATIONS

The final inventory used for assessment comprised 60 applications of which there were:

- 16 new quarries;
- one section 73 application (i.e. a variation of a condition to an existing permission) to amend a condition to allow mineral extraction to take place (Ball Mill Quarry (1): Church Farm South - Worcestershire);
- one variation in the areal extent of extraction (Wetherden Quarry, Suffolk);
- one application for deepening (Broadway Quarry, Worcestershire);
- one variation to extend and consolidate mineral extraction operations to secure planning permission for sand and gravel extraction (Must Farm, Cambridgeshire); and
- 40 applications for extensions to existing quarries.

The distribution of application types for the relevant applications considered in this study is shown graphically in Figure 1. A detailed list of the relevant applications included in this study can be found in Appendix 3.

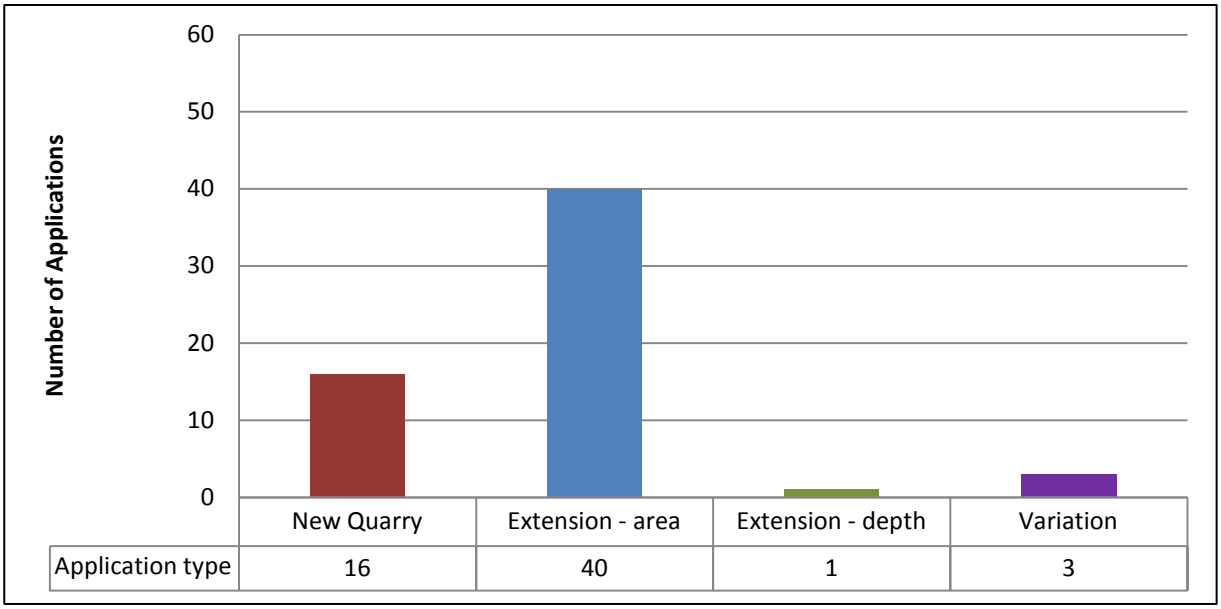


Figure 1. Distribution of application types for the 60 relevant applications analysed.

4.2 DETERMINING APPLICATIONS *"WITHIN"* OR *"OUTSIDE"* OF THE SPECIFIED DESIGNATIONS

The planning application (red line) boundary for each relevant application was digitised and incorporated into a Geographical Information System (GIS) in order to conduct a spatial analysis of the data. The distances from each application boundary to each of the nearest specified designation boundaries were then calculated. To facilitate the analysis the distances were grouped into range categories. These categories are shown in Table 2 and have been applied to the analysis throughout this report.

Table 2: Distance categories from environmental designation used for spatial analysis.

Category	Description	Usage of terminology
A	Application is wholly or mostly within the designated area.	"Within" a designated area for the purposes of this study.
B	Application is partly within the designated area.	"Within" a designated area for the purposes of this study.
C	Application borders the designation.	"Adjacent" to a designated area for the purposes of this study.
D	Application boundary is located within 1 km of the designation boundary.	"Adjacent" to a designated area for the purposes of this study.
E	Application boundary is located more than 1 km away, but less than 5km, away from designation boundary.	"Nearby" a designated area for the purposes of this study.
F	Application boundary is located 5 km or more, but less than 10 km, away from designation boundary.	"Outside" a designated area for the purposes of this study.
G	Application boundary is located more than 10 km away from designation boundary.	"Outside" a designated area for the purposes of this study.

Any application with a distance category A or B, which is considered to be "*within*" an environmental designation will be required to consider the implications of aggregates working on the specified designation. Those applications with distance category C or D are considered to be "*adjacent*" to, but not within, the designation boundary. Applications classed as category E are within 5km of the designation boundary and are classed as "*nearby*" for the purposes of this study. Applications classed as category C, D or E may still require the effect of aggregates working on the designation to be considered. Categories F and G distances are deemed to be "*outside of*" a designated area as they are far enough away from a designation to be considered as having no impact on it for the purposes of this study although in strict policy terms they might have.

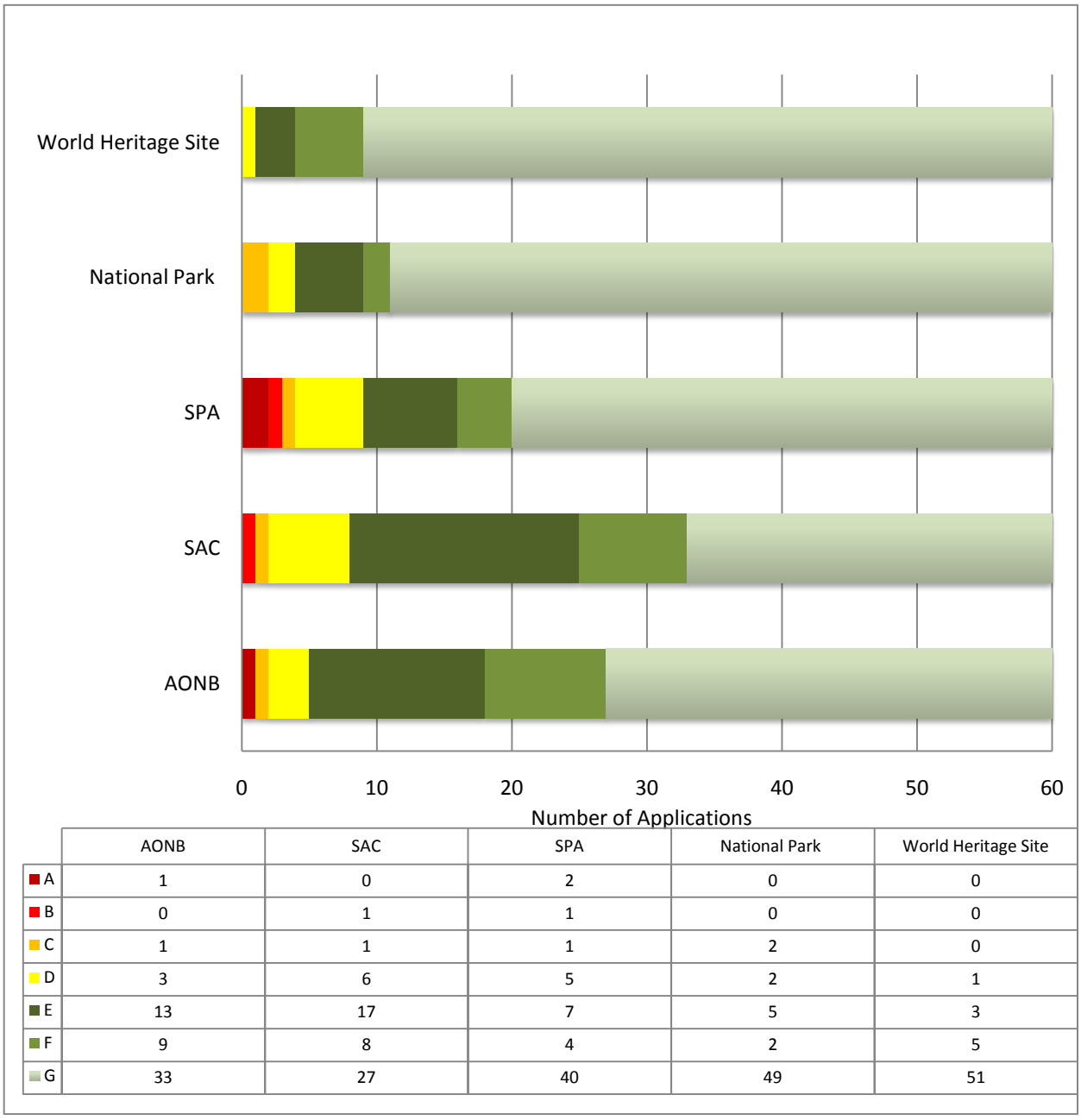
4.2.1 World Heritage Sites and their Buffer Zones

"*World Heritage Sites are of outstanding universal value to the whole of humanity*" (DCLG 2009). The Government has encouraged the inclusion in development plans of policies to protect World Heritage Sites, which has broadly been achieved, and also the development of non-statutory management plans. The DCLG *Circular on the protection of World Heritage Sites* (7/2009) encourages planning policies for the protection and use of World Heritage Sites. Guidance is given to local planning authorities to take account of the need to protect and conserve the World Heritage Site and to ensure that policies for the protection and sustainable use of a particular World Heritage Site should apply both to the site itself (i.e. its core area) and, as appropriate, to its setting, including any buffer zone or equivalent. A buffer zone is defined as an area surrounding the World Heritage Site which has complementary legal restriction placed on its use and development to give an added layer of protection to the World Heritage Site and should be achieved in the same way as for the World Heritage Site itself. For the purposes of this study, the distance from the application boundary to the boundary of the World Heritage Site Buffer zone (if one exists) is used. If only a core area exists, it is the distance to the boundary of the core area which is used.

4.3 SPATIAL ANALYSIS

Figure 2 shows the 60 relevant applications and their distance to the nearest environmental designation for each designation type. It is clearly shown that very few applications (four separate applications) were classified as either category A or B i.e. "*within*" a specified

designation. These four applications, shown in Table 3, were all extensions to existing sites (Figure 4). The restricted sample size limits any extrapolation and interpretation of the results.



	AONB	SAC	SPA	National Park	World Heritage Site
A	1	0	2	0	0
B	0	1	1	0	0
C	1	1	1	2	0
D	3	6	5	2	1
E	13	17	7	5	3
F	9	8	4	2	5
G	33	27	40	49	51

Figure 2. Number of applications falling within each distance category for each designation.

Of the four applications that were submitted "*within*" the specified designated areas (categories A and B), only one application, Busta Triangle in Hampshire, was refused. This was within an SPA (Figure 3).

Of the applications that were submitted which bordered the boundary of designated areas (i.e. category C), three were granted (Low Lane - Wiltshire, Land off Avon Common - Dorset, and Brassington Moor - Derbyshire) and one (Lavant Quarry, West Sussex) was refused. The applications at Low Lane and Brassington Moor were for extensions to existing quarries whilst the application at Land off Avon Common was for a new quarry. The application at Lavant, which was refused permission, was for a new quarry (Figure 4).

Table 3: Applications within specified designations.

Name	Application type	Designation(s) application is within	Designation Name	Decision *
Marston's Quarry (Suffolk)	Extension - area	SPA	Breckland SPA	Approved
Busta Triangle (Hampshire)	Extension – area	SPA	Thames Basin Heaths SPA	High Court Decision Awaited
Plumley Wood & Nea Farm (Hampshire)	Extension – area	SPA/SAC	Avon Valley SPA and River Avon SAC	Approved
Broadway Quarry (Worcestershire)	Extension - depth	AONB	Cotswolds AONB	Approved

* Decision as at 31st July 2009.

Figure 3 shows that few applications have been submitted within the specified designated areas (four separate applications) since November 2006 and none were submitted in National Parks or World Heritage Sites. The number of applications submitted increases with distance from the associated environmental designation type (category G includes any applications which are more than 10km from a designation and therefore will skew the spread of data).

The apparent difference in amount in Category G in Figure 3f compared to the previous figures is a result of the designations being combined. Essentially it is showing that most applications are within 10km of at least one specified designated area (i.e. 15 of the 60 applications are more than 10km away from all five of the specified designations).

Figure 4 shows that of the relevant applications submitted within the specified designated areas since November 2006 none were for new quarries. Applications for wholly new quarries in the study period only occurred adjacent to and outside of the specified designations (distance categories C-G). Once again, the apparent difference in amount in Category G in Figure 4f compared to the previous figures is a result of the designations being combined.

Table 4. Overview of relevant applications and distance category to nearest environmental designation.

Name	WHS	SPA	SAC	National Park	AONB	Application type	Decision#	MPA
Brassington Moor Quarry, Longcliffe	E	F	D	C	G	Extension - area	Granted	Derbyshire CC
Thrumpton's land	G	G	G	G	G	Extension - area	Granted	Derbyshire CC
Shawell Quarry	G	G	G	G	G	Extension - area	Granted	Leicestershire CC
North Kelsey Road Quarry	G	G	G	G	E	Extension - area	Granted	Lincolnshire CC
Norton Bottoms Quarry	G	G	G	G	G	Extension - area	Granted	Lincolnshire CC
Norton Disney Quarry	G	G	G	G	G	Extension - area	Granted	Lincolnshire CC
Red Barn Quarry, Castle Bytham, Stamford	G	G	F	G	G	Extension - area	Granted	Lincolnshire CC
Tattershall Thorpe	G	G	G	G	G	Extension - area	Granted	Lincolnshire CC
East Leake Quarry	G	G	G	G	G	Extension - area	Granted	Nottinghamshire CC
Sturton Le Steeple	G	G	G	G	G	New Quarry	Granted	Nottinghamshire CC
Black Cat Island	G	G	G	G	G	New Quarry	Granted	Bedfordshire CC
Broom Quarry & land east of Gypsey Lane	G	G	G	G	F	Extension - area	Granted	Bedfordshire CC
Medbury Farm	G	G	G	G	G	New Quarry	Refused	Bedfordshire CC
Willington Quarry	G	G	G	G	G	Extension - area	Granted	Bedfordshire CC
Little Paxton Quarry	G	G	F	G	G	Extension - area	Granted	Cambridgeshire CC
Must Farm	G	D	D	G	G	Extraction of sand & gravel	Granted	Cambridgeshire CC
Pentney	G	F	F	G	F	Extension - area	Granted	Norfolk CC
Chilton Estate (1)	G	G	G	G	F	New Quarry	Refused	Suffolk CC
Chilton Estate (2)	G	G	G	G	F	New Quarry	Refused	Suffolk CC
Marston's Quarry	G	A	D	G	G	Extension - area	Granted	Suffolk CC
Wetherden Quarry	G	G	G	G	G	Variation - area	Granted	Suffolk CC
Divethill Quarry	F	G	G	G	G	Extension - area	Granted	Northumberland CC
High House Quarry	E	E	E	G	E	Extension - area	Granted	Cumbria CC
Overby Quarry	D	E	E	G	E	Extension - area	Granted	Cumbria CC
Roan Edge Quarry	G	G	E	E	G	Extension - area	Granted	Cumbria CC
Tendley Quarry	F	G	D	E	F	Extension - area	Granted	Cumbria CC
Thackwood Landfill	F	G	E	G	G	Extension - area	Granted	Cumbria CC
Bradleys Sand Pit	G	F	G	G	F	Extension - area	Granted	Lancashire CC
Runshaw	G	G	G	G	G	New Quarry	Refused *	Lancashire CC
Sandons Farm	G	G	G	G	G	New Quarry	Refused *	Lancashire CC
Denham Park Farm	G	G	F	G	E	New Quarry	Granted	Buckinghamshire CC
Springfield Farm	G	G	E	G	E	Extension - area	Granted	Buckinghamshire CC
Summerleaze	G	F	F	G	F	New Quarry	Granted	Buckinghamshire CC
Busta Triangle	G	A	G	G	G	Extension - area	Refused **	Hampshire CC
Frithend Quarry	G	D	E	D	E	Extension - area	Granted	Hampshire CC
Plumley Wood & Nea Farm Quarry's	G	B	B	E	E	Extension - area	Granted	Hampshire CC
Roke Manor	G	E	E	E	G	New Quarry	Granted	Hampshire CC
Bridge Farm	G	G	E	G	E	Extension - area	Granted	Oxfordshire CC
Caversham Quarry	G	G	G	G	E	Extension - area	Granted	Oxfordshire CC
Shipton on Cherwell Quarry	E	G	F	G	E	Extension - area	Granted	Oxfordshire CC
Stonehenge Farm	G	G	E	G	G	Extension - area	Refused**	Oxfordshire CC
Hithermoor Quarry	G	D	E	G	G	Extension - area	Granted	Surrey CC
Reigate Road Quarry	G	G	D	G	D	Extension - area	Granted	Surrey CC
Runfold South Quarry	G	E	E	F	D	Extension - area	Granted	Surrey CC
Land at Kingsham	G	E	E	E	E	New Quarry	Granted	West Sussex CC
Berkyn Manor	G	D	E	G	G	New Quarry	Granted	Windsor & Maidenhead RBC
Poyle Manor	G	D	E	G	G	Extension - area	Granted	Windsor & Maidenhead RBC
Land off Avon Common	G	C	C	D	G	New Quarry	Granted	Dorset CC
Woodsford Farm	F	E	E	G	E	New Quarry	Granted	Dorset CC
Latton, Wiltshire	G	G	D	G	F	New Quarry	Granted	Wiltshire CC
Low Lane	F	G	G	G	C	Extension - area	Granted	Wiltshire CC
Bayston Hill Quarry	G	G	G	G	F	Extension - area	Granted	Shropshire CC
Ball Mill Quarry (1) - Church Farm South	G	G	F	G	G	Section 73 ammendment	Refused**	Worcestershire CC
Ball Mill Quarry (2) - Church Farm West	G	G	F	G	G	Extension - area	Granted	Worcestershire CC
Broadway Quarry	G	G	G	G	A	Extension - depth	Granted	Worcestershire CC
Gransmoor Quarry	G	G	G	G	G	Extension - area	Granted	East Riding of Yorkshire Council
Allerton Park - Holly Bank Farm	G	G	G	G	G	Extension - area	Granted	North Yorkshire CC
Forcett Quarry	G	G	F	F	G	Extension - area	Granted	North Yorkshire CC
Ladybridge Farm	G	G	G	G	E	Extension - area	Granted	North Yorkshire CC
Lavant Quarry	G	E	E	C	D	New Quarry	Refused	West Sussex CC

The 'Decision' column refers to the decision for the site as of 31st July 2009.

* The application has subsequently been granted on appeal (after 31st July 2009).

** The decision for the application has been appealed, but a final verdict has yet to be determined (before publication date 30/11/09).

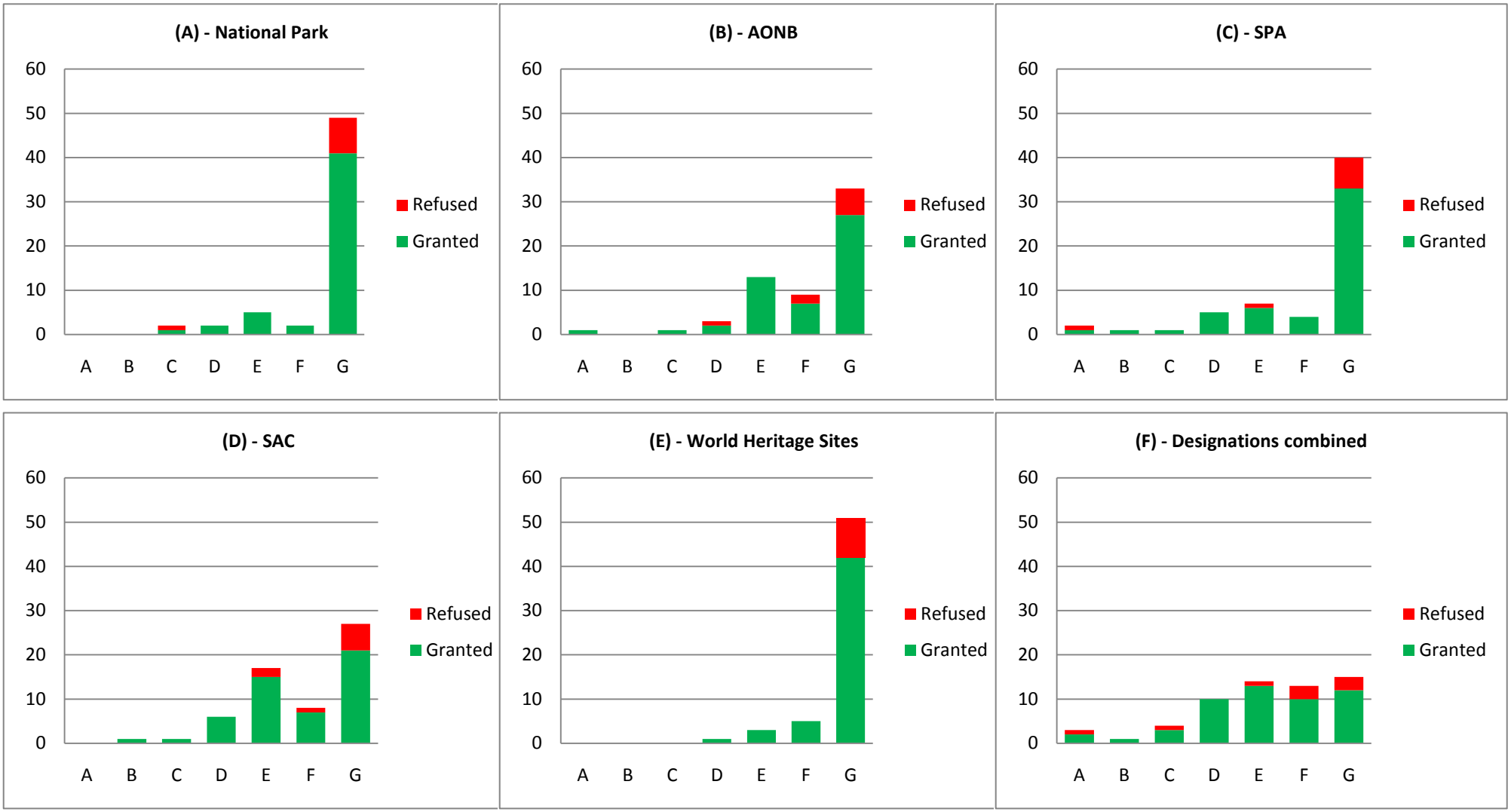


Figure 3. Number of relevant aggregate applications (Y-axis) granted or refused since MPS1 was introduced, sorted by distance category A-E from specified designation (X-axis). Figure F shows the number of applications approved or refused and sorted by distance category to the nearest specified designation considered in this study.

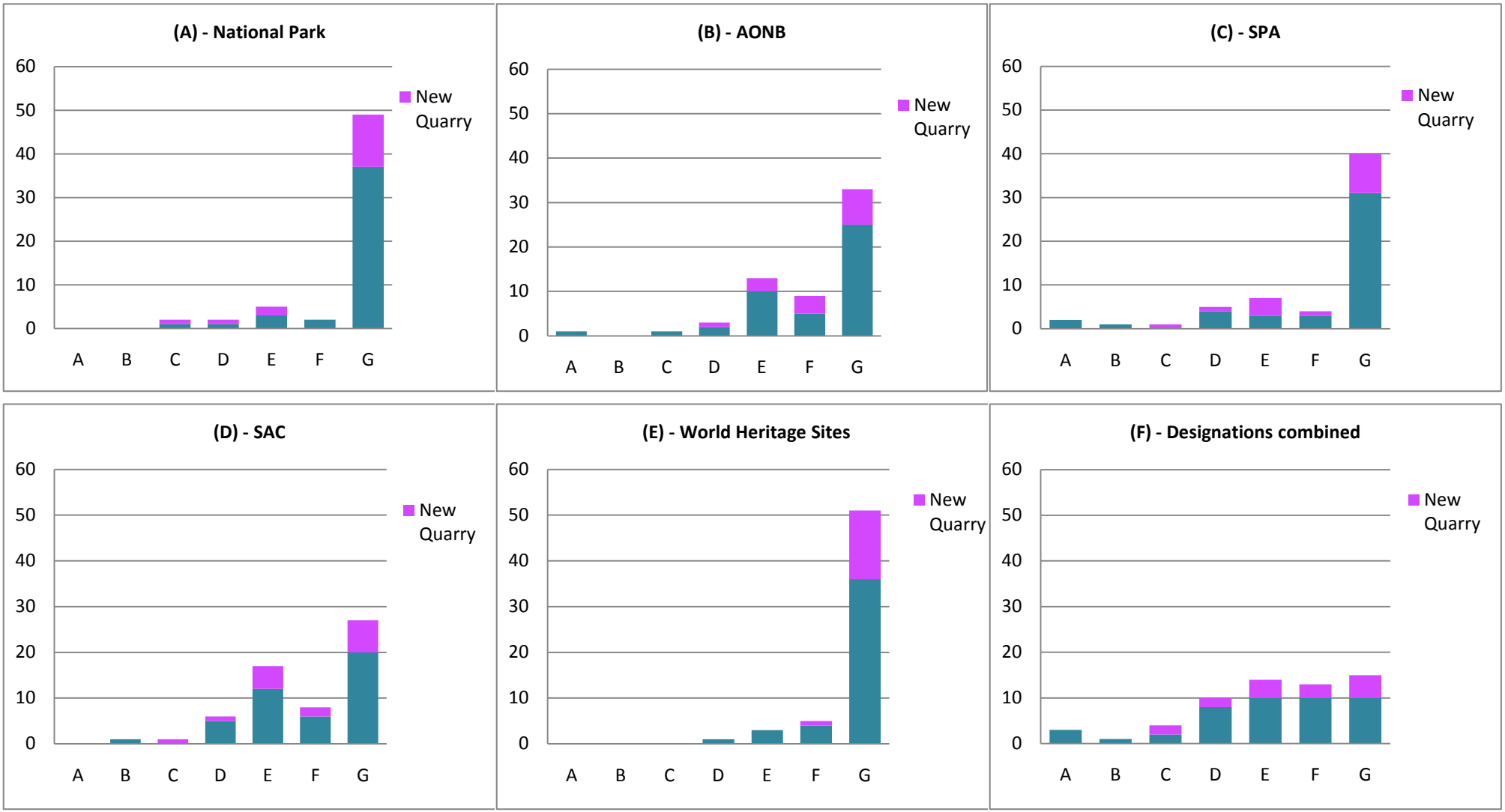


Figure 4. Number of applications sorted by type (new quarry or extension/variation to existing permission) and sorted by distance category A-E from specified designation. Figure F shows the number of applications sorted by application type (new quarry or extension/variation to existing permission) and sorted by distance category to the nearest specified designation.

4.4 ANALYSIS AND INTERPRETATION OF ENVIRONMENTAL ASSESSMENTS

The following analysis and interpretation compares the relevant applications identified inside and outside of a specified designation.

4.4.1 Importance of being in a specified designation

All four applications which fell within specified designations made reference to the relevant designation in both the NTS and officers' report.

Table 5. Consideration of specified designation by application made within those designations

		Designation referred to by:	
Name	**Designation(s) application is within**	**Applicant in the NTS**	**Officers in the committee report**
Marston's Quarry	SPA	Yes	Yes
Busta Triangle	SPA	Yes	Yes
Plumley Wood & Nea Farm	SPA/SAC	Yes	Yes
Broadway Quarry	AONB	Yes	Yes

4.4.2 Balance of short term and long term impacts

The balance between minimising short-term impacts and long-term restoration/landform is at the heart of quarry planning and design. Although a partially subjective analysis, this topic was specifically addressed in 44 (73%) of the NTS, 14 (23%) of the committee reports and 55 (92%) of the decision notices (particularly in the choice of planning conditions). Figure 5 and Figure 6 displays this data disaggregated into those applications within a specified designation, and those outside.

The issue of the balance or conflict between short-term impact mitigation and long-term restoration/landforms is often given different weight by applicants, officers and committees (e.g. Tendley Quarry, Cumbria and Bayston Quarry, Shropshire). For example, the application at Tendley Quarry stated the following with respect to the long term development of the quarry:

> "*The company also considers that it is important to plan for the long term development of the quarry in order to achieve a high quality, phased restoration scheme, and ensure that screening and planting proposals will be effective during of working"*. NTS.

Bayston Quarry placed more emphasis on the short term mitigation factors:

> *"The restoration scheme is designed to deliver progressive creation of a new perimeter screening landform early in the quarry redevelopment process. Once established, this landform would remain throughout the working life of the site and as a permanent feature in the landscape"* NTS.

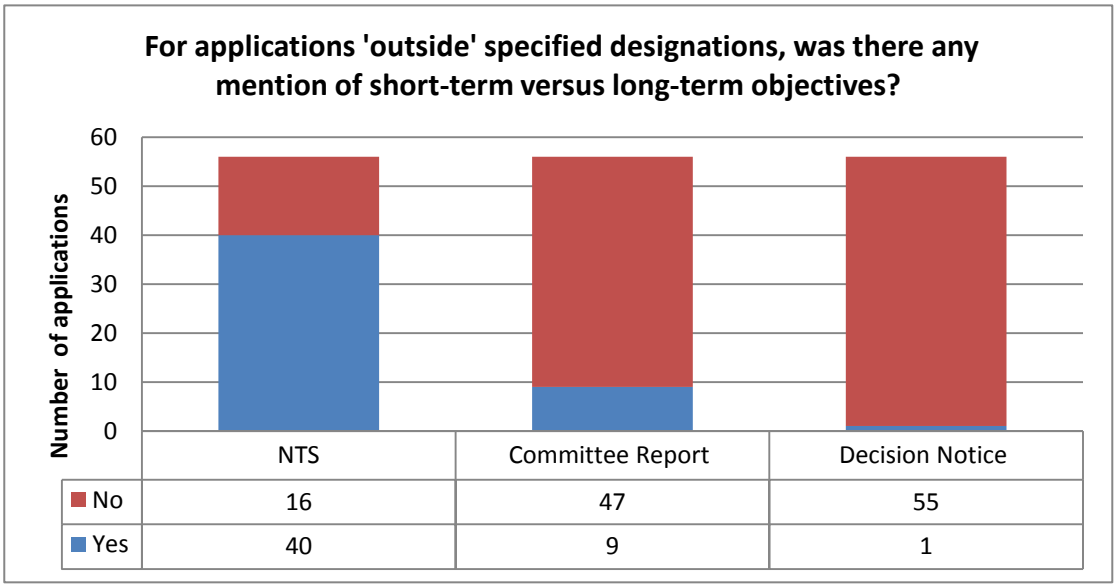


Figure 5. Relevant applications outside of specified designations which mentioned the balance of long term and short term objectives.

The weighting of short term impact mitigation versus long term restoration/landform also changes substantially depending on whether the application lies within or outside a specified designation. For those sites outside of a specified designation (Figure 5), this issue is addressed in 40 (71%) of the NTS, (reflecting the views of the applicant), in nine (17%) of the committee reports (reflecting the views of the officers) and in only one case (2%) in the Decision Notice (reflecting the judgement of the elected councillors).

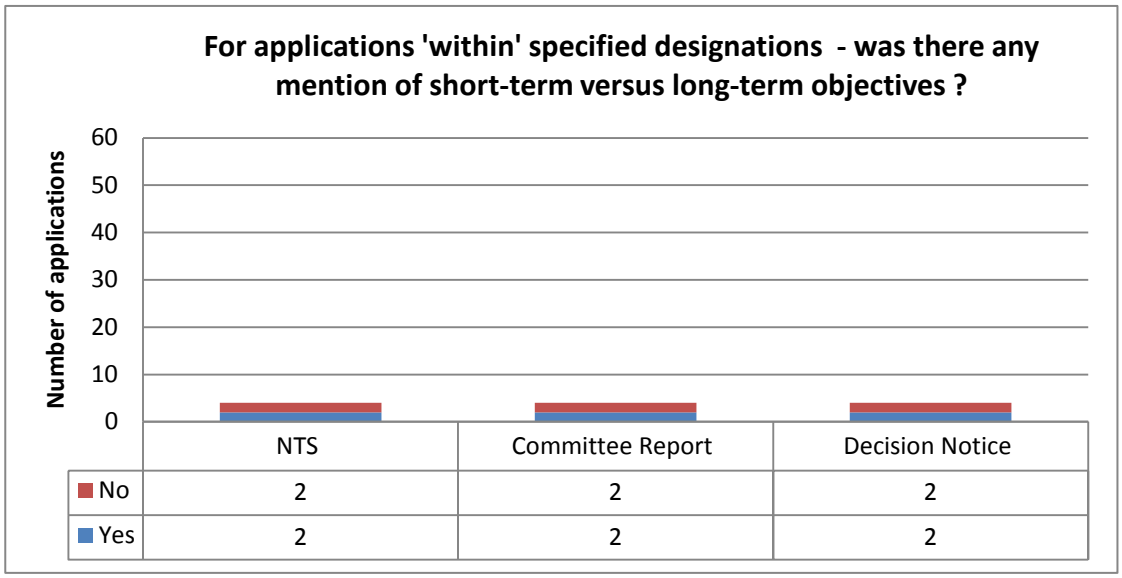


Figure 6. Applications within specified designations which mentioned the balance of long term and short term objectives.

For sites inside a specified designation (Figure 6), this issue is addressed in two (50%) of the NTS, two (50%) of the committee reports and two (50%) of the Decision Notices. These figures should be taken with a degree of caution as many of those applicants outside of the specified designation may have considered their impact on another environmental designation not covered in this study (e.g. SSSI, Ramsar sites). However, it is clear from this analysis that MPAs considering sites within specified designations place more weight on the short- and long-term restoration issues than those outside. If other designated areas had been included in the analysis, this trend might be enhanced further.

4.4.3 Restoration and afteruse

In order to establish whether there was any difference of approach to restoration/afteruse for each relevant application and whether this differed inside, outside or adjacent to the five specified designations, the NTS and committee reports for each application were scrutinised. The broad picture, as shown in Figure 7, appears to be that the afteruse and restoration landform are much more heavily promoted by the applicant in the NTS (in 27 cases (45%)) than in the officers/committee report (in seven cases (12%)). There may be a number of reasons for this. For example, restoration and afteruse may only be discussed in any detail in the committee report if the proposals raise issues which need to be addressed. The applicant will be keen to promote the afteruse as a positive aspect of the application in this report, perhaps more so than in the other documents. It could also indicate that officers are more concerned with the short-term impacts and mitigation procedures of the proposal than over the final land use and restoration profile for which there may be a wider range of acceptability.

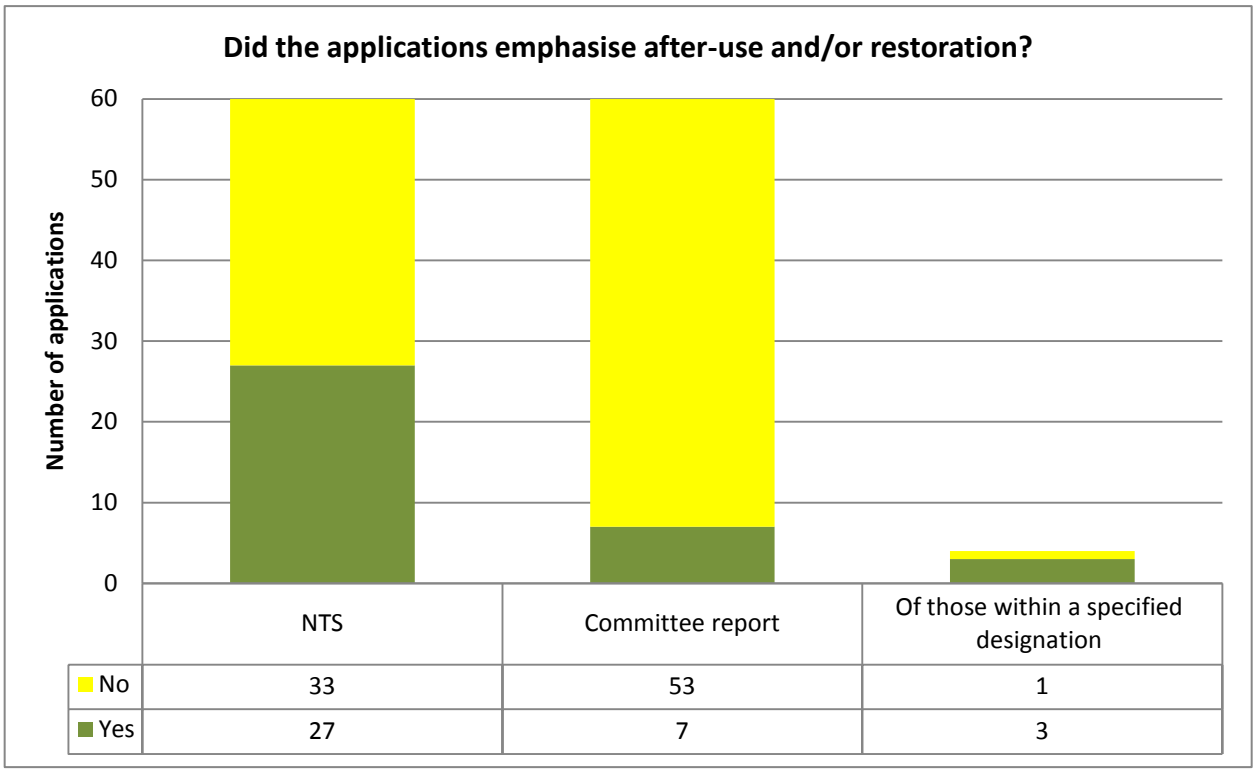


Figure 7. Graph showing whether from the NTS and committee report proposals emphasised after-use and/or restoration.

Of the four applications within a specified designated area, only the application at Plumley Wood/Nea Farm (within SAC/SPA) was not considered to place the balance of emphasis on after-use. However, there was no need for this site to be restoration-driven arising from the wildlife designations, as the need to address the designated areas arose only because of a proposal to continue sending conveyor belts across them.

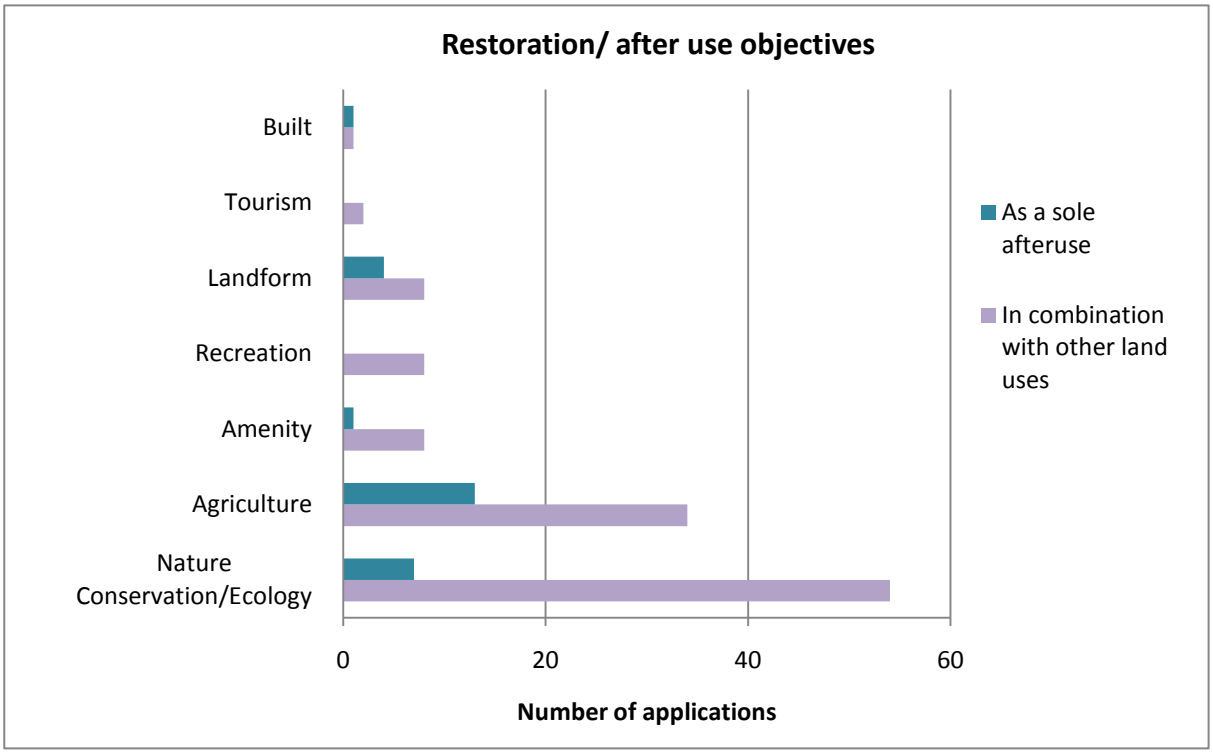


Figure 8. The restoration objectives identified for the relevant applications.

Figure 8 shows that nature conservation, either solely or in combination with other factors, represents the most common afteruse element cited in the applications. Agriculture represents the only other afteruse element occurring in more than 30 (50%) of cases, and has the highest number of applications for which it is the sole afteruse. Recreational and amenity afteruses were only considered in eight (13%) of the applications. Of the 60 applications, Shipton-on-Cherwell, Oxfordshire was the only application to mention built afteruses (e.g. buildings and a rail storage yard and depot) in their restoration objectives. This data is further broken down in the technical appendix (Appendix 5, question 17). However, no separate trend can be determined for the afteruse of those applications within the specified designated areas.

4.4.4 Environmental Assessment subject matters and mitigation measures

For the 60 relevant applications, 25 different subjects/mitigation factors were identified in the corresponding ES. The results of this analysis show a variation in the profile of subject matters contained in the ES dependent on whether the relevant application is inside or outside of one of the specified designations (refer to Appendix 5, question 5). '*Landscape and visual'* is the only subject matter incorporated into every ES outside of the specified designations. Within the specified designations three other subjects are also always included; noise, dust/air quality and highways/transport. Ecology, archaeology, soils & agriculture, geology and rail infrastructure (amongst others) are all more frequently included in the ES of applications within a specified designation, but are less frequent outside.

Given the idiosyncrasies of each of the 60 relevant application sites, and the restricted sample size, it might be expected that there would be a strong variation in the distribution of subjects considered within each ES. However, when analysed (particularly) at the MPA level, there is a clear correlation in the subject matters that are included in the ES for applications within that MPA (refer to Appendix 5, question 5).

When considering whether being within a specified designation had any bearing on the key mitigation measures proposed (refer to Appendix 5, question 7), of the four applications only two applicants (Marstons, Suffolk and Plumley Wood, Hampshire) suggested that the key mitigation measures were as a consequence of being within a specified designation. However, in the officers report, the key mitigation measures in an additional application (Broadway,

Worcestershire) were deemed to be a consequence of being within a specified designation. Out of the 32 applications within, adjacent to or nearby (i.e. Categories A to E) a specified designation, in only four cases did the applicant deem that the key mitigation measures were imposed as a consequence of the nearby designation.

There may be several reasons why this may have occurred. Firstly, the typical or general mitigation measures proposed by the applicant may have been adequate regardless of the application being within or near to a specified designation. This might imply that the mitigation practices employed by applicants are nearly always of a high standard, irrespective of location away from a designated area. Alternatively, the significance of a designation to the application diminishes rapidly with distance meaning that the application may have no discernible effect on the designation and as such is irrelevant e.g. for an application greater than three kilometres from a World Heritage Site, the operation may be deemed to be of no consequence to the designation.

In terms of cumulative impacts on multiple designations, of the four relevant applications within the specified designations only one site (Plumley Wood/Nea Farm, Hampshire) was within more than one designated area. In this case the NTS and officers' report dealt with the cumulative impact; this was relatively straightforward given that the two designations were an SPA and SAC. This study did not find any applications which potentially could have affected multiple designations (both biological and landscape/social).

4.4.5 The planning decision process

Of the 60 relevant applications, 58 were recommended for approval and two (Shipton-on-Cherwell, Oxfordshire and Medbury Farm, Bedfordshire) for refusal by the officers. This illustrates that considerable productive consultation and discussion is likely to have taken place prior to submission and that mineral companies are unlikely to pursue application sites with a poor chance of success. However, committees do not always follow their officers' advice. The 58 recommendations actually translated into 49 approvals by the committee. Nine of the decisions outside of the specified designations went against the officer recommendations. The comparative figure for inside specified designations was two out of four. Despite being recommended by the officers for refusal, Shipton-on-Cherwell was granted permission by the committee.

During the study period, overall applications were approved in 51 (85%) of the cases. Outside the specified designations the approval rate was 47 out of 56 (84%) whilst inside the approval rate was 3 out of 4 (75%). Of the 11 sites where the committee went against officers' recommendations (the officers recommended ten were granted and one refused i.e. Shipton-on-Cherwell), ten applications were refused in the Decision Notice and only one was granted (Shipton-on-Cherwell). By the end of July 2009, four of the ten applications were subsequently granted at appeal (Runfold South in Surrey, Berkyn Manor in the Royal Borough of Windsor and Maidenhead and, Runshaw and Sandons Farm both in Lancashire) and decisions were awaited in three more cases (Busta Triangle in Hampshire, Stonehenge Farm in Oxfordshire and Ball Mill Quarry (1): Church Farm South - Worcestershire).

Figure 9 shows that for those applications which are extensions to quarries, 39 (89%) of applications were granted. Meanwhile, for those applications for new quarries 11 (69%) were granted. This analysis is broken down further within the Technical Appendix (Appendix 5, question 16). There may be several reasons for there being more permissions granted for extensions than for new quarries. It could be that local stakeholders may have become accustomed/accepting of quarrying activity in the area such that the level of opposition to an extension may be reduced or another explanation could be that the applications for extensions are considered to be more environmentally acceptable than applications for new quarries. New quarries, by definition, are introducing a new landuse to an area and are therefore likely to be subject to more controversy, both in the public eye and in terms of environmental acceptability. These concepts are explored in more detail in sections 5 and 6.

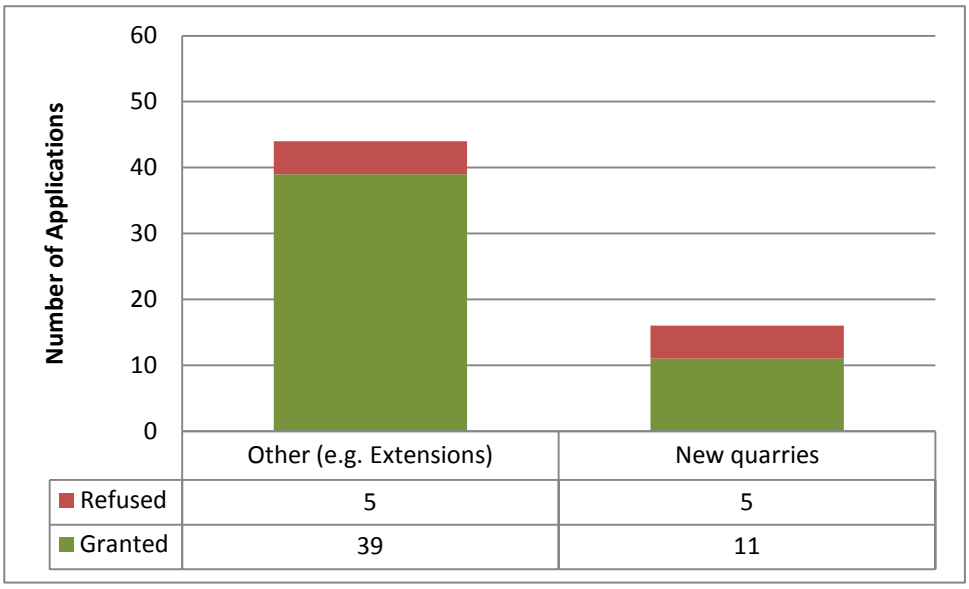


Figure 9. Decision outcome for the relevant applications categorised by whether the application was for a new quarry or extension to an existing quarry.

There were 44 (73%) relevant applications which were for extensions to existing quarries. In only two cases (Marston's Quarry, Suffolk and Brassington Moor Quarry, Derbyshire) had a new designation (Breckland SPA and Peak District National Park respectively) come in to force after the original permission had been granted (or in the case of Brassington Moor, after working had already been undertaken[5]), and was mentioned in the application (Table 6). Both of these had planning conditions attached which could be considered to be as a direct consequence of the designation. Although we cannot be certain how many applications for extensions within this study are now subject to new designations than when the initial application was first approved; it is unlikely that the officers' reports would neglect to highlight such an issue.

Table 6. Applications for extensions to working which specifically mention a new specified designated area that has come into force since the original application for working was submitted.

Name	Original permission date	Date of Designation
Marston's Quarry - Breckland SPA	1st December 1965	20th June 2009
Brassington Moor Quarry - Peak District National Park	19th December1951[4]	17th April 1951

4.4.6 Reference to MPS1

Although the policies forming the Development Plan in the Regional Spatial Strategy and local planning documents should reflect national policy, and the focus of applicants and planning officers is likely to be on addressing the development plan policies, one might expect MPS1 to be a referenced platform in all mineral appeal decisions.

[5] According to the ES for the application at Brassington Moor, quarrying is thought to have been first undertaken in 1927. The Town and Country Planning Act was established in 1947 which in effect, nationalised the right to develop land and to secure planning permissions form the local authority.

Box 1. Extract of where MPS1 is mentioned in the appeal decision.

Runshaw Quarry

"*Mineral Policy Statements (MPS1) also notes that where there are distinct and separate markets for a specific type or quality of aggregate, separate land-banks may be appropriate"*

Runfold South Quarry

"MPS1 advises that the length of the landbank should be used as an indicator of when new permissions for aggregate extraction are likely to be needed.……"

Despite it being in force throughout the study period MPS1 was not specifically mentioned in 38 of the 60 (63%) officers' Reports for the relevant applications. Where mentioned, MPS1 is simply listed as relevant or quoted verbatim. In only two of the five cases (Runshaw, Lancashire and Runfold South, Surrey) which went to appeal and were decided by the end of July 2009 was MPS1 mentioned in the Inspector's report but only in reference to the need for the mineral (Box 1). However, it should be noted that in both of these cases, the MPA had made their decision prior to MPS1 (Runshaw was decided by the MPA on 21st September 2006 and Runfold South on 19th December 2005), and so MPS1 would not be expected to be mentioned in any of their documents.

More interestingly, in the appeal at Busta Triangle, Hampshire, (within an SPA), the Inspector invoked the terms of the new MPS1 to justify his view about the approach to handling the case which he felt the MPA should have taken (refer to footnote 5, section 4.5.2.2).

4.4.7 Analysis in variation of transportation method

All 60 quarries were served by road. Of these, three quarries also exported the material from the site by rail (e.g. Bayston Hill Quarry, Shropshire and Shipton-on-Cherwell Quarry, Oxfordshire) or water (e.g. Sturton Le Steeple, Nottinghamshire). The analysis of the sites inside the specified designations shows that all four were served by road with one served additionally by rail. Apart from the dominance of road transport, no further conclusions can be drawn.

4.4.8 Exemplar quarries

Using the sample of 60 applications in the project inventory, 17 potential exemplar quarries were identified by the project team (Table 7). These were identified based on a subjective analysis of the ES, NTS, officers' report, Inspector's report, Decision Notice and project proformas (Appendix 4). Each of the potential exemplar quarries identified were considered to have achieved very high standards in planning and design, minimising impacts during operations or to provide beneficial afteruse/restoration. Five of the 17 were considered potentially to have achieved this level both during and after quarrying. Those sites not classed as exemplary through this subjective process, may still be of a high standard. Of the 17, none were located in a specified landscape designation (AONB/National Park), however two were located in a SPA/SAC.

While this study has given an indication (albeit through subjective exploration) of the possible scale and numbers of exemplar quarries, it has not attempted to identify whether transferable lessons (in terms of after use planning and design which is in keeping with the raison d'être of a landscape designated area) could be drawn. The approach taken here however, could be refined and undertaken in a robust way based on a defined and more objective methodology using the material (NTS, officers' reports, NTS's, and Decision Notices) already gathered for each of the

60 applications identified in this study. Transferable lessons could then be identified and promoted from good examples of applications, approaches, techniques and afteruses/landforms.

Table 7. List of exemplar quarries identified by project team based on NTS, officers' report, Inspector's report and Decision Notice, during operations and for restoration and afteruse.

Application	MPA	Within specified designation	During Operations	Restoration Afteruse
Black Cat Island	Bedfordshire CC	No – Category G	Yes	Yes
Broom Quarry	Bedfordshire CC	No – Category F	Yes	Yes
Little Paxton Quarry	Cambridgeshire CC	No – Category F	Yes	Yes
Pentney	Norfolk CC	No – Category F	Yes	Yes
Norton Disney	Lincolnshire CC	No – Category G	Yes	Yes
Sturton Le Steeple	Nottinghamshire CC	No – Category G	Yes	Possibly
Marston's Quarry	Suffolk CC	Yes – Category A (SPA)	Yes	Possibly
Divethill Quarry	Northumberland CC	No – Category F	Possibly	Possibly
Shipton-on-Cherwell Quarry	Oxfordshire CC	No – Category E	Yes	Possibly
Caversham Quarry	Oxfordshire CC	No – Category E	Possibly	Possibly
Roke Manor	Hampshire CC	No – Category E	Yes	Possibly
Plumley Wood and Nea Farm	Hampshire CC	Yes – Category B (SPA/SAC)	Yes	Possibly
Springfield Farm	Buckinghamshire CC	No – Category E	Possibly	Possibly
Land off Avon Common	Dorset CC	No – Category C	Yes	Yes
Ladybridge Farm	North Yorkshire CC	No – Category E	Yes	Possibly
Forcett Quarry	North Yorkshire CC	No – Category F	Possibly	Yes
Allerton Park-Holy Bank Farm	North Yorkshire CC	No – Category G	Possibly	Yes

4.5 REVIEW OF PROPOSALS '*WITHIN*' DESIGNATED AREAS

The aim of reviewing planning applications within designated areas was to establish for each case whether:

(i) the designated area and its relevance to the decision had been correctly identified;

(ii) the correct policy approach to the designated area had been followed; and

(iii) the importance of the designated area had been reflected in the decision.

Since the introduction of MPS1, no applications for the extraction of aggregates were submitted within a National Park, and only one was submitted (i.e. Broadway Quarry, Worcestershire) within an AONB.

Although only four applications considered were within a specified designation. A further 29 (48%) were within five kilometres (i.e. categories C, D and E) of one or more specified designations.

The four applications for aggregate extraction within designated areas are reviewed briefly below, by designation type.

4.5.1 AONB

One mineral planning application within an AONB was decided within the study period. This was at Broadway Quarry in Worcestershire, in the Cotswolds AONB, decided by Worcestershire County Council's Planning and Regulatory committee on 9th September 2008 and planning permission granted.

The proposal was to deepen this long-established limestone quarry at Broadway from its currently approved depth limit at 270 m AOD by 10 m to 260 m AOD. This would release about 100,000 tonnes of stone for aggregate (in construction), building, walling, and cut stone, extending the life of the quarry by about two years.

The County Council identified the impact of the quarry on the AONB as one of six main issues in the decision. In assessing the impact, the committee report considered the visual impact of the proposal on the AONB but did not formally mention the key distinction between 'major' and 'not major' developments (which follow different policy paths). Nonetheless, reference was made to the relevant policy. It is clear from the phraseology then used in the committee report that the proposal was considered to be 'not major' for AONB purposes.

The consideration of alternatives is a requirement of the Environmental Impact Assessment (EIA) process, and is also required if the development is considered 'major' for AONB purposes. The submitted ES indicated that two alternatives to deepening the site had been considered: lateral extension and a completely new quarry. Both had been rejected on grounds of adverse effects on the AONB. In the event, this was not material to the decision.

There were no objections to the application from the following organisations (which might have been expected to raise concerns about the AONB if they had any): Cotswolds Conservation Board (established to protect the interests of this AONB), Natural England (the national agency responsible for AONBs), Wychavon DC (the local district council), or Broadway PC (the local parish council).

The assessment in the committee report noted that there would be no change to the degree to which the quarry could be seen from the surrounding countryside (in the AONB): views into the site would still be limited to the entrance gate. As the Cotswolds Way passes this point, this long distance trail "*allows its users impressive views into the site*." Due to the lack of change in circumstance, the report concluded that deepening the quarry would not adversely impact on the landscape of the surrounding AONB. Furthermore, restoration of the site, which was primarily directed to nature conservation benefits, could be adjusted to use species characteristic of this part of the AONB. The committee report considered acceptable a proposal to retain the cutting shed for future agricultural use after restoration, specifically because this would not harm the landscape in this part of the AONB (because of its small scale and location in the quarry void).

With the reiteration of the AONB points above, the importance of the AONB was properly weighed in the conclusions to the committee report. AONB issues did not feature in the Minutes of the meeting as having been discussed by councillors, though the formal reasons for granting planning permission included "*There would be no adverse effect on the landscape of the surrounding Cotswolds Area of Outstanding Natural Beauty*".

The conclusion in this case is that the interests of the AONB were properly assessed in all three respects noted above in coming to the decision reached.

4.5.2 European Wildlife Sites (SAC/SPA)

Three mineral planning applications within European Wildlife Sites were decided within the study period, at Marston's Quarry, Suffolk; Busta Triangle, Hampshire; and Plumley Wood and associated sites, Hampshire. All three were wholly or partially within SPAs (for birds) and the Plumley Wood complex was additionally partially within a SAC.

Where there is a possibility that a development could have significant effects on such a site, then the planning authority (not the applicant) must carry out an Appropriate Assessment (AA) to establish what the effects would be. Under the terms of the EU Habitats Directive, as implemented in UK law through the Habitats Regulations 1994, the local planning authority can only grant permission for a development within a European protected wildlife site if it is satisfied that the development will not adversely affect the integrity of the European site or that there are imperative reasons of overriding public interest to do so and there is no other location or means of achieving the objectives of the proposal (Figure 11, page 62). Although there are very specific criteria for granting permissions within a European designated area, they do not necessarily preclude all mineral working.

4.5.2.1 MARSTON'S QUARRY

Marston's Quarry, Cavenham was considered by Suffolk County Council's Development Control Committee on 18th October 2007 and planning permission granted. The proposal was to extend eastwards this sand and gravel quarry by 9 hectares, yielding about 800,000 tonnes of aggregates over about 4.5 years. The site is within the Breckland SPA (and incidentally adjacent to the Cavenham and Icklingham Heaths SSSI and SAC).

Suffolk County Council carried out an AA for this proposal, so the designated SPA and its relevance to the decision were correctly identified. The AA found that the proposed development would lead in the short-term to a loss of habitat for all of the species of interest in this area, but that with the proposed restoration and proposed Management Plan for the site the long term impacts would be positive. In effect, restoration would improve the integrity of this SPA. There was also some evidence from the ES that the application site was not the optimum nesting habitat (the key issue) for the target bird species, though it was suitable foraging ground, whereas the proposed restoration would extend ground nesting habitat.

With a conclusion that the integrity of the SPA would be improved, the proper assessment against policy was straightforward. This task was made even simpler as neither Natural England nor the Royal Society for the Protection of Birds objected to the proposals (and the committee report stated that these bodies supported the scheme). The RSPB had drawn up the Management Plan for the main site and had worked closely with the applicant on the extension proposals.

The importance of the SPA was reflected in the committee report as the issue meriting the first and lengthiest assessment. With a remarkably extensive lack of opposition to the proposal, with the inclusion of the site in the emerging Local Development Framework (LDF) as suitable for quarrying, and with only a few other comments to address (which were capable of resolution), the importance of the SPA was not subject to significant alternative pressures in the committee report's analysis. Nature conservation issues arose briefly in the committee meeting, with reassurance provided by officers. The reasons for granting permission included that the special nature conservation interests of the designated areas [though only the SSSIs were mentioned, not the SPA or SAC] are suitably protected and compensated through the proposals for restoration.

The conclusion in this case is that the interests of the SPA were properly assessed in all respects noted above in coming to the decision reached.

4.5.2.2 BUSTA TRIANGLE

Busta Triangle, Bramshill was considered by Hampshire County Council's Regulatory Committee on 29th November 2006 (refer to section 6 for a fuller commentary on the decision making process). The proposal was to open a small sand and gravel site between two existing quarries (Bramshill to the west and Eversley to the east) with the material being removed for processing at Eversley. The site of nearly 16 hectares had reserves of about 420,000 tonnes which would be worked over three years (though processed over four years). The site is within the Thames Basin Heaths SPA. The existing land use on the site was predominantly pine plantation.

The SPA was not a determining issue by the MPA in this case. Natural England did not consider that an AA was necessary because the development was unlikely to have significant impacts on the SPA. This confirmed the view of the submitted ES.

Despite this, the importance of the SPA in principle was reflected in the committee report which identified '*impact on nature conservation interests*' as one of five key issues in the decision, and reiterated that '*biodiversity designations is an important consideration'*. Natural England did not object to the proposal and, of those few local organisations which did object, none raised wildlife impacts as an issue.

The applicant proposed to restore the site to conifer woodland plus the creation of heathland areas, but it was the proposal to provide additional heathland habitat at Eversley Quarry which was identified in the committee report as 'positive measures which would enhance the nature conservation value of the area' (though this was not specifically related to the objectives of the Thames Basin Heaths SPA). [6]

The application was recommended for approval but refused. The grounds for refusal were local and did not mention nature conservation issues.

The conclusion in this case is that the interests of the SPA were properly assessed in all three respects noted above in coming to the decision reached (so far as can be ascertained from the relevant documents).

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[6] A public inquiry was held into the appeal. In his detailed assessment of the approach to the SPA designation, the Inspector specifically took into account the terms of MPS1, issued a few days before the MPA's decision, from which he quoted (paragraph 9) the following from paragraph 19 on 'Restoration':

> "*take account of the opportunities for enhancing the overall quality of the environment and the wider benefits that sites may offer, including nature and geological conservation and increased public accessibility, which may be achieved by sensitive design and appropriate timely restoration;*
>
> *consider the opportunities that sites may offer for the development of new woodland areas and for providing networks of habitats*".

He also quoted (paragraph 25) the advice in Circular 06/2005 (*Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*) that:

> "*Regulation 48 of the Habitats Regulations restricts the granting of planning permission for development which is likely to significantly affect a European site, and which is not directly connected with or necessary to the management of the site, by requiring that an appropriate assessment is first carried out of the implications of the development for the site's conservation objectives".*

After two circulations of letters to interested parties after the close of the inquiry, and taking into account their responses, the Inspector continued to hold "*the view that the effect of the proposals is likely to be significant in relation to its effects on the Special Protection Area and to the linked view that it cannot be concluded without an Appropriate Assessment that the proposals for the Busta Triangle site would be unlikely to have significant effects on the internationally important interests for which the Special Protection Area has been designated*" (paragraph 28). He therefore carried out his own Appropriate Assessment.

He was concerned that the proposals should not adversely affect the integrity of the European wildlife site, as required by Regulation 48 of the Habitats Regulations. He considered the restoration proposals for a return to forestry (which could simply be expected to return the site to its current unfavourable status in relation to the SPA) alongside other options. He concluded (paragraph 36) that "*because of the failure to take advantage of a realistic opportunity on the Busta Triangle to secure improved habitats for Annex 1 species the proposal would have an adverse effect on the conservation objectives of the SPA.*" He found (paragraph 47) that restoration to coniferous forestry was "*in conflict with local and national policies [incl. MPS1] that seek to enhance biodiversity. In the context of a proposal for mineral extraction which creates a need for site restoration and creates an opportunity for adopting management practices that are conducive to achieving nature conservation objectives that is a serious defect. Given that the site affected is an SSSI and part of an SPA it is an exceptionally serious defect*". Accordingly he dismissed the appeal.

4.5.2.3 PLUMLEY WOOD

Plumley Wood and its associated sites, near Ringwood, was considered by Hampshire County Council's Regulatory Committee on 14th January 2009 and planning permission granted. The proposal was to open a very large site containing 6 Mt of sand and gravel and 330,000 tonnes of soft sand over a site of 143 hectares (of which 104 would be quarried). The site would operate over the period 2014 to about 2025.

Plumley Wood is primarily an extraction site. The proposal involved a complex arrangement for transporting material, all by conveyor, prior to final distribution of finished products. The minerals would be sent to a new washing plant at Burnt Hill, a previously worked site selected from various options considered. Silty waste water would be pumped back to Plumley Wood and settled in silt lagoons. Washed material would be conveyored to the company's operational Nea Farm Quarry where it would link into a route already established to the processing plant at Blashford Quarry. The plant area at Blashford would be extended and modernised as a whole. Between Nea Farm and Blashford the conveyor crossing the River Avon SAC and Avon Valley SPA would be retained, taking mineral from Plumley Wood after the working of Nea Farm finishes in 2014.

Because these wildlife sites are of European importance, and because an initial 'screening' of the proposals under the Habitats Regulations concluded that the retention of the existing conveyor may have a significant impact on the sites, Hampshire County Council carried out an AA of the proposals. The impact of the Blashford plant site was also included in the scope of the AA. This approach clearly recognised the relevance of the protected areas to the decision. The AA concluded that the proposal alone or in combination would be unlikely to cause an adverse impact on the integrity of the protected sites, though details were not reported. (To avoid having to refuse the scheme, the 'unlikely' adverse impact would need to have left no room for reasonable doubt.) This finding was compatible with the applicant's EIA which had argued that the two wintering waterfowl species for which the SPA is classified do not occur in this part of the SPA (and so cannot be affected by the conveyor). Natural England accepted both this and that the conveyor had no effect on the River Avon SAC. Additionally a variety of benefits for nature conservation would be provided in different parts of the sites affected by the scheme, though these were not overtly linked to benefit the SAC or SPA.

The Royal Society for the Protection of Birds supported the proposals. Natural England did not object to the scheme but proposed a range of management practices and improvements for wildlife through conditions and a section106 agreement.

The committee report identified the impact on nature conservation (more generally than on the European wildlife sites) as one of thirteen key issues raised by the proposal. It concluded that the River Avon (i.e. the European sites) would not be adversely affected (suggesting that the proper test of impact on the SPA and SAC was in fact being applied), and that additional nature conservation value would be provided in different parts of the sites affected. The committee report reflected the importance of the designated areas in the decision. At the committee meeting, officers reiterated that the proposed conveyor would have no adverse impact on the River Avon wetland areas, and this was subsequently stated as one of the reasons for the approval of the planning application. In conclusion, the interests of the SPA and SAC were addressed in all three respects noted in paragraphs above, in an exemplary manner.

4.6 SUMMARY

4.6.1 Differences of approach inside and outside of specified designations

The five specified designations used in this study are, in themselves, diverse in terms of criteria used to determine the designated area. Any difference of approach to mitigating the environmental impacts of aggregate may therefore vary between the designation types. SACs

and SPAs have more singular objectives in that they are ecology based. Assessing impacts on a SAC or SPA tends to centre on the consequences to habitats and individual fauna/flora species. National Parks and AONBs are broad designations across large areas of land covering all aspects of social, economic and environmental importance. Such aspects either singly or in combination may be affected by quarrying. World Heritage Sites are the most diverse ranging from cathedrals to stone circles.

Although Lavant Quarry and Brassington Moor applications border a National Park and Low Lane Quarry application borders an AONB, no determined relevant application was made during the study period post November 2006 actually within a National Park and only one was made in an AONB (i.e. Broadway Quarry, Worcestershire). No assessment of approach or changes in approach within or outside of these two designations can be made. Within the time period of this study, it has been observed that the number of applications for aggregate extraction within the specified designations is low compared to outside of designated areas. However, Mankelow *et al.* (2008) demonstrated that reserves outside of national parks are declining more rapidly than within National Parks.

Planning applications which might impact on SPAs (Marston's Quarry in Suffolk, Busta Triangle and Plumley Wood in Hampshire) and SACs (Plumley Wood) must address the specific wildlife interests of those sites. Regulation 48 of the Habitats Regulations 1994 requires that the MPA, before granting a permission, "*shall make an appropriate assessment of the implications for the site in view of the site's conservation interests*" if the proposal "*is likely to have a significant effect*" on a European site. Permission may then only be granted for a scheme "*after having ascertained that it will not adversely affect the integrity of the European site*". If there is doubt about the impact, then the precautionary approach applies and permission cannot be granted.

4.6.2 Variations in Conditions/Mitigation Measures inside and outside of specified designations

With a sample of only four applications within the specified designations, it is difficult to draw distinctions. In two cases the Planning Conditions seemed to reflect the protection and enhancement of the core raisons d'être of the designations; this is not surprising. There seemed to be no meaningful variation in the subjects considered in the environmental assessment for the applications inside or outside of the specified designations.

4.6.3 Extent of exemplar quarries

By way of an exploratory question, this study attempted to establish the broad extent of exemplar quarries, albeit wholly subjectively. Of the 17 identified sites, none were located in landscape designations or World Heritage Sites. One application (Marston's Quarry, Suffolk) was within an SPA and another (Plumley Wood, Hampshire) was within both an SAC and SPA. This is not surprising given that only four out of the total 60 sites were "*within*" the specified designations. However, the undertaking of the subjective, exploratory exercise has given an indication of the possible scale and numbers of exemplar quarries.

4.6.4 The impact of MPS1

The limitation of this analysis, resulting from the project brief, is that the analysis undertaken did not extend to aggregate planning applications considered prior to the introduction of MPS1. A more extensive time series, perhaps extending to the introduction of MPG1, may have facilitated a more thorough analysis of the impact of the introduction of MPS1 on relevant applications to be conducted. However, this is unlikely as MPS1 did not introduce new policy on designated areas but continued to signpost to policy and legislation set out previously, such as the Habitats

Regulations 1994 which govern SPAs and SACs and The Environment Act 1995 from which National Park Policy derives.

It can be concluded, even though based on a limited sample size, that MPAs, particularly at officer level, have paid close attention to the proper assessment of the interests of nationally or internationally protected areas when aggregate mineral developments were proposed within them.

The analysis of 60 applications both outside and inside designated sites suggests that MPS1 is meetings its key objective to *'protect internationally and nationally designated areas of landscape value and nature conservation (i.e. AONBs and National Parks) importance from minerals development other than in exceptional circumstances'* (DCLG 2006). Fewer applications have been submitted within specified designated sites in comparison to outside designated sites and those that have been submitted clearly demonstrated that the proposed operation would not have an adverse impact on the designation and in some instances improve the integrity of the designations, such as Marstons Quarry, Suffolk.

In the short period over which planning decisions have been analysed, from November 2006 to the end of July 2009, there have been very few proposals within nationally designated landscapes (AONBs and National Parks), with only a single proposal which was treated as 'non-major' for policy purposes. The reasons for this have not been addressed systematically. However, there is a strong likelihood that the difficulty faced by aggregates schemes in satisfying the strict policy requirements in MPS1, allowing schemes only exceptionally in these areas, is a central consideration in this experience. Within habitats of European importance there is likely to be somewhat more scope for aggregates schemes to meet the formal requirements. However, proposals in the study period were few, and one of them has generated sufficient controversy to be a matter for High Court judgement on the approach to European wildlife issues.

The finding of this study is therefore that current legislation and policy on the protection of designated areas is working thoroughly. Over time, the effect of MPS1 policies as experienced by this study would therefore be to cause limited replenishment of permitted reserves within those areas. Over time, a progressive switch of aggregates supply could be expected from within protected areas to locations outside them. Previous research (Mankelow *et al*, 2008) has indicated that this may be moderated by the proportionately larger reserves (in relation to output) within National Parks particularly (compared with outside them), though the trend would only be delayed rather than altered. Furthermore, the switch will be affected by the expiry in 2042 of permissions anywhere which did not originally have an end-date specified on them. Renewing these permissions will be far less likely in designated landscapes, under the policies in MPS1, than in locations outside. A step change downwards in output from designated landscapes is foreseeable after 2042.

While this switch in supply sources is the objective of the policy, it nonetheless has important implications in the longer term for the options for future supply. Research by Brown et al (2008) concluded that it is unlikely that the future need for aggregates can be met through imports, due to capacity constraints at ports, while recycling is unlikely to supply more than 30% of England's total aggregates requirements. The trend resulting from current policy can therefore be expected to be increased pressure on land outside designated areas to provide primary aggregates. The actual scale of requirements will depend on total demand, and this is difficult to predict. This research indicates that the need for an assessment of the options for supplying aggregates, and the policy to support chosen options, will become increasingly pressing.

5 Public beliefs, attitudes and acceptance of aggregates production 'within' and 'outside' of designated areas

Over the past 25 years, increased levels of protest by local communities (including but not exclusively 'NIMBYism' – or Not In My Back Yard) coupled with the growth of articulate and media-wise single-issue campaign groups, has resulted in a massive increase in the time and risks associated with obtaining a licence to operate for mineral extraction. This, in turn, imposes considerable additional costs on both industry and regulators, and may result in sub-optimal environmental decision-making by the spatial planning system (Bloodworth *et al.* 2009 *in press*). A sophisticated understanding of public attitudes towards mineral extraction would be of considerable value to policy makers and industry in informing development of UK spatial planning policy for mineral supply (UK Minerals Forum, 2008).

5.1 LITERATURE REVIEW

The growing relevance of social aspects of minerals extraction is emphasised in recent reports on the relevance of sustainable development to mining (Hilson, 2000; Horowitz, 2006; Worrall, Neil, Brereton and Mulligan, 2009). Horowitz (2006) referred to a common view that 'sustainable mining' is an oxymoron, while Worrall et al (2009) note that mining (in reference to Australia) is typically viewed as less sustainable than other industry sectors, due to the range of negative impacts that it can produce, including '*severe land disturbance, off-site impacts, community displacement and potential health and safety issues'* (p. 1426). They note that such impacts are visible, well-documented, long-term and emotive, and this reference to emotion is testimony to the significance of psychological or human aspects of minerals extraction, aspects often overlooked in published research. Negative impacts raise important social sustainability issues. These include issues of justice relating to both social and environmental domains (e.g. the balance between local and non-local drawbacks and benefits from minerals extraction, Worrall *et al.* 2009) and issues of public participation in siting decisions. For example, Hilson (2000) claimed that '*involving a community in a wide range of industrial activities puts a mining company in a better position to explore and excavate at other locations, which are more likely to 'accept' an operation*' (pages 203-204). This reveals a strategic rationale for undertaking public engagement (Friedman and Miles, 2006), yet it is important to note that other rationales for engaging with affected communities exist, including both normative (to address issues of justice) and substantive (that engagement leads to better decision-making outcomes) rationales.

In a similar manner to existing research on public attitudes to renewable energy technologies such as wind farms (for more info, see Devine-Wright 2005; 2008), it is useful to distinguish two predominant types of social research study: large-scale opinion poll studies of general public attitudes, and smaller-scale case studies of public attitudes towards specific, usually controversial, development proposals. The former focus upon issues in a general rather than specific manner (e.g. *do you support an increase in renewable energy in the UK?*) and do not tend to have place or project specific focus. Such studies tend to use opinion poll methods, providing respondents with pre-set questions and giving only limited opportunities for response (e.g. Likert-type scales of strongly disagree to strongly agree with a given statement). They are advantageous in providing a nationally representative sample of public opinion (typically >1,000 respondents), and thus may be used to provide legitimacy to policy-making. By contrast, case studies tend to capture the opinions of local residents towards a specific project in a specific location. They often use more qualitative research methods (e.g. content analysis of reports and media articles; in-depth interview with key actors, group discussions with local residents). Case studies are advantageous in providing an in-depth analysis of public beliefs and attitudes towards a specific project, and potentially to track changes in beliefs over time, yet are somewhat limited in terms of the ability to generalise the findings to other project contexts involving different proposals, communities, engagement activities and developer organisations. It is worth pointing

out that each approach has its merits and that 'triangulating' a combination of methods (quantitative and qualitative; general and case specific) is the optimal approach to take to capture different aspects of a research problem.

In this review, only two examples of large-scale survey studies of public attitudes to mineral extraction were identified. The first was commissioned by the UK Government and designed to feed into a wider policy making initiative around taxation on aggregates extraction (DETR, 1999). It applied the econometric method of contingent valuation to investigate individuals' willingness to pay taxes to reduce mineral extraction both in designated areas and in areas where extraction was already conducted. Although some qualitative focus groups were held, this was a predominantly quantitative, survey based study, involving over 10,000 participants in England, Wales and Scotland, some living proximate to existing hard rock or sand and gravel operations, others not living close to such sites. The study found that, at a national level, individuals were willing to pay about £5 per annum to avoid the environmental impacts of quarrying in National Parks; that people living proximate to hard rock quarries were willing to pay £10 per annum to stop local extraction and that people living close to sand and gravel quarries were willing to pay about £15 per year to stop such activities. The study evaluated people's preferences about mineral extraction using a quantitative economic approach. However, this approach does not identify the factors which determine how an individual's preference is formed, nor the degree to which the extractive industry is trusted by the public[7].

The second large-scale survey study identified in this review is market-research, conducted by a private company (Saint Consulting) to investigate public attitudes towards planning, with these framed as 'NIMBY' responses. This research was conducted in January and February 2009, involving 1000 participants. It is not specifically about mineral extraction, and it does not compare attitudes within or outside of designated areas, but it is relevant to this review since it includes questions on the public acceptance of quarrying alongside other land-uses, thus enabling some comparisons to be made. In 2009, findings were published suggesting that public support for quarrying had decreased in comparison to previous years and that quarrying was now the least accepted form of land-use as perceived by a nationally representative sample of UK adults (Saint Consulting, 2009), for example less acceptable than gas/nuclear power stations, or casinos (Figure 10). Socio-demographically, some patterns in public opinion were identified – age was a factor shaping public responses, with older respondents less likely to accept quarrying; there was no observed effect of social class or voting intention (typically a proxy for political beliefs) upon levels of acceptance. Methodologically, it is worth noting that although acceptance rates for quarrying were less than those for other land-uses, respondents were not asked to explicitly compare one form of land-use with another in terms of how much they might accept it; instead there were presented with a list of different options and asked to rate their degree of acceptance towards each. This method produces separate rather than explicitly comparative judgements; it is also limited in the sense that the survey method describes current levels of acceptance, but is unable to provide details of *why* individuals have adopted such attitudes, notably probing underlying values, beliefs, emotions and past experiences that may play a role in shaping such attitudes.

Other studies identified in this review employed case-study designs and typically used qualitative methods. Many of these did not explicitly set out to capture public attitudes at all, being more focused upon political or sociological aspects of controversial land-use proposals (e.g. Cloke, Milbourne and Thomas, 1996; Cowell and Owens, 1998; Makenzie, 1998; Makenzie and Dalby, 2003; Eser and Luloff, 2003; Chambers and Sandberg, 2007), yet are included here since they raise issues that are likely to impact upon public attitudes, notably aspects of planning

[7] For a review on different approaches to evaluating the environment refer to Brown *et al.* (2008) appendix 5.

policy and procedure. Of these, the most relevant to this review are the studies by Cloke *et al.* (1996); Eser and Luloff (2003) and Chambers and Sandberg (2007).

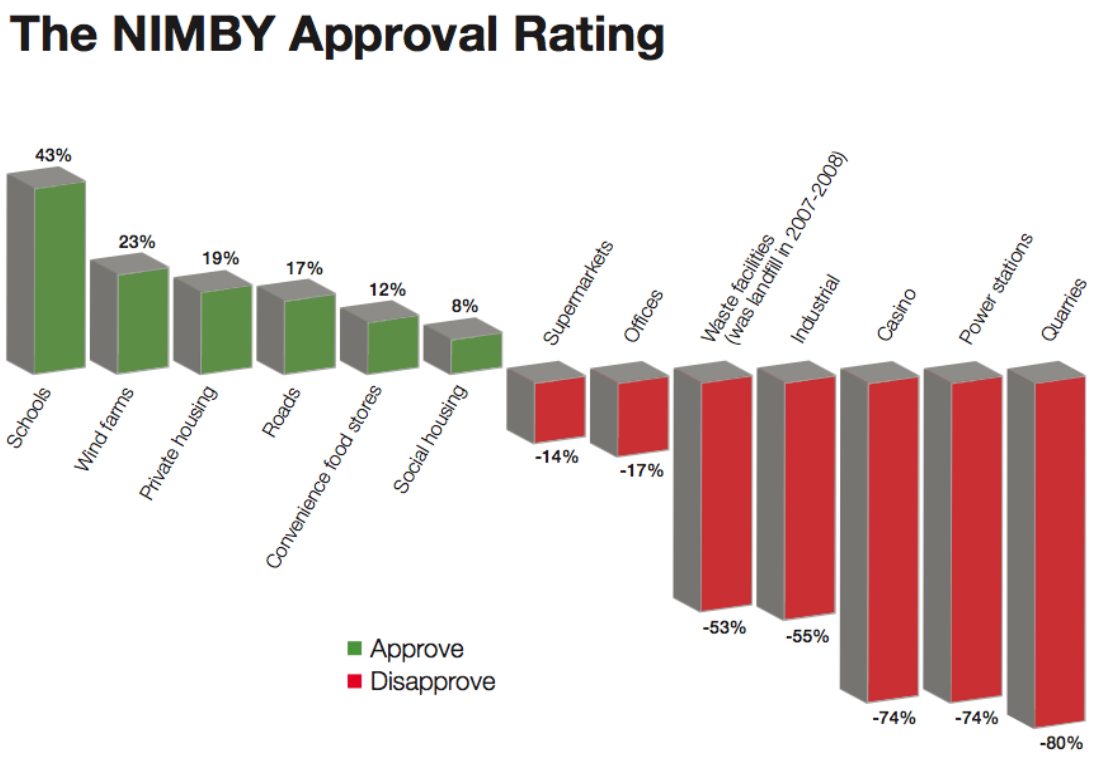

Figure 10. Social acceptability of quarries in comparison to other land-uses (Saint, 2009)

Cloke and colleagues (1996) study is interesting in focusing, in part, upon public attitudes towards post-extraction remedial activities in the midlands of England and tensions between the designation of the area as a 'National Forest' and the continuing extraction activities undertaken by private companies who were landowners in this area. The authors conducted a series of group discussions with local people (the total number of participants was not revealed) which revealed a variety of beliefs about the local area, yet a predominant view of a '*landscape tarnished by the scars of previous rounds of deep-mine coal production and on-going open-cast coal and other mineral extraction* (p. 170). The emotiveness of local impacts is suggested, if not explicitly referred to, by rhetoric from individual participants referring to '*devastated by two separate mines'*, *'torn apart'* and *'blot on the landscape – blackspot'*. The study is informative in revealing public views of extractive companies, notably a lack of trust, predominantly sceptical attitudes and expectations of continual conflict between community and company. It also points to the ways that confrontations between different value priorities (on the one hand more utilitarian as held by the companies and on the other hand more preservation as held by the local residents) evoked anger – in response to the 'exploiting' of local landscapes, the 'stripping' of natural resources, whilst 'ploughing nothing back' into the local community (Devine-Wright, 2009a). Lack of trust has implications for the mechanisms of engagement adopted by extractive companies, since it can stem from residents feeling that they are not being listened to by an organisation that is perceived to be 'outside' of the community (Devine-Wright, 2009b). To counter such difficulties, extractive companies could adopt more deliberative, two-way modes of engagement (e.g. charrettes) that rely less on information provision and instead provide opportunities for residents and other stakeholders to get their views across and for companies to build more trusting relationships with local people (Jarvis *et al.* 2005).

Eser and Luloff (2003) conducted a case study of a controversial proposal to quarry limestone in the district of Haines Township, Pennsylvania, USA in the late 1990s. Although the authors used both interview and survey methods, the published findings make little explicit reference to either the survey questions or the responses they evoked from participants. Notwithstanding this limitation, the study is useful in revealing several pertinent social and psychological aspects of public responses to specific minerals extraction proposals. Firstly, they draw attention to the structure of the existing community and how pre-existing divisions (characterised as between 'incomers' and 'oldtimers') between different social groups living in the area led to the failure of a local action group (Penns Valley Conservation Association - PVCA) to effectively mobilise the entire community to oppose the proposal:

'*It split the community. The division was more between natives and newcomers. PVCA support was really from people who recently moved in. They chose here because of the quality of life. They strongly opposed the quarry. A lot of the natives did not care whether the mine is there or not. It is definitely not good for the environment but I think we can live with it'* (page 799-800).

'College educated' locals differed from 'natives' or 'oldtimers' not just in their level of economic wealth, but also in their environmental and social values. Eser and Luloff (2003) make clear that whilst the campaigners framed the debate around the need to conserve the local environment, other local people did not share this wish to avoid environmental use or change, and the preservational framing was unpopular with locals since it contradicted their antipathy towards external, governmental control over property rights and the valued 'independence' of landowners to make decisions over environmental change on private property. They also point to the role of prior expectations – the land had been owned by an extraction company for many years prior to the proposal being submitted, but had been leased to local farmers. As such, the idea of using that land for extracting limestone was not new and had already been accepted, to a considerable degree, by the locals who had lived in the area for some time.

Eser and Luloff's study (2003) is also notable for revealing some of the difficulties in conducting case study research of this kind. The small scale of the community involved, and heightened emotions associated with the controversy can obstruct research in different ways. Most notably, it can lead to individuals refusing to participate, associating the research with one side or the other involved in the controversy, or if participating, responding in a 'neutral' manner to more contentious questions or statements which they are unwilling to take a 'public' (even if anonymised in the research process) position. As one interviewee commented: *'I wanted, needed to keep myself neutral in this quarry business since I have relatives both for and against the quarry'* (p. 801).

Chambers and Sandberg's (2007) analysis of local controversy over quarrying of sand, gravel and limestone in Ontario, Canada reveals a similar importance of changes to the structure of communities shaping the kinds of responses evoked by new quarrying proposals. In this case, an area with an extensive heritage of aggregate production was transformed by the influx of residents who could readily access nearby urban areas yet dwell within an aesthetic local landscape containing rolling hills, hardwood forests, creeks and natural ponds. These residents objected to new proposals and set up an action group to oppose further aggregate extraction, echoing the sentiments of the PVCA quoted above by aiming to 'ensure that Caledon and Headwaters Region maintain their rural character' (page 334). Whilst the study does not reveal the attitudes of local residents in any detail, it is useful in pointing to the ways in which socio-structural changes to local communities can lead to public opposition towards extraction even in areas where such activities had been widely accepted hitherto. The study also points to strategies used by local activists to avoid negative labelling as merely parochial 'NIMBYs', by reaching out to campaign groups outside of the local area to support their cause, and by connecting the local issue to environmental campaigns being fought in other areas.

Hugh Jones and Madill (2009) studied the views of 14 adult residents of an English village situated close to a working quarry. Their work drew on qualitative data from in-depth interviews initially collected at the request of the quarrying company who had received complaints from villagers despite working within regulated noise and vibration limits. The conceptual focus of the research was upon the ways that people talk about themselves in relation to their locality – what is sometimes referred to as 'place identity'. The study examined the social and psychological strategies employed by the villagers to justify continued living in a 'problem' village, and to maintain a positive place-identity despite the challenging reality of the local quarry. These strategies included emphasising the positive distinctiveness of the village, for example through the hardiness and down-to-earth character of its 'true' locals, which were positively contrasted with various outgroups, including recent incomers to the village (referred to as 'high tech business people', p. 608). 'True' villagers had little sympathy with complaints made by incomers, asserting that if they didn't like it, they should not have moved to the area in the first place.

Although the interviews revealed various means of playing down the impacts of dust, noise and vibration (e.g. by reference to comparatively worse local acoustic problems, such as low-flying military aircraft), villagers did not refer to themselves as passive actors unwilling to complain in any circumstance. Instead, they portrayed themselves as holding an implicit *quid pro quo* arrangement with the quarry that was mutually beneficial, yet constrained. They were willing to overlook dust and truck movements on the condition that the quarry remained within certain limits and contributed local benefits, contributing to a positive place (e.g. offering a residents' rate for stone, running a local history society, providing educational visits for children). They accepted noise and vibration out of general tolerance and reasonableness, yet were careful to stress that should the impacts become more serious (e.g. if impacting upon house foundations or even requiring demolition), their role as vigilant neighbours would lead to complaint. The study is important in providing insights into the various psychological strategies that individuals employ, having learnt to accept and even hold in positive regard, a local quarry that was considered part of the fabric of the place. It suggests some comparisons with local attitudes towards other forms of controversial development that may be quite positively regarded by locals once built and conferring local benefits (e.g. nuclear power stations) in contrast to more general societal beliefs and attitudes.

5.2 SUMMARY

To summarise, available studies are few in number, tend to focus on cases of controversy, favour qualitative methods and rarely directly capture public attitudes. Nevertheless, the literature is useful in suggesting several key conclusions about public attitudes towards mineral extraction, not just in terms of the content of such attitudes but also regarding their determinants and consequences:

1. that general attitudes held by UK adults towards quarrying proximate to their homes are predominantly negative,
2. that quarrying is associated in people's minds with a number of negative local impacts and a dearth of local benefits,
3. that residents living close to existing quarries may hold quite positive views of mineral extraction, in part arising from a wish to maintain positive views of self and place (place-identity), yet limited by implicit *quid pro quo* beliefs,
4. that companies engaged in extraction are typically associated with a lack of trust and sceptical attitudes towards alleged beneficial local outcomes of proposed quarrying,
5. that when companies undertake engagement activities with local communities, they do so for strategic rather than substantive or normative reasons, and are likely to hold 'deficit' views of individuals and communities (i.e. presuming a lack of knowledge and propensity for 'NIMBY' responses),

6. that techniques which attempt to place a value on the environment (which includes contingent valuation) are limited in capturing the reasons behind an individual's preference. Further analysis into the emotional aspects of an individual's preference for mineral extraction would be useful,
7. that general public attitudes towards mineral extraction are based upon deeply held values that can be simplified into two basic tendencies: towards the preservation of natural environments and towards the utilisation of such environments,
8. that public attitudes towards extraction in the context of designated areas such as national parks will be particularly affected by such values, given that these are places officially constructed in planning policy as well as in local culture as areas where the aesthetics of landscapes *should* be preserved, colouring not only local people's views but also those of visitors to the area,
9. that 'community' responses to specific development proposals are often diverse, complex and dynamic over time, shaped by pre-existing social divisions (e.g. between 'newcomers and 'locals') that may also correlate with differences in social and environmental values, and economic status,
10. that activists (both for and against development proposals) are likely to propagate narratives of development that are based upon a) values of preservation/utilisation b) locally-distinctive place-based meanings c) issues of environmental/social justice and d) positioning of the developer (e.g. as outsider/external threat or insider/community ally) with the aim of influencing local attitudes and mobilising behavioural responses of support or opposition,
11. that extractive companies should respond to any lack of trust by employing more deliberative, two-way mechanisms of public and stakeholder engagement (e.g. charrettes), as well as by emphasising the positive social, economic and environmental impacts resulting from minerals extraction, including improvements to biodiversity that may accompany post-extraction remedial work.

6 Examining the influence of local cultural pressures on spatial planning decisions

Although primary research into public beliefs, attitudes and acceptance of quarrying within and outside of designated areas is limited (as shown in Section 5), an aspect of this project was to examine the influence of local cultural pressures on the spatial planning decisions of the relevant applications in this study, and document the results based on available evidence. To do this, a measurement was taken of councillors accepting or departing from officers' recommendations, both within and outside designated areas as an indicator of the presence and extent of inbuilt cultural pressure at the local level.

The concept behind this element of the research is that councillors on MPAs may have a predisposition either to support or to oppose mineral working to the extent that this departs sufficiently from a norm and is therefore detectable. Planning decisions are, of course, always matters of judgement, usually involving competing priorities and awkward balancing of arguments that share no common basis for assessment. Decisions should be informed by the facts of each case, the policy yardsticks established as the public interest, and anything else material to the outcome. However the weight to afford to each contributing issue cannot be prescribed and is inherently unclear. This lack of clarity is fertile ground for hiding preconceptions, attitudes and beliefs behind a cloak of considered analysis. This research aims to obtain insight into the decision-making process in respect of decisions on major mineral developments. For example, are some MPAs culturally more disposed to approving or refusing mineral working proposals than others?

A wide range of views can be heard on the merits or otherwise of quarrying (though not necessarily expressed openly in committees taking decisions on mineral proposals). Two that might be considered opposites are along the following lines, heard in different places:

> *'Quarrying has long been central to the economy and livelihood of this area. It has shaped the institutions of the place, and made the character and landscape of the locality what it is today. We should continue this tradition by encouraging more quarrying: none of the distinctive qualities of this area would have happened if we had worried about the constraints which others now seek to impose on us.'*

> *'Quarrying, is ugly, noisy, dusty and messy. It's not the sort of thing we need around here or which people expect to find in this area. Better places should be found, outside protected areas and away from people, and mineral recycling should be maximised.'*

It would not be credible to expect councillors holding those divergent views to come to the same judgement on the facts of any particular case. The issue for this study is whether these or other separate views can be identified rigorously as contributing to the pattern of decisions in different places.

6.1 CASES WHERE RECOMMENDATIONS WERE OVERTURNED

Of the 60 decisions on aggregates proposals in the inventory for this study, 11 (17%) were overturned by councillors (Table 8). In 10 of these cases recommended approvals were refused, while in just one case a recommended refusal was approved. It is important to stress that these decisions at the MPA level were not necessarily the same as the final decision, in that eight of the refusals against officers' recommendations were appealed to the Secretary of State. One of the appeals was withdrawn (Chilton Estate (1), Suffolk) and four have so far been determined by Inspectors (all granted permission): these were Runfold South (Surrey), Runshaw (Lancashire),

Sandons Farm (Lancashire) and Berkyn Manor (RB Windsor and Maidenhead). Two others were undecided by Inspectors by the end of July 2009: since then the inquiry into the proposal at Ball Mill Quarry (1): Church Farm South (Worcestershire) has been heard and a decision is awaited, while the inquiry into the Stonehenge Farm (Oxfordshire) proposal has been opened but adjourned until April 2010. Finally, one proposal has been decided by an Inspector following a public inquiry, at Busta Triangle (Hampshire), but the decision has been appealed to the High Court and an outcome is awaited following the hearing. However, the results on appeal are not relevant to the assessment of cultural pressures at the MPA level and so are neglected below.

The cases are listed below in date order of consideration by the MPA. Two decisions predate the publication of MPS1: this is because those cases were finally decided on appeal after that publication date, and are therefore relevant for other analytical purposes. (Two more committee meetings were held to decide cases only days after the publication of MPS1, and both of those refusals were also appealed).

Table 8. Applications where officer recommendations were overturned by Councillors.

MPA date of decision	Site name	MPA	Application type	Officer recommendation	MPA decision
19.12.05	Runfold South	Surrey CC	Extension - area	Approve	Refuse*
21.9.06	Runshaw	Lancashire CC	New Quarry	Approve	Refuse*
29.11.06	Busta Triangle #	Hampshire CC	Extension - area	Approve	Refuse **
13.12.06	Sandons Farm	Lancashire CC	New Quarry	Approve	Refuse*
31.10.07	Berkyn Manor	RB Windsor & Maidenhead	New Quarry	Approve	Refuse*
14.1.08	Shipton-on-Cherwell	Oxfordshire CC	Extension - area	Refuse	Approve
6.3.08	Chilton Estate (1)	Suffolk CC	New Quarry	Approve	Refuse
21.10.08	Ball Mill Quarry (1): Church Farm South	Worcestershire CC	Section 73 Amendment	Approve	Refuse**
24.11.08	Stonehenge Farm	Oxfordshire CC	Extension - area	Approve	Refuse**
4.12.08	Chilton Estate (2)	Suffolk CC	New Quarry	Approve	Refuse
17.3.09	Lavant	West Sussex CC	New Quarry	Approve	Refuse

\# Denotes site within designated area.

* Application was subsequently granted on appeal (before November 30th 2009).

** An appeal has been lodged, but a final verdict has yet been determined (as at 30/11/09).

6.2 REASONS FOR DECISIONS AGAINST OFFICERS' ADVICE

6.2.1 Local Amenity Issues

Easily the most significant reason for councillors overturning officers' recommendations was local amenity issues (incl. local transport issues). On no occasion was a strategic reason invoked. Local amenity was the determining issue in the case of Shipton-on-Cherwell, where Oxfordshire

County Council officers had recommended refusal. The reasons for the refusal recommendation were:

- damage to a County wildlife site;
- harm to visual amenities;
- inappropriate development in the Green Belt (the non-mineral elements);
- harm to the biodiversity interest in the site;
- no overriding need.

The committee was told that the local Parish Council supported the scheme, which would increase amenity and redevelop a site which had lain redundant for many years (and included derelict cement works buildings). The number of local objectors was very limited, and the objections from local organisations were modest in scope. However, it is difficult to draw conclusions about mineral working, as extraction was only a minor element of the scheme: far more emphasis was on the importation of inert fill, the construction of a rail depot and the use of the site for B8 industrial storage, amongst others.

6.2.2 Strategic issues

The emphasis by councillors on local issues in their decisions is reinforced by the relative lack of weight given to strategic issues. In particular, the need for mineral working was routinely given little weight. MPS1 (paragraph 4.1) encourages MPAs to maintain a landbank of at least 7 years working for sand and gravel and 10 years working for crushed rock (at rates specified in their development plans). All the sites were sand and gravel sites with the exception of Shipton-on-Cherwell (limestone). In each case, officers' reports explained the landbank position, as described in Table 9.

Table 9. Landbank position for each application based on officers' report.

Site name	Application type	MPA Landbank (years)	Officer recommendation	MPA decision
Runfold South	Extension - area	4.5	Approve	Refuse
Runshaw	New Quarry	6	Approve	Refuse
Busta Triangle	Extension - area	*4	Approve	Refuse
Sandons Farm	New Quarry	<7	Approve	Refuse
Berkyn Manor	New Quarry	6	Approve	Refuse
Shipton-on-Cherwell	Extension - area	13	Refuse	Approve
Chilton Estate (1)	New Quarry	** not stated	Approve	Refuse
Ball Mill Quarry (1): Church Farm South	Section 73 Amendment	6.5	Approve	Refuse
Stonehenge Farm	Extension - area	2.6	Approve	Refuse
Chilton Estate (2)	New Quarry	8.2	Approve	Refuse
Lavant	New Quarry	4.7	Approve	Refuse

* *6.5 years in North East Hampshire, the area of the application site.*

** *The committee report stated that as a previously allocated site, "The need for this mineral working remains an essential plank in rolling forward development plan policy under the new system."*

The table shows that in all but two sites, Shipton-on-Cherwell and Chilton Estate, was there a landbank below the Government's prescribed minimum target, yet that in all cases except Shipton-on-Cherwell the planning application was refused (against officers' advice). The evidence of these 11 sites suggests strongly that, in considering the merits of each case, councillors afford very little weight to the wider pressure of need for mineral working. The implication is that they will not be pressurised by low landbanks into granting permissions they consider to have significant environmental impacts. This conclusion does not, of course, take into account the decisions in the other 49 cases where officers' recommendations were accepted. It is entirely possible that in some of those cases permissions were granted because of the need for the mineral despite such concerns about environmental impacts which councillors may have had. Nonetheless, the implication of the 11 overturned cases remains that the pressure of need for mineral cannot be relied upon to carry significant weight.

Officers may consider that the issues arising in minerals cases, like other planning applications, may clearly point in the direction of a decision one way or the other, or that the balance of arguments is very much open to judgement. In only one case of the 11 above did officers specifically advise councillors that the issues were finely balanced (Runshaw, Lancashire). In this case, therefore, there is less need to invoke possible cultural reasons for the decision, as refusal (against officer advice to approve) is more readily comprehensible as only a slightly different judgement on the merits of the issues. In a second case, at Ball Mill Quarry (1): Church Farm South - Worcestershire, where consultants were brought in to advise after the officers had recommended refusal, the consultants expressed the view that the issues were finely balanced.

The limited evidence from the 11 case studies suggests a cultural predisposition to protect the amenities for local people. In none of the cases was any indication given, in the Minutes of the committee meeting or otherwise, that councillors were strongly supportive of mineral working, even in the case where a recommended refusal was overturned. The emphasis on local amenities and the little weight given to the need for mineral permissions suggests a greater cultural resistance to mineral workings which councillors consider inappropriate. This does not have an especially marked geographical distribution: although six cases were in the South East region (including the approval), there were also two in the East of England (on the same site), two in the North West region and one in the West Midlands. The sample size is too small to merit an assessment against other data (e.g. unemployment levels).

6.2.3 Circumstantial evidence

Decisions on mineral planning applications may be influenced by cultural pressures which are unstated or deeply buried in the details of cases. These are matters which would be difficult or impossible to prove, even if they had been significant. However, just because they fall outside the scope of a demonstrable evidence base does not mean they are not influential. Brief consideration has been given to whether there are any pointers towards such influences in the ten cases recommended for approval by officers but nonetheless refused (though less weight should be afforded to the Ball Mill and Runshaw cases, where councillors were advised that the issues were more finely balanced). This has been done by a careful reading of the papers presented to councillors and of the minutes of their meetings and, where needed, following discussions with the MPA officers involved.

The planning history of sites appeared to hold the most potential for background reasons why councillors may have been unfavourably disposed to proposals. Potentially relevant issues arose in respect of all but one of the ten planning applications submitted.

(i) *Mineral working previously refused on the site*

There is a possibility that councillors may be predisposed to continue resisting mineral working at sites where mineral working has previously been refused, even if there had been changes to the proposals aimed at overcoming earlier objections. This arose at three sites.

The application at Ball Mill Quarry (1): Church Farm South, Worcestershire was to vary the condition on a planning permission granted less than two years previously which specifically prevented working on land known as Church Farm South, so as to allow such extraction. Both the District Council and the local Parish Council (and an additional Parish Council) were amongst those who considered that insufficient change had been made to the scheme to overcome earlier concerns. The Minutes of the committee meeting to decide the application report the issues raised by councillors. These include the view of the local ward councillor that nothing had taken place since the decision by the same committee in 2006 to convince him to change his mind that permission should be refused to end the turmoil inflicted on the village. The argued views of this influential councillor, who later became chairman of the committee, perhaps coupled with a feeling that the main decision had been taken two years earlier, may have been sufficient to tip the judgement of the councillors to refuse permission.

Sandons Farm, Lancashire had been refused permission for quarrying and landfill earlier in 2006 for amenity and Green Belt reasons. To address these, the revised application proposed larger buffer zones and included restoration at the lower level instead of the landfill proposals. The Officers' report noted that concern had been raised that the applicant's main aim in the revised application was to create a void space suitable for future filling (and certainly the air quality issues, which had been part of the reason for refusing the previous landfill proposals, were again extensively investigated in relation to the revised quarrying-only scheme). Officers considered that the scheme as submitted would not cause unacceptable adverse impact on local residents and would not be inappropriate in the Green Belt. Nonetheless, at the committee meeting to decide the application, councillors noted the concerns which had been raised by the previous application and that there was nothing to stop the applicant returning at a future date with an application for landfill. This could not lawfully be a reason for refusal, but it is unclear whether the risk of a future landfill proposal, and therefore an argument for reiterating the decision previously reached by the committee, was at the back of councillors minds in their decision to refuse the revised application.

Mineral development at the Chilton Estate, Suffolk was refused in March 2008 and a revised application submitted, which was decided in December 2008. To address the earlier grounds of refusal regarding road safety and traffic volumes, a roundabout was offered at the site entrance, and an aggregates recycling operation on the site dropped (which would have involved importation of materials, adding to the traffic levels on the A134). The application was again refused. The Minutes of the meeting do not report on the substance of the discussion, but the reasons for refusal which resulted were the same as those used in the March decision. The differences from the previous application were modest, and there is a strong suggestion that councillors may well have had a determination to uphold a previous decision.

Note: the application at Berkyn Manor, Royal Borough of Windsor and Maidenhead, was a resubmission of a previous one which had been withdrawn over a year previously (rather than decided by the MPA). The site was granted on appeal on the 22nd July 2008.

(ii) *Departure from plans for the site previously approved by the MPA*

Councillors may be sensitive to persisting with decisions they have previously taken about the status of a site in forward planning terms. For example, they may wish to resist planning applications for working at a site they have previously decided in principle should not be worked (even if a development plan Inspector had recommended otherwise or circumstances had changed somewhat since then), or if the proposals are to work a site in a different way from that envisaged when the development plan was prepared. This arose in four cases.

The planning application at Chilton Estate, Suffolk, considered in March 2008, included proposals for concrete batching, aggregates bagging, and a construction & demolition waste recycling plant, as well as mineral working. The local district council considered that as a result the scheme was significantly at variance with the proposals included in the adopted Minerals Local Plan (where this was a site allocated for mineral working), principally due to the additional traffic these ancillary activities would generate. The Minerals Local Plan Inspector had assumed 30 HGV movements each way daily whereas the current application was for 37. Officers were satisfied with the proposed junction arrangements and concluded that the estimated daily volume of HGV traffic associated with the development was only marginally higher than that anticipated at the Minerals Local Plan Inquiry in 1997. The minutes of the committee to decide the application demonstrate that traffic was the principal concern of councillors, and mention was made of the increase in traffic volumes over the years. The application was refused on traffic grounds. No specific mention was made in committee of the Inspector's report in 1997, and there is no indication of a determination to reinforce the proposals in the adopted plan. As the councillors of the committee which proposed allocation of the site were almost wholly different from those deciding the subsequent application, the greater likelihood is that the later decision reflected essentially a judgement on the facts of the application.

The scheme at Lavant, West Sussex proposed a new extraction area of 59 hectares as part of a wider application area which included processing plant and silt lagoons. 70% of the area proposed to be excavated was identified by the County Council for working in the Minerals Local Plan, and this was upheld by the plan Inspector in 1999. Transport of the material to be worked was a major issue at that time. Two of the six phases of the proposed working would be outside the land allocated in the plan, though the overall output would be 2 Mt rather than the 2.4 Mt allocated. The local district council objected to the lack of justification for working outside the allocated land; the county landscape officer had concerns about one of the two phases on land not previously allocated; and local residents expressed concern about the impacts of departing from the previously agreed plan. The officers' report considered at great length the issues raised in relation to the plan, concluding that the application was a valid and reasonable departure from the plan. At the committee meeting to decide the application, councillors expressed concern about the extent of the departure from the adopted plan, and the unacceptability of this was the single reason why permission was refused. It is therefore clear that the departure from the approved plan was central to the local amenity concerns which led to the decision. What is unclear is whether any of that concern stemmed from an underlying determination in principle not to depart from the plan previously agreed by the Council.

Busta Triangle, Hampshire had been specifically excluded from the Preferred Areas promoted by the County Council in its Minerals and Waste Local Plan in the mid-1990s. The Council considered that the margins and screening would reduce the working area so significantly that the site yield would not justify the disturbance that would be caused by the mineral extraction. The site was nonetheless promoted by the operator, and the Inspector at the Local Plan Inquiry concluded that screening of the Busta Triangle was not insurmountable and that appropriate protection measures could safeguard the amenity of local residents and the users of the rights of way. He accordingly recommended that the site be included as part of the Preferred Area. Notwithstanding the advice, the County Council still omitted it from the Plan. There might, therefore, subsequently have been some predisposition by the councillors to refuse the application, in line with their earlier approach.

The officers' report on Busta Triangle reiterated that the Local Plan Inspector had concluded that the site could be worked without causing significant environmental impacts on the locality and that it could be extracted in such a way as still to provide a valuable contribution of mineral to the county's landbank. Whether the difference of view between the council and the Inspector was important in the councillors' decision on the later planning application is difficult to know. None of the objections recorded mentioned this issue from the site's planning history. The minutes of the case are, unusually, too brief to report any of the discussion which led to the

decision to refuse the application, though departure from the adopted Plan was the starting point for the only reason for refusal (which then emphasised local amenity impacts).

The site at Runshaw, Lancashire had been considered in detail in the Lancashire Minerals and Waste Local Plan in 1997, after it had been proposed as within an 'area of search' by the County Council. Objectors wanted the site removed, whereas the mineral company wanted the site elevated to a 'preferred area' to establish the acceptability of working. The Inspector found that working the site would have permanent and detrimental effects on the landscape and an adverse impact on amenities during working, and concluded that without firmly establishing that there were no better alternative sites or options to meet the necessary provision, a site-specific allocation should not be supported.

The applicant adjusted the proposals to address the comments by the local plan Inspector. Nonetheless, the officers' report reached conclusions similar to those of the Inspector regarding the landscape and amenity issues. A wider study of alternative resources had not identified any other sites that had sufficient proof of workable resources or which were likely to be brought forward in the required timescale, and the officers' report therefore recommended that permission be granted. The views of the local plan Inspector were mentioned by councillors in the committee to decide the application, and the committee considered, in effect, that the impacts of the scheme – particularly on amenities – remained unacceptably high. Departure from the minerals local plan was identified in all three reasons for refusing the application. It is unclear whether councillors were in any way influenced in this finely balanced decision simply by a desire to sustain the approach the council had taken to this site at the local plan stage, as endorsed by the Inspector.

(iii) *Previous operations on the existing site*

Councillors may consider important the recent performance of a mineral company in implementing an existing permission, as an indicator of the company's reliability in future when implementing the proposals applied for. This can sometimes be an undercurrent behind the decision, or a matter which is aired by objectors but cannot be shown formally to have affected the decision. The topic arose in two of the cases considered here, both of which were unusual in that the actual contribution of the issue to the decision was fully documented.

At Runfold South, Surrey the officers' report stated that "*residents have also raised additional issues of vermin, odour, litter, leachate, gas flies. Officers consider that the additional issues relate to the existing commercial and industrial landfill operations and therefore are not relevant to the current proposal for mineral extraction and infilling with inert waste. Residents have raised concern over the possible lack of control on the type of waste that is used to infill the resultant void-space following sand extraction*". Numerous councillors were unhappy with what they considered the poor management of the existing site by the applicant, and the Minutes of the committee meeting to decide the application record this as a reason for refusal. However, this did not find its way into the formal reasons for refusal (which were based on the other three reasons given in committee). This does therefore appear to be a case where the operator's record of working the site carried weight in the minds of the councillors. This was despite the officers' advice that the current proposals should be assessed on the proposals in the case and that the facts of a previous case were not relevant.

The officers' report on Stonehenge Farm, Oxfordshire reported representations that the applicant could not be trusted to comply with routeing agreements for the dispatch of minerals as they had not been complying with the agreement that currently covers vehicles leaving the existing quarry site, and this had led to lorries travelling down restricted routes. A survey carried out by the County Council confirmed that lorries from the firm's Stanton Harcourt Quarry were ignoring the routeing agreement and causing a nuisance in the local villages. The officers suggested monitoring of compliance with the legal agreement proposed for the application site, at the

expense of the applicant. The issue was raised in the committee meeting to decide the application, through a specific reference to concern about HGVs crossing Newbridge (an historic bridge over the River Thames). The application was refused for three reasons, one of which was "*that routeing agreements have proved ineffective in the past and in practice and was therefore considered to be contrary to Oxfordshire Structure Plan (OSP) Policy T8*". Policy T8 states that proposals for development should be permitted only if they provide adequate access and mitigation of adverse transport impacts.

In the cases of Runfold South, Surrey and Stonehenge Farm, Oxfordshire there were demonstrable concerns that the past performance of an operator affected councillors' decisions on planning applications for future workings (even though in one case officers had specifically advised against giving weight to this issue). These are therefore clearly cases where councillors were predisposed to reach particular decisions on cases, arising from the planning history of the applicant. This might be termed a cultural influence on decisions, to the extent that it is not influenced by the specific issues raised by the fresh applications.

The conclusion can be drawn from these cases that councillors were clearly influenced in their decisions to overturn officers' recommendations of approval in two cases due to the perceived poor performance of the applicant at existing sites. There is also a possibility – in varying degrees of likelihood but incapable of proof – that councillors may have wished to reinforce decisions which their committees had previously taken, either to refuse earlier applications on the sites now applied for or to reinforce earlier views when the sites were considered in the preparation of local development plans. In all cases these concerns about the planning history of the applicant or the site would have been distinct from the merits of the cases for decision, and might therefore be termed cultural influences.

6.3 CONCLUSIONS ON RECOMMENDATIONS OVERTURNED

With only one case in which an officer recommendation of refusal was approved by councillors (Shipton-on-Cherwell), the sample size is clearly far too small for the drawing of conclusions. This is reinforced in this specific case, as mineral working was a minor aspect of the development applied for.

In ten cases the officer recommendation of approval was not accepted and permission refused. The overwhelming issue accounting for this (and also accounting for the decision overturned the other way) was local perception of the impact of the application on the local amenity. Strategic issues such as need for the mineral, Green Belt (at Shipton-on-Cherwell), or a SPA (at Busta Triangle) were afforded little weight. The findings suggest a degree of cultural resistance to mineral working which councillors consider to be locally inappropriate.

Extrapolation of these findings should be approached with care. Forty-nine (83%) of the decisions in the study inventory were in line with officers' recommendations, with many cases no doubt displaying local amenity impacts – but which did not justify departure from officers' recommendations. In the time available, it has not been possible for this study to explain why amenity issues should be of overriding importance in these 11 cases but not in any of the others. Furthermore, the sample size is too small to conduct any worthwhile analysis of the factors which might correlate with the observed pattern of overturned officers' recommendations.

6.4 RECOMMENDATIONS OVERTURNED IN PROTECTED AREAS

Busta Triangle, Hampshire was the only site at which the officers' recommendation to approve an application for mineral working was not accepted and refused within a designated area – in this case the Thames Basin Heaths SPA. The protected area issues considered by the MPA are set out in section 4.5.2.2.

As indicated in section 4.5.2.2 local issues were the dominant concern. In particular, councillors and nearby residents objected to the landscape impact of restoration at the lower level after

mineral working. There had been no objections to the proposal on nature conservation grounds, and nature conservation was not mentioned in the grounds for refusal. So far as the SPA was concerned, Natural England advised Hampshire County Council that an AA was not necessary because the development was unlikely to have significant impacts on the SPA. The SPA therefore did not carry significant weight, one way or the other, in the decision by the Mineral Planning Authority.

The final outcome of this case remains to be resolved through the appeal process and the High Court (refer to footnote 5) It raises an important point of law and policy in respect of European wildlife sites. The Inspector concluded that the grounds for refusal were insufficient and was minded to grant permission in line with the officers' original recommendation. On the principle of mineral working he concluded "*In particular, extraction would not have adverse effects in respect of MWDFCS Policy DC2 and the SPA designation*" (paragraph 17 of Inspectors report). However, he revisited the issue of the SPA in depth and came to the decision that permission could not be granted. The mineral company appealed against this decision to the High Court, the outcome of which is awaited (as at the end of November 2009).

Lavant Quarry in West Sussex is not within a designated area but the proposed site lay 250 metres from the Sussex Downs Area of Outstanding Natural Beauty (and proposed South Downs National Park). The officers' report indicated that views into the site were available from the AONB at points open to the public (such as the Trundle). Lavant Parish Council (PC) objected to the proposals because of the impact on views from the AONB (and also due to changing the character of the 'gateway' to the AONB), and the matter was raised in private representations. However, the South Downs Joint Committee did not object to the proposals (subject to some minor conditions), and this was considered '*particularly relevant'* in the officers' report, which recommended approval of the scheme.

7 Summary and conclusions

Society requires mineral resources, such as aggregates, to maintain a vibrant economy. Society must also ensure that the ecosystem services which are essential to life, recreation and well being, are maintained. Government policies and the national planning system provide the framework for spatial planners to balance these different needs. It is important that the effectiveness of these policies and their impact on one another are considered and reviewed. Using available evidence, this project has attempted to evaluate the environmental impacts of granting new permissions within and outside of specified statutory designated sites to enhance the evidence base available for any future review of MPS1. The resultant evidence suggests that current legislation and policy on the protection of designated areas in England is meeting its objectives.

The study identified 60 relevant applications for aggregate extraction in England since the introduction of MPS1 in November 2006. Only eleven of these were refused permission within the study period. When analysed, only four applications were located within a specified designated area. There were no applications within National Parks during the study period and only one within an AONB, although two applications bordered National Parks, one further application bordered and SAC and SPA, and one further application bordered an AONB. Of the four applications identified within designated areas, none were for new quarries. In all four cases, the interests of the designation were properly assessed in all respects in coming to the decision reached, although the degree to which MPS1 itself has influenced this, over and above other policies, has not been determined. The progressive effect of a reduction in aggregates supply from designated areas, especially protected landscapes, can be expected to increase pressure at an equivalent rate on primary aggregates resources in land outside the designated areas. Where and how the nation's aggregates should be supplied from in the future therefore merits increasing attention.

An assessment of every ES was undertaken for all 60 relevant applications. The results of this analysis showed that 'landscape & visual' is the only subject matter incorporated into every ES outside of the specified designations. Within the four applications within specified designations, three other subjects are also always included; noise; dust/air quality; and highways/transport. Nature conservation, in combination with other lands uses, represents the most common afteruse element cited in the applications and is indistinguishable between sites within or outside of the specified designations. Furthermore, only two applicants suggested that the key mitigation measures were as a consequence of being within a specified designation. This might imply that the mitigation practices employed by applicants are nearly always of a high standard, irrespective of location from a designated area. Alternatively, the significance of a designation to the application diminishes rapidly with distance meaning that the application may have no discernible effect on the designation and as such is irrelevant. In essence, there appeared to be no more stringency applied to applications within or outside of a specified designation.

Only one application occurred within two or more designated areas. However, the designated areas in this case were for biological reasons (River Avon SAC and Avon Valley SPA). Therefore, this study did not find any applications which could have potentially affected multiple designations (both biological and landscape/social). Consequently, it was not possible to assess whether any application had a greater cumulative effect i.e. the total impact would have been greater than the sum of the individual impacts.

Seventeen 'potential' exemplar quarries were identified by the project team. These were considered to have minimal or acceptable environmental impact during operation and combined good planning, design, mitigation and restoration/afteruse. However, none were identified within a landscape designated area (AONB/National Park) and only two were located within a designated area for habitat (SPA or SAC). As a result, no transferable lessons in terms of after

use planning and design in keeping with the raison d'être of a landscape designated area could be drawn.

Available studies looking at public attitudes towards mineral extraction are few in number, tend to focus on cases of controversy, favour qualitative methods and rarely directly capture public attitudes. Nevertheless, the literature is useful in suggesting several key conclusions about public attitudes towards mineral extraction, not just in terms of the content of such attitudes but also regarding their determinants and consequences. Essentially, quarrying is associated in people's minds with a number of negative local impacts and a dearth of local benefits. The general public has a general lack of trust of companies engaged in extraction, with the predominant belief that when companies undertake engagement activities with local communities, they do so for strategic reasons.

The findings above are supported in the analysis of culture influence on the mineral planning application process. The overwhelming issue accounting for why application decisions were overturned by councillors was deemed to be local perception of the impact of the application on the local amenity, suggesting a degree of cultural resistance to mineral working. The perceived poor performance of the applicant at existing sites was also deemed to influence Councillors decisions. These issues need to be addressed through employing more deliberative, two-way mechanisms of public and stakeholder engagement as well as by emphasising the positive social, economic and environmental impacts resulting from minerals extraction, including improvements to biodiversity that may accompany post-extraction remedial work.

There is no evidence in the investigation and assessment of the 60 relevant applications carried out within this study to suggest that MPS1 is playing any distinctive role other than to reinforce the preference for aggregate extraction to be outside the five specified designations. The effect of MPS1 policies as experienced by this study would seemingly cause limited replenishment of permitted reserves within these specified designations over time. As a result, a progressive switch of aggregates supply could be expected from within protected areas to locations outside them. A step change downwards in output from designated landscapes is foreseeable after 2042.

MPS1 offers no new policy in respect of designated areas and in that respect the publication date of MPS1 (as cut-off point for the issues being studied) carries no special relevance. Nonetheless, MPS1 is a helpful rephrased reminder of the policy approach for MPAs to take in cases where mineral-related developments impinge on designated sites.

7.1 PROPOSED WORK TO BE UNDERTAKEN AS A PROJECT EXTENSION

A deliverable of this project was to determine a phase 2 project continuation of this project if it was considered that significant improvements to the evidence base could be provided over a longer period of time (concluding by the end of February 2011). Whilst the initial work programme provided an indicative evaluation of the environmental impacts of aggregate production within designated sites, we strongly believe that a broader evidence base, encompassing a wider site inventory and a significant new survey of public perception of quarrying in designated and non-designated areas, is required to provide a more definitive and robust evaluation. Discrete work packages for a phase 2 extension are outlined below in priority order[8].

[8] Any future work which builds on this research will need to be aware of the possible boundary changes as a result of the impending consultation on expanding the Lake District and Yorkshire Dales National Parks and as a result of the confirmation of the South Downs National Park area. These changes may well affect some aggregates sites.

7.1.1 The implications for 2042 and beyond of the continued application of MPS1 and related policies.

The effect of current mineral policy (MPS1) as experienced by this study will lead to a major step change downwards in aggregate permissions in the specified designated areas by 2042 (Section 4.6.4). While this may have self evident social and environmental benefits within the specified designated areas, the effect this may have on alternative sites outside of these areas, which may themselves be of significant value in terms of beauty, cultural heritage, amenity, biodiversity etc, is largely unexplored.

For a specific County with few or no specified designations, further research proposed here would examine and extrapolate the hypothetical position in 2042 (and beyond). The predicted state of current permissions and preferred areas would also be assessed.

7.1.2 Examining the reasons why councillors accepted officer's recommendations.

The research has established that impact on local amenity is by far the most significant reason for the overturning of MPA officers' recommendations on planning applications for aggregates working. This was the principal consideration in all 11 cases in the study sample, including in the one case where refusal was recommended. However, the project did not have the capacity to investigate the reasons why councillors accepted officers' recommendations in the other 49 cases. Local amenity issues may have been significant in these cases too. Further study would be desirable to examine the reasons for the acceptance of those 49 recommendations and thereby, together with the current results, to:

- assess how extensive or otherwise are the perceived impacts of aggregates proposals on local amenities;
- establish the circumstances in which significant concerns about local amenity are not overriding in cases where aggregates applications are permitted; and
- give an insight into differences between cases where officers' recommendations are either accepted or overturned.

At the same time, the analysis could also address the impact of local landbank levels on decisions. These were found by the current study to carry very little weight in cases where officers' recommendations were overturned, though that does not allow any conclusion to be reached on the other 49 cases.

Such an analysis would provide a unique evaluation of those forces which drive decisions on significant proposals for aggregates extraction, and those issues which carry relatively little weight. This would allow all parties to focus their efforts more effectively on key issues, rather than make assumptions about those topics which influence councillors or which policy suggests ought to do so.

7.1.3 Gathering primary evidence on public beliefs and acceptance of quarrying

This report has identified a dearth of empirical research on public attitudes towards mineral extraction, both in the UK and elsewhere. Where they do exist, studies suggest that mineral extraction is often (but not inevitably) viewed negatively by the public, and associated with a range of specific drawbacks including noise from blasting, truck movements and air pollution that are perceived to damage the local environment and to reduce property values; and that private companies are often viewed with mistrust and responded to with scepticism. Anecdotal evidence suggests that levels of knowledge of scientific aspects of mineral extraction are low and there have been calls for 'education' to increase knowledge levels. In addition the UK Minerals Forum (2009) suggest that a sophisticated understanding of public attitudes towards mineral

extraction would be of considerable value to policy makers and industry in informing development of UK spatial planning policy for mineral supply.

Through a series of case studies identified from the project inventory, further research could follow the progress of specific applications in different areas, within and outside of the specified designations. This would allow the investigation of the transformation of general public attitudes into specific positions of acceptance with respect to specific sites. This would involve interviews with key stakeholders, analysis of secondary materials such as media and materials propagated by stakeholders, group discussions with local residents and a questionnaire.

The rationale for case study selection is designed to reveal the impacts of quarrying proximity (e.g. potentially heightened awareness of mineral extraction's positive and negative outcomes, both locally and elsewhere), and designated area proximity (willingness to protect such areas from development), upon public attitudes towards future quarrying activities.

7.1.4 Enhancing the site inventory and number of designations examined

The number of aggregate mineral planning permissions granted since the MPS1 was introduced in November 2006 is very small and very few of these have had time to significantly impact on the environment. Since few aggregates applications have been determined since the introduction of MPS1, and limited time has lapsed for any impacts on the environment to evolve and be monitored, a further study, based on (for example) information gathered as part of the Aggregate Mineral surveys conducted in the last decade, or at set time periods prior to the introduction of MPS1, will significantly increase the number of sites which can be examined and which in turn would allow a more complete analysis of the impact of MPS1.

While this study deals with five specified designations, it would be useful to extend the study to include other designations (for example SSSIs, Ramsar sites and more localised designations such as Local Nature Reserves etc). It would be interesting to examine applications to extend extant quarries within designated areas. Further research may establish that mineral operators wished to extend quarries but failed to submit applications for a variety of reasons including chances of success, costs, increased mitigation measures etc.

7.1.5 Exemplar quarries - Identifying transferable lessons

As part of this study, the officers' reports, Non-Technical Summaries, and Decision Notices for the 60 relevant applications have been collected and collated and a project proforma produced for each application; this is a valuable resource in its own right. Contained within these pages are the identification of and the solutions to a whole raft of pre-operational, operational and post-operational problems associated with aggregate extraction in England. In addition to problems, these documents also highlight opportunities. They, therefore, may contain transferable lessons which could be researched and promoted. This would be of considerable benefit to the industry, MPAs and other stakeholders. The simplest way to extract these transferable lessons would be by the identification of exemplar quarries.

While this study has given an indication (albeit through subjective exploration) of the possible scale and numbers of exemplar quarries, the approach could be refined and undertaken in a robust way based on a defined methodology which attempts to be as objective as possible. Transferable lessons could then be identified from good examples of applications, approaches, techniques and afteruses/landforms in a more robust way.

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Appendix 1 Aggregates strategic research programme call 2009

Project 2: Evaluate the environmental impacts of aggregates production within designated sites.

Rationale and objective:

Government policy on minerals (Minerals Policy Statement 1 or MPS1) imposes restrictions on development within areas protected for their natural environmental value. For example, MPS1 does not permit major developments in National Parks, Areas of Outstanding Natural Beauty and World Heritage Sites except in exceptional circumstances. At the same time a large proportion of the resources that would otherwise be available as aggregates are within designated sites, because it is the geological formations that both give rise to aggregates resources and often contribute to an area's conservation or landscape value. A recent study (Mankelow *et al.* 2008) provides background on quarrying within designated sites including on the availability of aggregates resources and minerals permissions granted within and outside designated sites. This demonstrated that, for example, over 50% of crushed rock resources are within designated sites. Extrapolating current trends, it also showed a gradual reduction in quarrying within these sites which suggests that, unless this reduction will be offset by a reduction in the total use of aggregates, more resources will be supplied from elsewhere.

The objective of this project is to evaluate the environmental impacts of granting new permissions within designated sites to enhance the evidence base available for a review of MPS1.

Approach:

Researchers are expected to suggest their own approaches and methodologies. Some further guidance is provided below.

1) The project should include available evidence on the permissions granted within and outside designations since the introduction of MPS1.

2) The project should include at least National Parks and AONBs and any other types of designation that researchers consider are relevant, and should assess differences in environmental impacts between different types of designation.

3) Researchers should consider the environmental impacts of new permissions outside designated sites as a reference point.

4) Researchers may like to include evidence on the public perceptions of quarrying within different designations and outside.

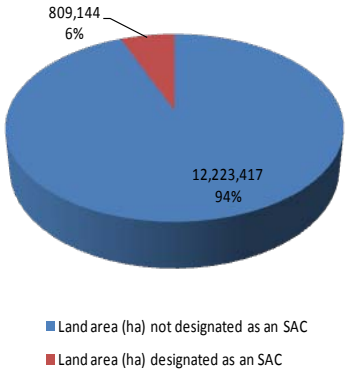
5) This project is expected to conclude by November 2009. If researchers consider that it would be possible to provide significant improvements to the evidence base over a longer period of time, they may also wish to include proposals for a longer project concluding by the end of February 2011.

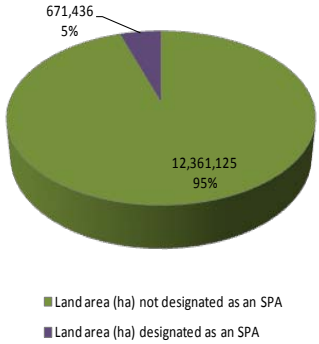
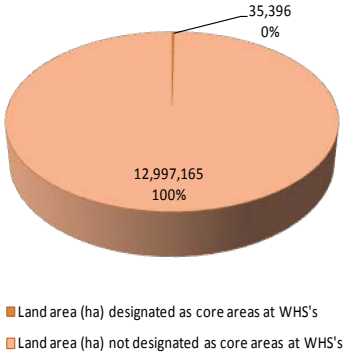
Appendix 2 Environmental designation legislation and policy

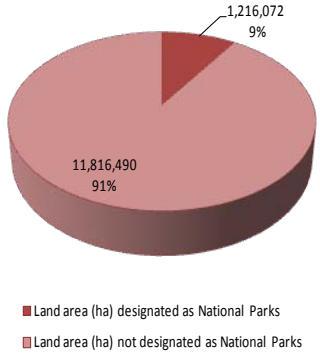
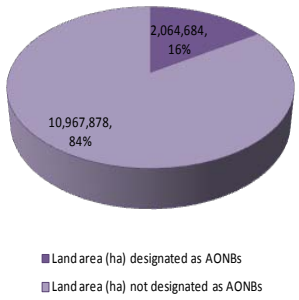
In England, *Natural England* is the government's statutory advisor on the natural environment and as such is tasked "to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations, thereby contributing to sustainable development" (OPSI 2006).

A short summary of the legislation that relates to each designation considered in this study is provided in Table 1. It is this legislation that informs policy and ultimately affects the decisions that are made by planning officers on the applications for development. The specific components of MPS1 which relate to the designations in this study are outlined below. A more holistic narrative about each statutory designation type, its legislative history and impact on aggregate working can be found in Mankelow *et al.* (2008).

Table 10. Legislation affecting the relevant designations.

Designation	Key legislation applicable to England	Summary of the legislation	Approximate extent of England covered
Special Area of Conservation	**European:** 92/43/EEC (May 1992), Article 3 **National:** The Conservation (Natural Habitats, &c.) Regulations 1994	Commonly known as the Habitats Directive, this European Directive provides measures to conserve natural habitats and associated wild flora and fauna. Article 3 of the Habitats Directive specifies that a network of special areas of conservation known as 'Natura 2000' should be set up. This network should include sites hosting habitats that are listed in Annex I and habitats of the species listed in Annex II of the directive. The idea is that the sites should be maintained or, where appropriate, restored within their natural range. SPAs should also be included in this network. Article 3 specifies that SACs should be designated in accordance with objectives set out above and in Article 4 of the directive. Appropriate steps must be taken by	 Please note that this does not include proposed or candidate SACs or SACs that are shared with Scotland or Wales and was taken from data compiled on the JNCC website.

		member states to avoid the deterioration of habitats and the habitats of species as well as disturbance of the species for which the areas have been designated.	
Special Protection Area	**European:** 79/409/EEC (April 1979), Article 4 **National:** Wildlife & Countryside Act 1981 (as amended) *and* The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)	Commonly known as the 'Birds Directive', this European Directive provides conservation measures to protect wild birds. Under Article 4 of the Birds Directive, it is a requirement of member states to designate SPAs in the most suitable territories for the birds that are listed in Annex I to the Directive together with birds that are rare and vulnerable or are regularly occurring migrating species. Even if it involves land outside the SPA, appropriate steps must be taken to avoid the pollution or deterioration of habitats or any disturbances that would affect the birds within the SPA boundary. With the introduction of the Habitats Directive, as stated above, SPAs became part of the Natura 2000 network.	 Please note that this does not include potential SPAs or SPAs that are shared with Scotland or Wales and was taken from data compiled on the JNCC website.
World Heritage Sites	**International:** The Convention Concerning the Protection of the World Cultural and Natural Heritage (The World Heritage Convention) 1972 The UK ratified the convention in	In Article 4 of the official text, it is specified that it is the duty of each State Party to ensure that sites of cultural and national heritage (as identified in articles 1 and 2 of the official text), are identified, protected, conserved, presented and transmitted to future generations. The full guidelines as to what this entails are given in the *'Operational Guidelines for the implementation of the World Heritage Convention'*. In this document the selection criteria for the identification	 Please note that this information was calculated using a Geographical Information System that was collated for this project.

	1984	of a World Heritage Site are listed which were set by an international committee.	
National Parks	National Parks and Access to the Countryside Act 1949 Environment Act 1995	National Parks have a high level of protection and are planning authorities in their own right. They are extensive tracts of country in England that are promoted conserved and enhanced due to their natural beauty, wildlife and cultural heritage for the understanding and enjoyment of the public. In exercising or performing any functions in relation to or affecting land in a National Park, any relevant authority shall have regard to the purposes for which National Parks are designated and, if it appears that there is a conflict between those purposes, shall attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area comprised in the National Park. (para-phrased Article 11A, para 2).	 Please note that this information was calculated using a Geographical Information System that was collated for this project.
Areas of Outstanding Natural Beauty	National Parks and Access to the Countryside Act 1949 Countryside and Rights of Way Act 2000	Provisions were first made for the designation and protection of areas of outstanding natural beauty in The National Parks and Access to the Countryside Act 1949. This section was later repealed and replaced by The Countryside and Rights of Way Act 2000. Areas of natural beauty are designated for conserving and enhancing the natural beauty of the area.	 Please note that this information was calculated using a Geographical Information System that was collated for this project.

SPECIAL PROTECTION AREAS AND SPECIAL AREAS OF CONSERVATION

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are designated in accordance with European Directives 79/409/EEC, the 'birds directive' and 92/43/EEC, 'the habitats directive'. Together, SPAs and SACs form 'Natura 2000' sites which is a European network of sites of special nature conservation interest and are considered to be the most important sites for wildlife in the UK. The directives "*introduced the precautionary principle that projects can only be permitted having ascertained no adverse integrity of the site*" (JNCC 2009).

National policy with respect to mineral development in these areas, and regarding potential SPAS or *pSPAs*[9] and candidate SACs[10] *or cSACs*, is articulated in MPS1 (Box2). MPS1 also refers the reader to *PPS9: Biodiversity and Geological Conservation* (Box 3) and the accompanying Circular 06/05. Regional Planning Bodies (RPBs), Mineral Planning Authorities (MPAs) and Local Planning Authorities (LPAs) are obliged to carry out their functions in relation to the preparation of plans and in relation to development control, in accordance with the national policies for minerals planning set out in these policies.

Box 2. Extract from MPS1: Paragraph 14, Protection of heritage and countryside.

where minerals development is proposed within, adjacent to, or where it is likely to significantly affect a European site (potential and classified Special Protection Areas, candidate and classified Special Areas of Conservation and listed Ramsar Convention Sites), take account of the advice contained in PPS9 and the accompanying joint ODPM [Now CLG] */Defra Circular' (DCLG 2006)*

Box 3. Extract from PPS9: Paragraph 6, International Sites.

The most important sites for biodiversity are those identified through international conventions and European Directives. Local planning authorities should identify these sites on proposals maps and may need to cross-refer to the statutory protection given to these sites in the explanatory texts in local development documents. Since they enjoy statutory protection specific polices in respect of these sites should not be included in local development documents (see also Part I of ODPM/Defra Circular ODPM 06/2005, Defra 01/2005). The Habitats Regulations do not provide statutory protection for potential Special Protection Areas (pSPAs) or to candidate Special Areas of Conservation (cSACs) before they have been agreed with the European Commission. For the purposes of considering development proposals affecting them, as a matter of policy, the Government wishes pSPAs and cSACs included in a list sent to the European Commission, to be considered in the same way as if they had already been classified or designated. Listed Ramsar sites, also as a matter of policy, should receive the same protection as designated SPAs and SACs. (DCLG 2005a)

[9] **Potential SPAs (pSPAs)** are sites that have been approved by Government and are in the process of being classified.

[10] **Candidate SACs (cSACs)** are sites that have been submitted to the EC, but are not yet formally adopted.

In addition to the instruction in MPS1 (Box 2) and PPS9 (Box 3), ODPM Circular 06/05 states that proposed SACs, or *pSACs*[11], should also be considered by planning officers when determining planning applications even though these are not European sites as a matter of law (Box 4). Due to a lack of available data, pSPA, cSACs and pSACs are not included in the project analysis.

Box 4. Extract from ODPM (now CLG) Circular 06/2005/ Defra Circular 01/2005: Paragraph 6.

Prior to its submission to the European Commission as a cSAC, a proposed SAC (pSAC) is subject to wide consultation. At that stage it is not a European site and the Habitats Regulations do not apply as a matter of law or as a matter of policy. Nevertheless, planning authorities should take note of this potential designation in their consideration of any planning applications that may affect the site. *(DCLG 2005b)*

The approach taken by a planning authority when in receipt of an application for development affecting any of the internationally designated nature conservation sites (i.e. SPA, pSPA, SAC, cSAC, pSAC or Ramsar Convention site) is outlined in Circular 06/05 (Figure 11). If the proposed development is likely to have a *significant* affect on a European site (and is not directly connected to the management of the European site for nature conservation) then the decision taker is required (under Regulation 48(1) of the Habitats Directive) to provide an a*ppropriate assessment*. The regulations do not specify how the assessment should be undertaken but its purpose is to assess the implications of the proposal in respect of the designation's conservation objectives (English Nature 1997).

A competent authority (e.g. an MPA in the case of a mineral development), can only authorise or grant a planning permission if '*no reasonable scientific doubt*' remains as to the absence of adverse effects to the integrity of a site. It is important for any development occurring within a (indicative) distance of 2km from an SPA or SAC to consider its impact (direct or remote) on the designated area (Mankelow *et al.* 2008). If no other options exist, and there is an overriding need for the proposed mineral development, the MPA would establish whether any priority species were affected by the development. The Secretary of State is then notified and will analyse the potential effects on the overall coherence of the Natura 2000 network and take any compensatory measures that are necessary before permitting the development. If a priority species is adversely affected and there is an overriding need for the development, consultation would need to take place between the Government and the European Commission.

[11] A Proposed SAC (pSAC) is a site that has been formally advised to UK Government, but not yet submitted to the EC for approval.

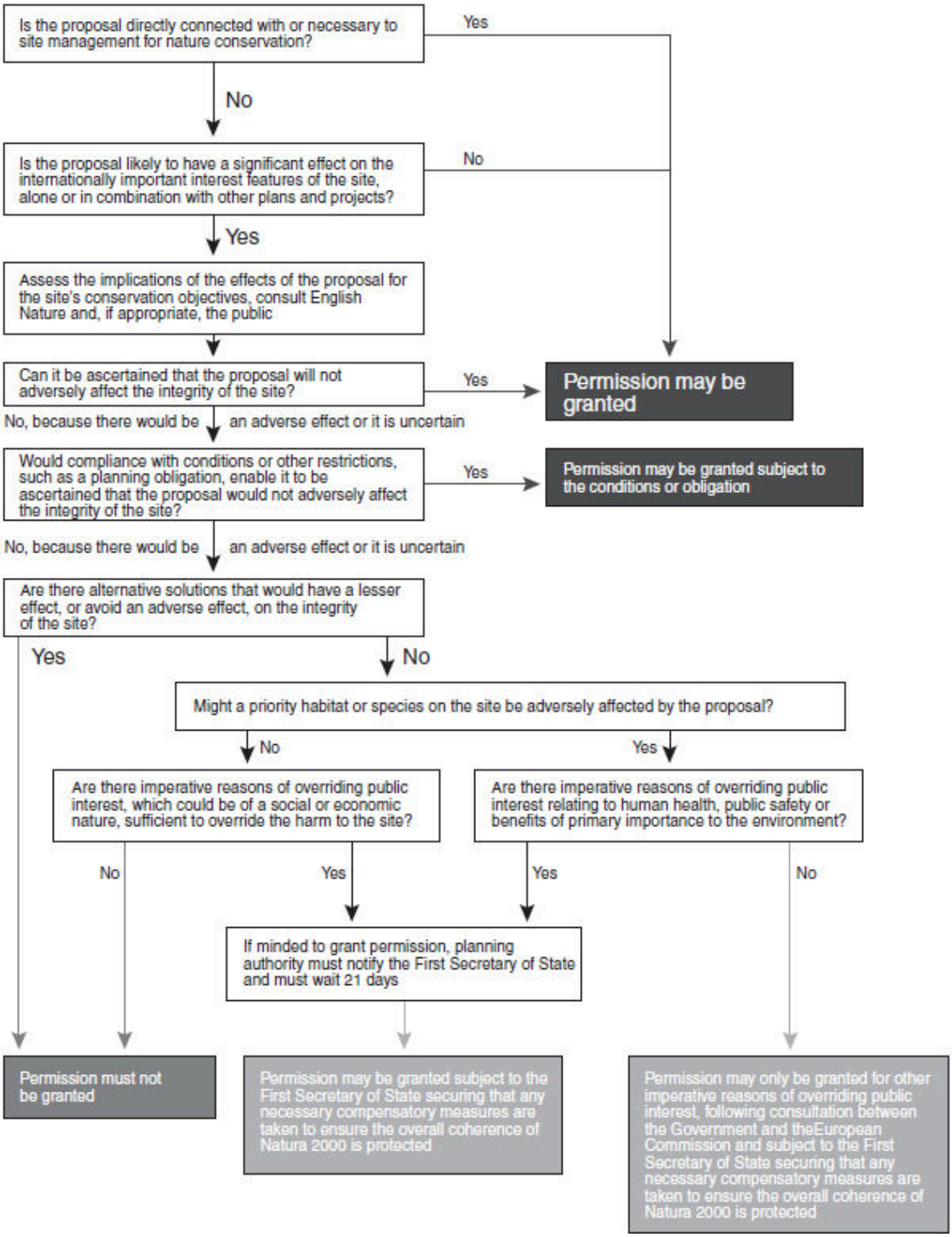


Figure 11. A flow chart to explain the process developers should follow to ensure that permitted development rights are implemented in accordance with the Habitats Regulations. It identifies the role of the local planning authority and English Nature (Now Natural England) (DCLG 2005b).

Appendix 2

Distribution of SACs and SPAs

Table 2 shows the number and area of SPAs, and SACs in England as at 31st August 2009. The distribution of SACs and SPAs is shown in Figure 12. For a full list of SPAs and SACs refer to JNCC (2009).

Table 11. List of SPAs and SACs in England as at 31 August 2009. Source JNCC (2009).

European designation	Number	Area (ha)
Special Protection Areas (SPA)	78	671436
Special Area Conservation (SAC)	228	809,144

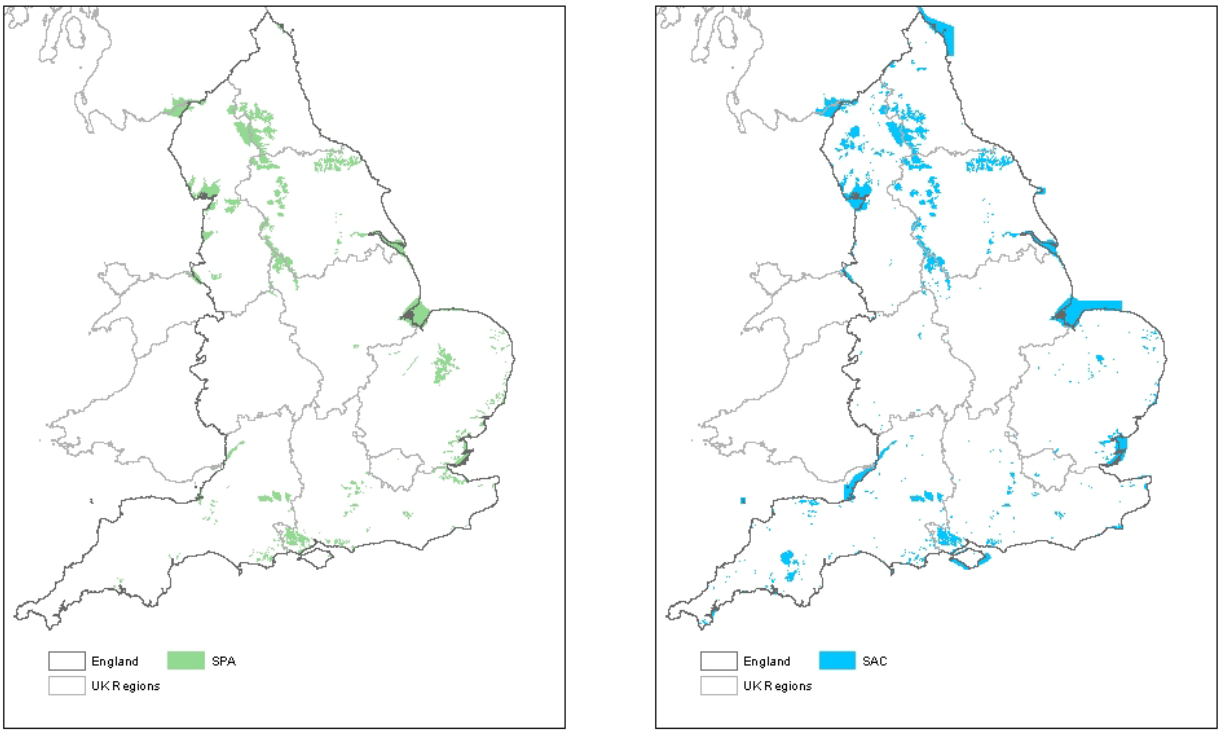


Figure 12. Distribution of SPAs and SACs in England as at 31st August 2009.

WORLD HERITAGE SITES, AONBS AND NATIONAL PARKS

Natural England also has specific responsibilities for National Parks and Areas of Outstanding Natural Beauty (AONB)[12] (Natural England 2009). English Heritage is the government's principal advisor for World Heritage Sites.

National policy with respect to mineral development in areas that are classified either as a World Heritage site, an AONB and/or a National Park, is detailed in paragraph 14 of MPS1 (Box 5).

[12] The "heritage coast" classification scheme was initiated in 1972 to protect coastline of special scenic and environmental value from undesirable development.

Box 5. Extract from MPS1: Paragraph 14.

'…RPBs, MPAs and LPAs should carry out their functions in relation to the preparation of plans and in relation to development control, in accordance with the national policies for minerals planning set out below:…

*…**Protection of heritage and countryside**:...*

…do not permit major mineral developments in National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage Sites except in exceptional circumstances. Because of the serious impact that major mineral developments may have on these areas of natural beauty, and taking account of the recreational opportunities that they provide, applications for these developments should be subject to the most rigorous examination. Major mineral development proposals should be demonstrated to be in the public interest before being allowed to proceed. Consideration of such applications should therefore include an assessment of:

i) the need for the development, including in terms of national considerations of mineral supply and the impact of permitting it, or refusing it, upon the local economy;

ii) the cost of, and scope for making available an alternative supply from outside the designated area, or meeting the need for it in some other way;

iii) any detrimental effect on the environment, the landscape and recreational opportunities and the extent to which that could be moderated.'

(DCLG 2006)

World Heritage Sites

The Communities and Local Government Circular 07/2009 '*Circular on the protection of World Heritage Sites*' (Circular 07/09) (DCLG 2009b) provides specific government policy and guidance on the protection and management that is necessary for World Heritage Sites (Box 6) and cites PPS9 (DCLG 2005a) and PPG16 (DCLG 1990), for relevant advice. English Heritage has published guidance that complements the Circular, which is endorsed by the Secretaries of State for Communities and Local Government and for Culture, Media and Sport (English Heritage 2009)

According to current regulations, all applications for development that are in or partly in a World Heritage Site should be accompanied by an Environmental Impact Assessment (EIA). Design and Access statements also are required if developments affect World Heritage Sites (DCLG 2009). In this way the designation of a World Heritage Site does not automatically preclude development, although the impacts of the development must be assessed. Planning authorities are required to consult the Secretary of State for Communities and Local Government should they wish to approve a proposal for development which English Heritage maintains an objection to. "*The Secretary of State then has the discretion to call-in the application for his own determination if he considers it appropriate to do so"*(DCLG 2009a).

Box 6. Extract from Communities and Local Government Circular on the protection of World Heritage Sites (Circular 07/2009).

It is stated that planning authorities should:

- protect the World Heritage Site, any buffer that is defined and it's setting, from inappropriate development.
- balance the needs of conservation, biodiversity, access and the interests of the local community and the sustainable economic use of the World Heritage Site in its setting.
- protect the site from changes which could amount to a cumulative effect on the World Heritage Site.
- enhance the site where appropriate.
- protect the site from climate change whilst still preserving the authenticity and integrity

(DCLG 2009b)

National Parks and AONBs

National Parks policy derives from the National Parks and Access to the Countryside Act 1949 , as part of a package of post-war measures aimed at the physical and social reconstruction of Britain, and the Environment Act 1995. Their purpose is to conserve and enhance natural beauty, wildlife and cultural heritage and to promote opportunities for the public understanding and enjoyment of the countryside. AONBs differ from National Parks in that the offer more limited opportunities for extensive outdoor recreation. Policy in MPS1 on the tests to apply to new extraction proposals derives in principle and format from the 'Waldegrave test' issued in April 1987, which was repeated in MPG1 in January 1988 and MPG6 in 1989. Small variations were made to the policy in MPG6 in April 1994 (including the additional requirement to consider "*the scope for meeting the need in some other way*"), and again in MPS1 in November 2006 (when the separate consideration of the extent to which extensions would achieve an enhancement of the landscape was dropped).

Planning Policy Statement 7 (PPS7)*: Sustainable Development in Rural Areas* (DCLG 2004) mirrors MPS1 outlined in Box 5. In PPS7, nationally designated areas (including AONBs and National Parks) are acknowledged as *'having the highest status of protection in relation to landscape and scenic beauty'*. Any major development proposals that are considered by planning authorities in these areas are not allowed unless they are deemed to be in the public interest. Applications therefore must include an assessment of the need for the development, the cost of alternatives to the development that could meet the same need or be located outside the designated area, and an assessment of any detrimental impacts of the development on the environment, landscape and recreational opportunities of the in the area and how these could be moderated. Where planning permission is granted in these areas, the development is required to meet high environmental standards through the application of *appropriate conditions*. The policy conditions and their implications, both for the National Parks and for the rest of the countryside,

are discussed in Brotherton 1989 who refers to the Silkin test (1949), the Sandford approach (1976); and the Waldegrave formulation (1987).

In March 2009, The Secretary of State for Environment, Food and Rural Affairs announced his decision to confirm the designation boundary of the South Downs National Park. The National Park boundary was modified by the Minister to include areas additional to those covered by the original designation order. It is therefore a requirement to undertake further consultations in respect of the added areas only, meaning that the secretary of state is unable to make a confirmation order affecting these new additions until representations or objections about them have been dealt with. For the purpose of this study, the Ministers confirmed intended boundary (as at 31 March 2009) has been included in the list of National Parks.

Distribution of World Heritage Sites, National Parks and AONBs

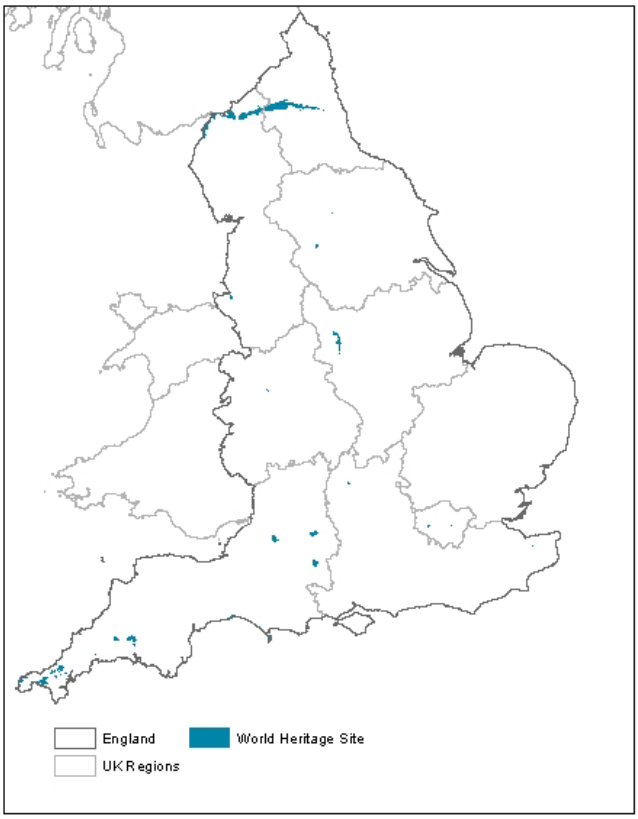
The number of World Heritage Sites (including associated buffer zones), National Parks and AONBs in England are shown in Table 12. Their locations are shown in Figure 13a.

Table 12. Number of World Heritage Sites, National Parks, AONBS in England

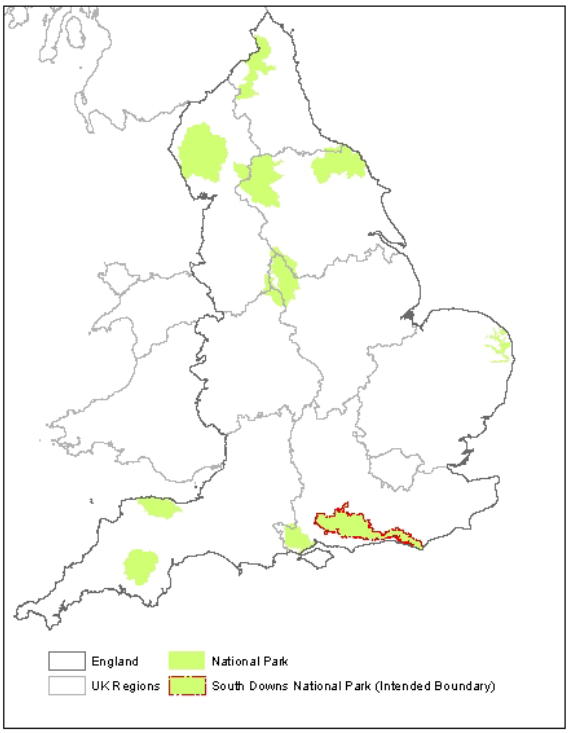
Designation	Number
World Heritage Sites	17
National Parks (including the South Downs and the Broads)	10
AONBs	36

ENVIRONMENTAL DAMAGE REGULATIONS

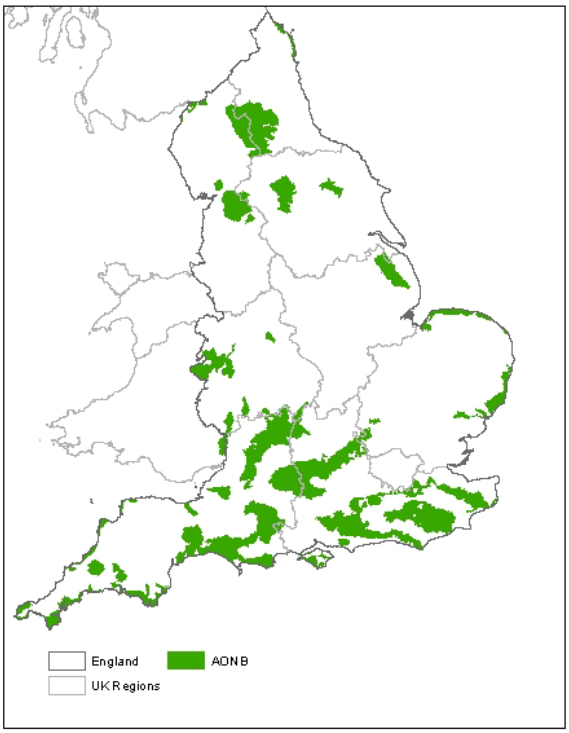
On March 1st 2009 a new environmental damage and liability Regulations, *Environmental Damage (Prevention and Remediation) Regulations 2009 SI 153:2009* (OPSI 2009), came into force in England. These environmental regulations require action for prevention and remediation of damage to habitats, land and water and follow the "polluter pays" principle. The regulations concern damage to water, a SSSI or damage to a protected species or natural habitats and primarily relate to EU species and habitats (SACs, SPAs) and SSSI's and contamination to surface or ground water. It is too early to tell whether these regulations will have any additional effects on the granting of aggregate permissions within designated areas.



(a) World Heritage Sites



(b) National Parks



(c) AONBs

Figure 13. Distribution of (a) World Heritage Sites; (b) National Parks; and (c) AONBs; in England as at 31st August 2009.

Appendix 3 Applications included in study

Project ID	Quarry Name	Application Number (if known)	Operator	MPA	Type of Aggregate	Permission Type	Decision	Date Granted / Refused	Volume
1	Brassington Moor Quarry, Longcliffe	CM3/1205/156	Longcliffe Quarries Ltd	Derbyshire County Council	Limestone	Extension - area	Granted	Dec-08	27.4Mt
2	Thrumpton's land	CM8/1000/69	CEMEX UK Materials Ltd	Derbyshire County Council	Sand & Gravel	Extension - area	Granted	Feb-07	700,000t
3	Shawell Quarry	2006/1565/03	Lafarge Aggregates Ltd	Leicestershire County Council	Sand & Gravel	Extension - area	Granted	Aug-07	3.6Mt
4	North Kelsey Road Quarry	W18/0363/06	C&G Concrete Ltd	Lincolnshire County Council	Sand	Extension - area	Granted	Feb-07	268,880t
5	Norton Bottoms Quarry	N60/0948/06	C&G Concrete Ltd	Lincolnshire County Council	Sand & Gravel	Extension - area	Granted	Oct-07	4Mt
6	Norton Disney Quarry	N47/0449/06	CEMEX UK Operations Ltd	Lincolnshire County Council	Sand & Gravel	Extension - area	Granted	Feb-07	1.96Mt
7	Red Barn Quarry	S19/0519/05	Bullimores	Lincolnshire County Council	Sand & Gravel	Extension - area	Granted	Sep-07	1Mt
8	Tattershall Thorpe	(E)S176/1067/05	Woodhall Spa Sand & Gravel Ltd	Lincolnshire County Council	Sand & Gravel	Extension - area	Granted	Nov-07	400,000t
REMOVED not formally approved	Earls Barton Quarry	WP/06/1670	Hanson Quarry Products Europe Ltd	Northamptonshire County Council	Sand & Gravel	Extension - area	Granted	~~Jul-08~~	~~2.6Mt~~
REMOVED not yet determined	Attenborough sand & gravel pit - Trent farm (Long eaton)	-	CEMEX UK Materials Ltd	Nottinghamshire County Council	Sand & Gravel	Extension - area	Granted	~~Jul-07~~	~~1.9Mt~~
11	East Leake Quarry	8/07/02187/CMA	CEMEX Aggregates Eastern	Nottinghamshire County Council	Sand & Gravel	Extension - area	Granted	Sep-08	320t
12	Sturton Le Steeple	1/46/06/00014	Lafarge Aggregates Ltd	Nottinghamshire County Council	Sand & Gravel	New Quarry	Granted	Nov-07	7.5Mt
REMOVED building stone not aggregate	Dale View Quarry	NP/DDD/0606/0613	Stancliffe Stone Ltd	Peak District National Park	Gritstone	Extension - area	Granted	~~Sep-08~~	~~946,500t~~
14	Black Cat Island	BC/CM/2006/13	Lafarge Aggregates Ltd	Bedfordshire County Council	Sand & Gravel	New Quarry	Granted	Jan-08	1.06Mt
15	Broom Quarry and land to the east of Gypsey Lane	BC/CM/2005/6	Tarmac Ltd	Bedfordshire County Council	Sand & Gravel	Extension - area	Granted	Nov-06	1.4Mt

Project ID	Quarry Name	Application Number (if known)	Operator	MPA	Type of Aggregate	Permission Type	Decision	Date Granted / Refused	Volume
16	Medbury Farm	BC/CM/2005/12	CEMEX UK Materials Ltd	Bedfordshire County Council	Sand & Gravel	New Quarry	Refused	Jan-08	1.5Mt
17	Willington Quarry (Dairy Farm), Renhold	BC/CM/2005/10	Lafarge Aggregates Ltd	Bedfordshire County Council	Sand & Gravel	Extension - area	Granted	Dec-06	1.4Mt
18	Little Paxton Quarry	H/05007/03/CM	Hanson Aggregates	Cambridgeshire County Council	Sand & Gravel	Extension - area	Granted	Sep-07	2.7Mt
19	Must Farm	F/2010/05/CM	Hanson Building Products	Cambridgeshire County Council	Sand & Gravel / Clay	Extraction of sand & gravel	Granted	Jan-07	3.35Mt
20	Pentney	C/2/2007/2005	Middleton Aggregates	Norfolk County Council	Sand & Gravel	Extension - area	Granted	Mar-09	1.05Mt
21	Chilton Estate (1)	B/08/1182/CMA	Brett Aggregates Ltd	Suffolk County Council	Sand & Gravel	New Quarry	Refused	Mar-08	1Mt
22	Chilton Estate (2)	B/07/00177	Brett Aggregates Ltd	Suffolk County Council	Sand & Gravel	New Quarry	Refused	Dec-08	1Mt
23	Marston's Quarry	F/0141/09	Allen Newport Ltd	Suffolk County Council	Sand & Gravel	Extension - area	Granted	Oct-07	800,000t
24	Wetherden Quarry	MS/0141/09	S Walsh & Son Ltd	Suffolk County Council	Sand & Gravel	Variation - area	Granted	May-09	620,000t
25	Divethill Quarry	07/00160/CCMEIA	CEMEX UK Operations Ltd	Northumberland County Council	Whinstone - Igneous & Metamorphic	Extension - area	Granted	Sep-08	1.6Mt
26	High House Quarry	2/06/9017	DA Harrison	Cumbria County Council	Sand & Gravel	Extension - area	Granted	Aug-08	1.5Mt
27	Overby Quarry	2/06/9033	DA Harrison	Cumbria County Council	Sand & Gravel	Extension - area	Granted	Sep-08	4.5Mt
28	Roan Edge Quarry	05/05/9005	CEMEX	Cumbria County Council	Gritstone	Extension - area	Granted	Jun-07	10.7Mt
29	Tendley Quarry	02/03/9034	Tendly Quarries Ltd	Cumbria County Council	Limestone	Extension - area	Granted	Nov-08	9.3Mt
30	Thackwood Landfill	3/07/9008	H & E Trotter	Cumbria County Council	Clay	Extension - area	Granted	May-08	Not Specified
31	Bradleys Sand Pit	06/07/1197	JA Jackson Contractors (Preston) Ltd	Lancashire County Council	Sand & Gravel	Extension - area	Granted	Nov-08	760,000t
32	Runshaw	09/05/0319	Tarmac Central Ltd	Lancashire County Council	Sand	New Quarry	Refused	Nov-06	4.32Mt
33	Sandons Farm	09/05/0018	Rigshaw Ltd	Lancashire County Council	Sand & Gravel	New Quarry	Refused	Dec-06	522,000t
34	Denham Park Farm	SBD/8214/02	William Boyer & Sons Ltd	Buckinghamshire County Council	Sand / Sand & Gravel	New Quarry	Granted	Nov-06	1.2Mt sand & 500,000t Sand & Gravel

Project ID	Quarry Name	Application Number (if known)	Operator	MPA	Type of Aggregate	Permission Type	Decision	Date Granted / Refused	Volume
35	Springfield Farm	SBD/8203/06	Springfield Farms Ltd	Buckinghamshire County Council	Sand & Gravel	Extension - area	Granted	Jun-05	4Mt
36	Summerleaze (New Denham)	SBD/8201/06	Summerleaze Ltd	Buckinghamshire County Council	Sand & Gravel	New Quarry	Granted	Mar-07	2.4Mt
37	Busta Triangle	06/01130/CMA	Lafarge Aggregates	Hampshire County Council	Sand & Gravel	Extension - area	Refused	Nov-06	420,000t
REMOVED reopened inquiry - decision pending	Downton Manor Farm	82483	New Milton Sand & Ballast	Hampshire County Council	Sand & Gravel	New Quarry	To be determined (as at 31st July 2009)	~~Sep-07~~	~~810,000t~~
39	Frithend Quarry	F30633/012/CMA	S Grundon (Ewelme) Ltd	Hampshire County Council	Sand	Extension - area	Granted	Nov-06	1mt
40	Plumley Wood & Nea Farm Quarry's	08/91952	Tarmac	Hampshire County Council	Soft Sand, Sand & Gravel	Extension and revisions of existing permissions	Granted	Jun-09	S 335,000t, S&G 5,990Mt
41	Roke Manor	07/02771/CMAS	Raymond Brown Minerals & Recycling	Hampshire County Council	Sand & Gravel	New Quarry	Granted	Jun-09	780,000t
42	Bridge Farm	APF/SUT/18215CM	Hanson Aggregates	Oxfordshire County Council	Sand & Gravel	Extension - area	Granted	Jun-05	1Mt
43	Caversham Quarry	P05/E0130/CM	Lafarge Aggregates	Oxfordshire County Council	Sand & Gravel	Extension - area	Granted	Jun-05	370,000t
44	Shipton-on-Cherwell Quarry	06/02046/CM	Kilbride Properties Ltd	Oxfordshire County Council	Limestone	Extension - area	Granted	Jan-08	950, 000t
45	Stonehenge Farm	07/0111/P/CM	Hanson Aggregates	Oxfordshire County Council	Sand & Gravel	Extension - area	Refused	Nov-08	1.55Mt
46	Hithermoor Quarry	SP03/1212	Brett Aggregates Ltd	Surrey County Council	Sand & Gravel	Extension - area	Granted	Nov-08	248,000t
47	Reigate Road Quarry	2007/0526/PS	J & J Franks Ltd	Surrey County Council	Sand	Extension - area	Granted	Mar-08	770,000t
48	Runfold South Quarry	WA03/1492	Sita UK Ltd	Surrey County Council	Sand	Extension - area	Granted	Aug-07	387,000t
49	Land at Kingsham	HN/114/04	Dudman Aggregates Ltd	West Sussex County Council	Sand & Gravel	New Quarry	Granted	Nov-08	900,000t

Project ID	Quarry Name	Application Number (if known)	Operator	MPA	Type of Aggregate	Permission Type	Decision	Date Granted / Refused	Volume
50	Berkyn Manor	07/00590/FUL	Aggregate Industries & Jayflex Aggregates Ltd	Windsor & Maidenhead	Sand & Gravel	New Quarry	Granted	Sep-08	2Mt
REMOVED believed to be same as Berkyn manor	Colne Valley Way	DCS no 100-057-620	Aggregate Industries & Jayflex Aggregates Ltd	Windsor & Maidenhead	Sand & Gravel	New Quarry?	Granted	~~Sep-08~~	~~2Mt?~~
52	Poyle Manor	04/01716/FUL	CEMEX	Windsor & Maidenhead	Sand & Gravel	Extension - area	Granted	Jul-08	700,000t
53	Land off Avon Common	8/2001/0184	Tarmac Heavy Building Materials UK Ltd	Dorset County Council	Sand & Gravel	New Quarry	Granted	Nov-07	1.8Mt
54	Woodsford Farm	1/E/2005/0742	?	Dorset County Council	Sand & Gravel	New Quarry	Granted	Dec-07	3Mt
55	Latton, Wiltshire	N/06/07015	CWS Ltd	Wiltshire County Council	Sand & Gravel	New Quarry	Granted	Sep-07	550,000t
56	Low Lane	N/06 07/009	Hills Minerals and Waste	Wiltshire County Council	Sand	Extension - area	Granted	Jun-07	440,000t
57	Bayston Hill Quarry	MS2003/0529/SY	Tarmac Ltd	Shropshire County Council	Sandstone	Extension - area	Granted	Mar-07	47Mt
58	Ball Mill Quarry (1) (Church Farm South)	07/0001/29/CM	Tarmac Ltd	Worcestershire County Council	Sand & Gravel	Section 73 amendment	Refused	Dec-08	549,000t
59	Ball Mill Quarry (2) (Church Farm West)	05/01238/CDM	Tarmac Ltd	Worcestershire County Council	Sand & Gravel	Extension - area	Granted	Dec-06	1064,000t
60	Broadway Quarry	08/000029/CM	Smiths & Sons Bletchington Ltd	Worcestershire County Council	Limestone	Extension - depth	Granted	Sep-08	100,000t
61	Gransmoor Quarry	DC/07/04204/STPLFE/STRAT	W Clifford Watts Ltd	East Riding of Yorkshire Council	Sand & Gravel	Extension - area	Granted	Feb-08	395,000t
REMOVED no Environmental Statement submitted	Allerton Park	NY/2006/0390/FUL	Hanson Quarry Products Europe Ltd	North Yorkshire County Council	Sand & Gravel	Extension - area	Granted	~~Jun-07~~	~~150,000t~~
63	Allerton Park - Holly Bank Farm	NY/2008/0002/WENV	Hanson Quarry Products Europe Ltd	North Yorkshire County Council	Sand & Gravel	Extension - area	Granted	Oct-08	600,000t
64	Forcett Quarry	NY/2007/0024/ENV	Hanson Quarry Products Europe Ltd	North Yorkshire County Council	Limestone	Extension - area	Granted	Sep-07	1.5Mt

Project ID	Quarry Name	Application Number (if known)	Operator	MPA	Type of Aggregate	Permission Type	Decision	Date Granted / Refused	Volume
65	Ladybridge Farm	NY/2006/0264/FUL	Tarmac Northern Ltd	North Yorkshire County Council	Sand & Gravel	Extension - area	Granted	Sep-08	1.1Mt
66	Lavant Quarry	LV/313/07	Tarmac Limited	West Sussex County Council	Sand and Gravel	New Quarry	Refused	Mar-09	2.04Mt
REMOVED Aggregate as by-product only	Wrotham Quarry	TM/07/2545	Hanson Quarry Products Europe Ltd	Kent County Council	Sand	Extension - area	Granted	~~Oct-08~~	~~470,000t~~

Appendix 4 Proforma for environmental schedule analysis

RELEVANT SITES PROFORMA

Spreadsheet Info:

1. Is the relevant application within a National Park, AONB, SPA, SAC or a World Heritage Site?

in a National Park?	YES/NO
in a AONB?	YES/NO
in a SPA?	YES/NO
in a SAC?	YES/NO
In a World Heritage Site?	YES/NO

2. Were the specified 'Designations' mentioned in officers' report, Decision Notice, NTS and Inspectors report?

the officers' report?	YES/NO
reasons for refusal/approval?	YES/NO
NTS?	YES/NO
Inspector's/SOS report?	YES/NO

3. Of those sites within designated areas was specific emphasis placed on 'Designations' by Applicants in NTS, officers in the committee report and Inspector in the Decision Notice?

the Applicants in the NTS?	YES/NO
the officers in the committee report ?	YES/NO
the committee/Inspector in the Decision Notice?	YES/NO

4. From the NTS and committee report , did the proposals emphasise 'afteruse/restoration' driven?

5. From the ES/NTS Contents Page (and/or Scoping Opinion), what were the subjects for ES?

6. In the officers/Inspectors report, was mention made of MPS1?

7. In the NTS or officers report did being in a ‘Designation’ have any bearing on the key mitigation measures proposed?

---

8. In the officers’/Inspector’s report (for extensions to existing quarries) has any relationship to newly ‘Designated Areas’ been mentioned?

---

9. Either by officers, applicant, committee or Inspector was the cumulative effect of our ‘Designations’ considered? (where applicable i.e. more than 1 Designation).

---

10. In the NTS, committee report or Decision Notice, was there any mention of short versus long term objectives? For example, was reducing short term visual impact rated higher than long term restoration landform?

---

11. After reading the NTS, officers’, Inspector’s and Decision notice, could this quarry be considered as ‘exemplar’? During Operations? & for restoration afteruse?

A) During Operations:

B) For restoration after use:

---

12. Is this application site served by Road, Rail, Canal, Sea etc? See officers’ report and Transport section of NTS.

---

13. Did the committee decision (or Appeal) go with or against the officer recommendation? See officers’ report, Inspector’s report and Decision Notice.

---

14. If the result of Appeal, did the Inspector deal (if at all) with MPS1?

---

15. On reading the Conditions, did you feel that any were as a consequence of being in a specified ‘Designation’?

---

16. If this is a quarry extension approval how has this changed the previous restoration provisions?

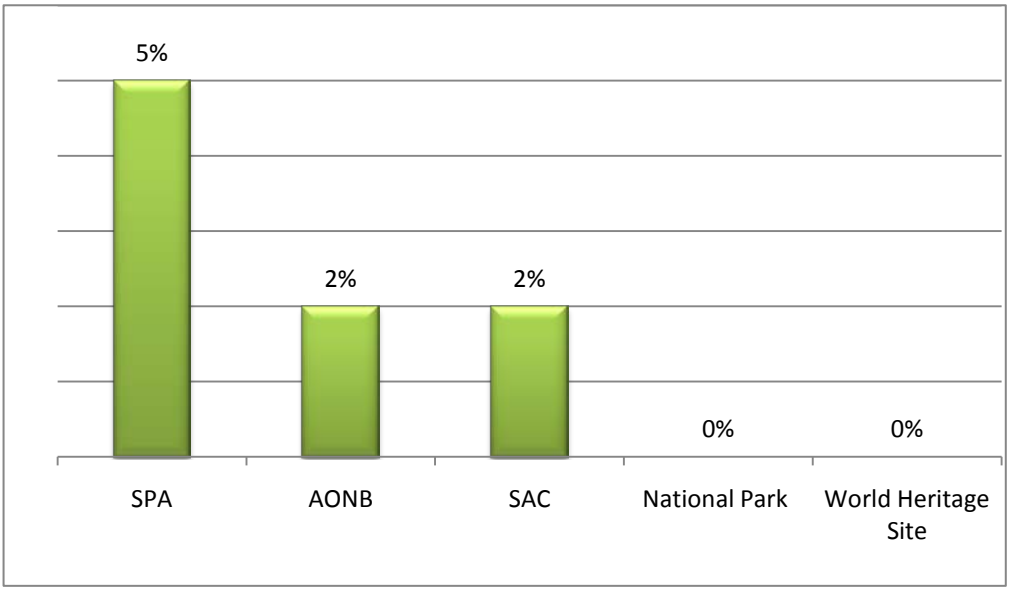
---

17. What were the restoration/afteruse objectives, e.g. Tourism? Amenity? Built? Or a long term acceptable landform?

Appendix 5 Technical Appendix: Environmental schedule analysis

Question 1: *Is the relevant application within a National Park, AONB, SPA, SAC or a World Heritage Site?*

Designation	Percentage of applications within designation	Number of applications within designation
SPA	5%	3
AONB	2%	1
SAC	2%	1
National Park	0%	0
World Heritage Site	0%	0

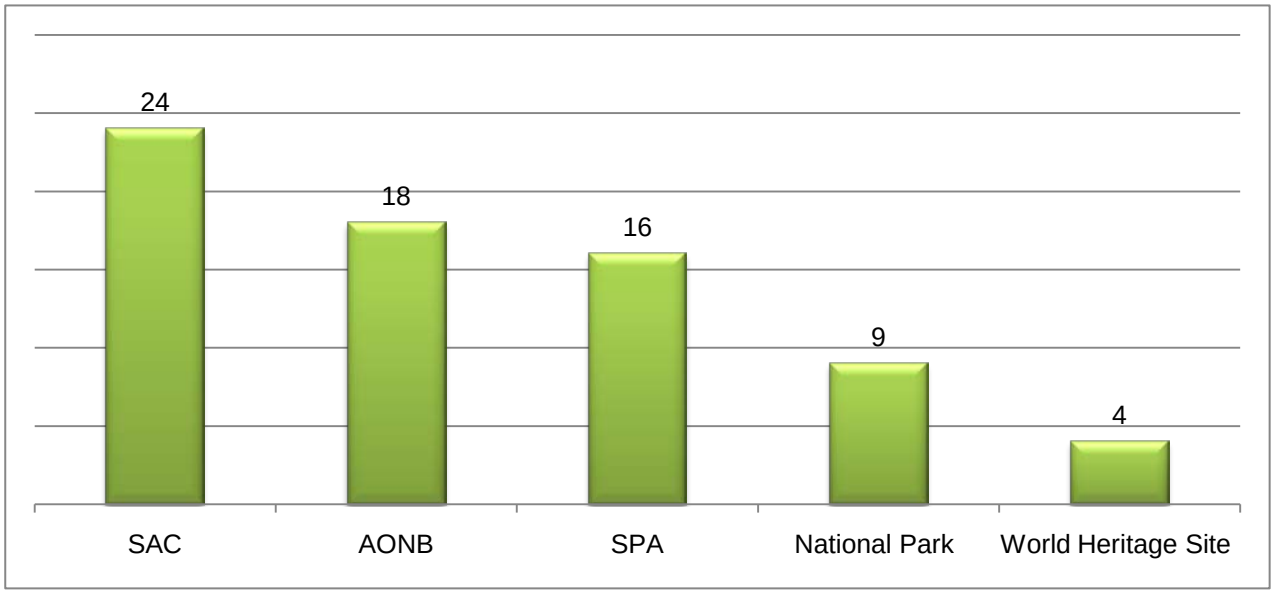


Those applications within a specified designation are:

ID	Quarry Name	AONB	SPA	SAC
23	Marstons Quarry			
37	Busta Triangle			
40	Plumley Wood and Nea Farm			
60	Broadway Quarry			

Relevant application sites within or nearby (5 kilometres) of a specified designation.

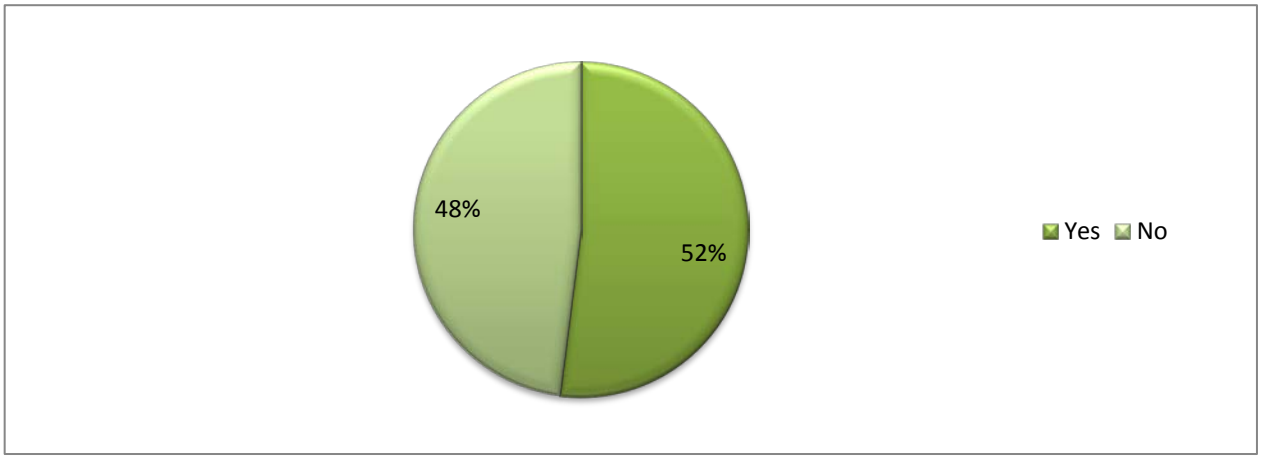
Designation	Percentage of applications within designation	Number of applications within designation
SPA	40%	24
AONB	30%	18
SAC	27%	16
National Park	15%	9
World Heritage Site	7%	4



Note: An application may be within 5km of more than one designation.

Number of applications which were within 5km of at least one designation:

Number of applications within 5km of a specified designation ("Yes" in graph below)	Number of applications **not** within 5km of a specified designation ("No" in graph below)
32 (52%)	28 (48%)



List of sites within or nearby (5 kilometres) of a specified designation

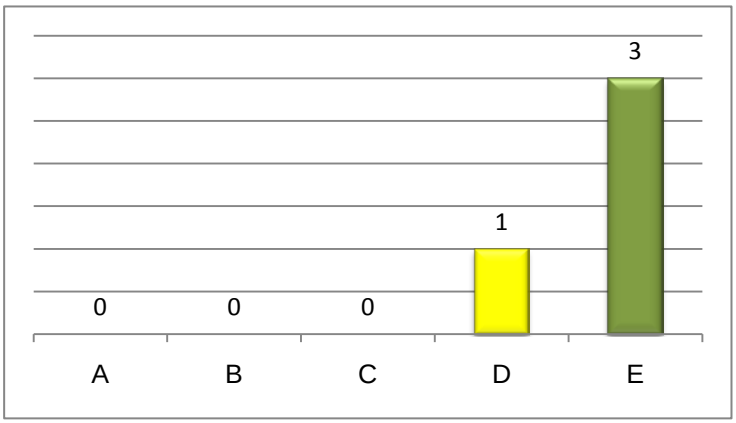
Project ID	Name	WHS	SPA	SAC	National Park	AONB
ID: 1	Brassington Moor Quarry, Longcliffe	E	F	D	C	G
ID: 4	North Kelsey Road Quarry	G	G	G	G	E
ID: 19	Must Farm	G	D	D	G	G
ID: 23	Marston's Quarry	G	A	D	G	G
ID: 26	High House Quarry	E	E	E	G	E
ID: 27	Overby Quarry	D	E	E	G	E
ID: 28	Roan Edge Quarry	G	G	E	E	G
ID: 29	Tendley Quarry	F	G	D	E	F
ID: 30	Thackwood Landfill	F	G	E	G	G
ID: 34	Denham Park Farm	G	G	F	G	E
ID: 35	Springfield Farm	G	G	E	G	E
ID: 37	Busta Triangle	G	A	G	G	G
ID: 39	Frithend Quarry	G	D	E	D	E
ID: 40	Plumley Wood & Nea Farm Quarry's	G	B	B	E	E
ID: 41	Roke Manor	G	E	E	E	G
ID: 42	Bridge Farm	G	G	E	G	E
ID: 43	Caversham Quarry	G	G	G	G	E
ID: 44	Shipton on Cherwell Quarry	E	G	F	G	E
ID: 45	Stonhenge Farm	G	G	E	G	G
ID: 46	Hithermoor Quarry	G	D	E	G	G
ID: 47	Reigate Road Quarry	G	G	D	G	D
ID: 48	Runfold South Quarry	G	E	E	F	D
ID: 49	Land at Kingsham	G	E	E	E	E
ID: 50	Berkyn Manor	G	D	E	G	G
ID: 52	Poyle Manor	G	D	E	G	G
ID: 53	Land off Avon Common	G	C	C	D	G
ID: 54	Woodsford Farm	F	E	E	G	E
ID: 55	Latton, Wiltshire	G	G	D	G	F
ID: 56	Low Lane	F	G	G	G	C
ID: 60	Broadway Quarry	G	G	G	G	A
ID: 65	Ladybridge Farm	G	G	G	G	E
ID: 66	Lavant Quarry	G	E	E	C	D

Key for distance categories

Category	Description	Usage of terminology
A	Application is wholly or mostly within the designated area.	"Within" a designated area for the purposes of this study.
B	Application is partly within the designated area.	"Within" a designated area for the purposes of this study.
C	Application borders the designation.	"Adjacent" to a designated area for the purposes of this study.
D	Application boundary is located within 1km of the designation boundary.	"Adjacent" to a designated area for the purposes of this study.
E	Application boundary is located more than 1km away, but less than 5km, away from designation boundary.	"Nearby" a designated area for the purposes of this study.
F	Application boundary is located 5km or more, but less than 10km, away from designation boundary.	"Outside" a designated area for the purposes of this study.
G	Application boundary is located more than 10km away from designation boundary.	"Outside" a designated area for the purposes of this study.

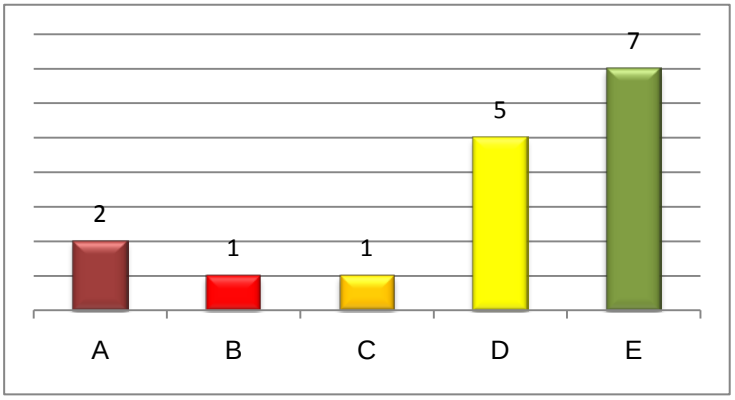
Number of applications within or nearby (5 kilometres) of a World Heritage Site

World Heritage Site	
A	0
B	0
C	0
D	1
E	3



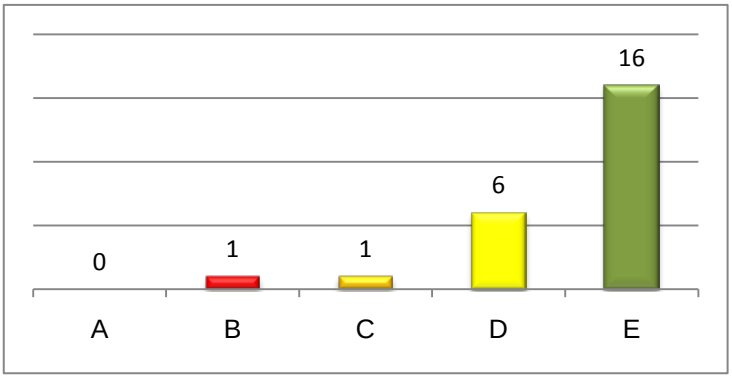
Number of applications within or nearby (5 kilometres) of a SPA

SPA	
A	2
B	1
C	1
D	5
E	7



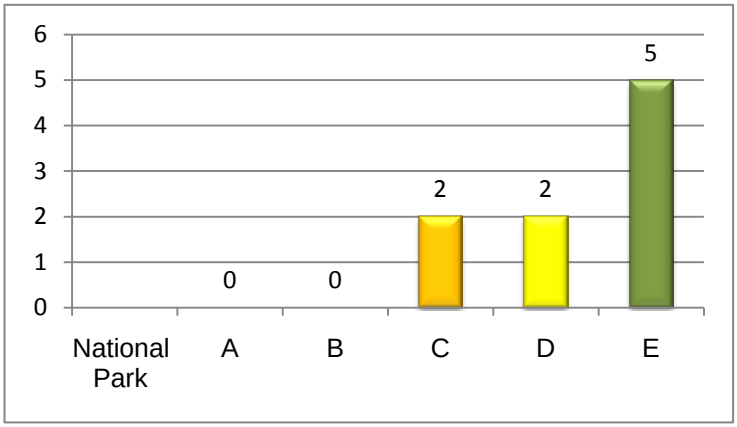
Number of applications within or nearby (5 kilometres) of a SAC

SAC	
A	0
B	1
C	1
D	6
E	16



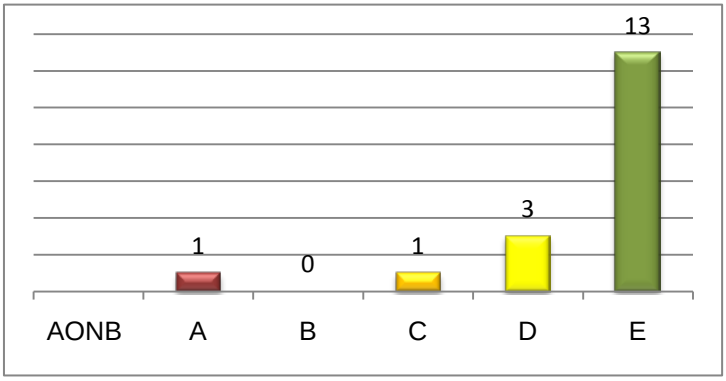
Number of applications within or nearby (5 kilometres) of a National park

National Park	
A	0
B	0
C	2
D	2
E	5



Number of applications within or nearby (5 kilometres) of an AONB

AONB	
A	1
B	0
C	1
D	3
E	13



Interpretation and analysis of question 1

Out of the 60 relevant applications, only four were within a specified designation; this small sample size restricts extrapolation and interpretation.

No relevant application was made within a National Park and only one in an AONB for the study period. Despite 73% of the relevant applications being extensions to extant quarries, not one was an extension to a quarry in a National Park.

Although only four relevant applications were within a specified designation, 32 (52%) were within five kilometres of one or more.

Interesting examples or anomalies in question 1

Only 1 site out of the 60 lies in two of the specified designations (Plumley Wood); these were an SAC and SPA.

Lavant represents an interesting case. It is located contiguous with the proposed National Park and lies within 1 kilometre of an AONB. It is within 5 kilometres of an SPA and SAC. It is technically a “new” quarry even though the plant site is proposed in the already restored area of the original quarry. The proposed South Downs National Park (now confirmed) was deemed to be a material consideration for the MPA.

Question 2: *Were the 'Designations' mentioned in officers' report, Decision Notice, NTS and Inspectors report?*

For the four relevant applications within designations, were the specified designations mentioned in any of the reports.		
Report	Number of applications which mentioned the designation	Percentage
NTS	4	100%
Officers' report	4	100%
Decision Notice	4	100%

Interpretation and analysis of question 2

This question applies only to the 4 relevant applications within the specified designations. Not surprisingly, in all 4 of the cases the designations were mentioned in the NTS and in the officers' report/Decision Notice.

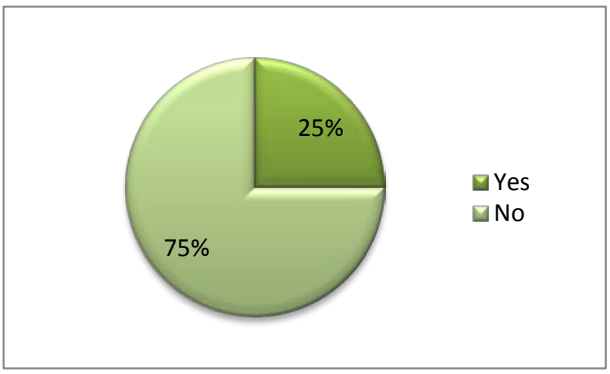
Interesting examples or anomalies in question 2

Plumley Wood was an application in two specified designations; it was mentioned in the NTS, officers' report and the Decision Notice. Particular reference was made in all 3 documents to the proposal not affecting the SAC and SPA.

Question 3: *Of those sites within designated areas was specific emphasis placed on 'Designations' by Applicants in NTS, officers in the committee report and Inspector in the Decision Notice?*

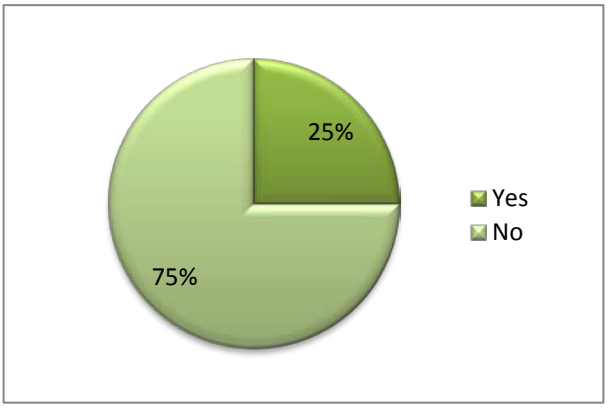
Non-Technical Summary (NTS)

Applications in the NTS	Yes	No
% of applications	25%	75%
Number of applications	1	3



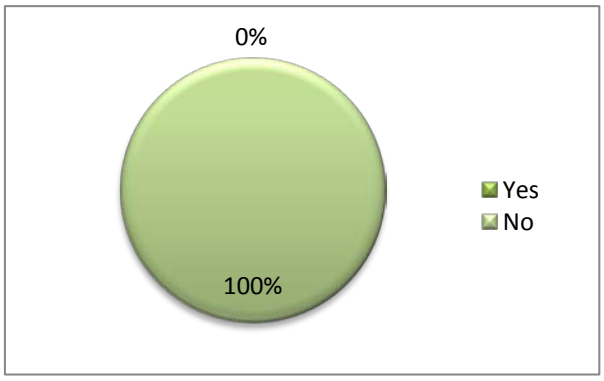
Committee report

Officers in the committee report	Yes	No
% of applications	25%	75%
Number of applications	1	3



Decision Notice

Officers in the committee report	Yes	No
% of applications	25%	75%
Number of applications	1	3



ID	Name	Applicants in the NTS	Officers in the committee report	Committee/Inspector in the Decision Notice
23	Marston's Quarry	N	N	N
37	Busta Triangle	Y	Y	N
40	Plumley Wood & Nea Farm Quarry's	N	N	N
60	Broadway Quarry	N	N	N

Interpretation and analysis of question 3

Only in one of the four cases within specified designations was specific emphasis made in either the NTS or committee report. This is, perhaps, a surprising figure given the international and national status of the designations.

Interesting examples or anomalies in question 3

Only one site within a specified designation actively deals with the implications and takes this into consideration in the restoration proposals. In the case of Brassington Moor, the nearby World Heritage Site is mentioned but this has no effect on the operating or restoration schemes.

Busta Triangle

"*The working and restoration proposals for the Busta Triangle fully considered the:*

ii) SSSI and SPA status of the site" (NTS report).

Restoration Proposals:

"The restoration proposals for the Busta Triangle scheme seek to enhance nature conservation interests, balancing both local aspirations and constraints, with particular reference to the Special Protection Area (SPA) status of the site and its environs" (NTS report).

Ecology:

"*The site is currently a conifer plantation and is located within a SPA. The independent ecological assessment concludes that the proposed operational phases will have no significant adverse effect on the SPA, while the restoration proposals could benefit local wildlife in the medium to long term both of which should maintain the integrity of the SPA"*

"The environmental impact assessment undertaken by Lafarge in respect of the SPA has concluded that the integrity of the European site will not be adversely affected" (NTS report).

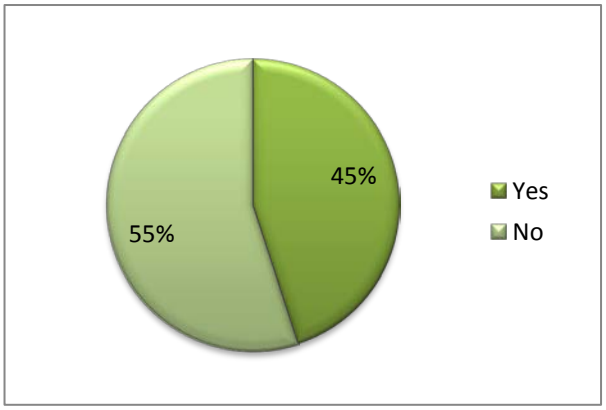
Brassington Moor

"The influence of the industrial revolution on Derbyshire is well recognized, to such an extent that the Mills of Cromford and Belper now have a World Heritage Site designation" (NTS report).

Question 4: *From the NTS and committee report , were the proposals 'after use/restoration' driven?*

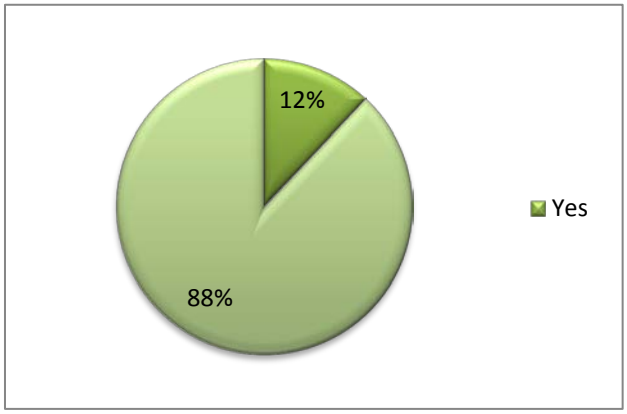
Non-Technical Summary (NTS)

Applications in the NTS	Yes	No
% of applications	45%	55%
Number of applications	27	33



Committee report

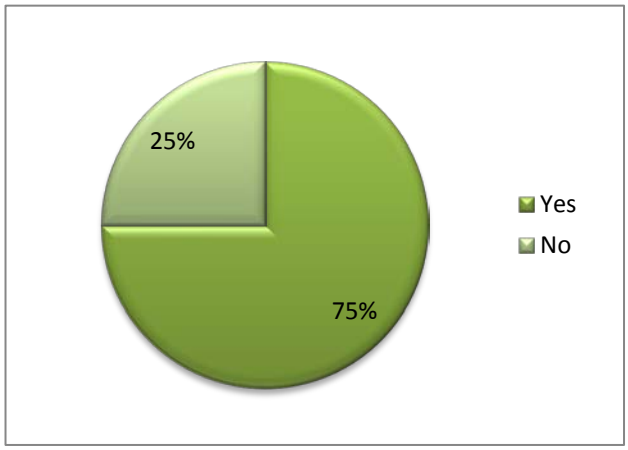
Officers in the committee report	Yes	No
% of applications	12%	82%
Number of applications	7	53



For the four relevant applications within specified designations was the restoration/afteruse driven?

Yes	No
75%	25%
3	1

ID	Name	Yes	No
23	Marston's Quarry	Yes	
37	Busta Triangle	Yes	
40	Plumley Wood & Nea Farm Quarry's		No
60	Broadway Quarry	Yes	



Interpretation and analysis of question 4

The broad picture appears to be that the afteruse and restoration landform are much more heavily promoted by the applicant in their NTS (in 45% of cases) than in the officers/committee reports (in 12% of cases). Within a specified designation restoration/afteruse was mentioned specifically in 75% of the cases.

Question 5: *From the ES/NTS Contents Page (and/or Scoping Opinion), what were the subjects from the ES.*

Environmental Statement Subjects	Percentage	Number of applications
Landscape and visual impact assessment	100%	60
Hydrogeology & hydrology	98%	59
Ecology / flora and fauna	95%	57
Noise	95%	57
Dust/air quality	95%	57
Highways and transport	83%	50
Soils and agriculture	73%	44
Archaeology	72%	43
Cultural heritage	35%	21
Geology	22%	13
Rights of way	20%	12
Material assets	8%	5
Planning policy and need	8%	5
Human beings	7%	4
Restoration and afteruse	7%	4
Socio-economic	7%	4
Vibration/subsidence	5%	3
Flood risk	5%	3
Blasting	3%	2
Airfield/safeguarding	3%	2
Alternative	2%	1
Contaminated land & geotechnical issues	2%	1
Infrastructure services	2%	1
Rail infrastructure	2%	1
Birdstrike	2%	1

NB. Applications might quote more than one subject.

0-19%	20-39%	40-59%	60-79%	80-100%

	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
BIRDSTRIKE	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOCIO-ECONOMIC	0	33	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0
BLASTING	0	0	0	20	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESTORATION AND AFTERUSE	0	33	0	20	100	0	0	0	33	0	20	0	33	0	0	0	0	0	0	0	0	0
FLOOD RISK	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
RAIL INFRASTRUCTURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0
INTRASTRUCTURE SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0
CONTAMINATED LAND & GEOTECHNICAL ISSUES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0
GEOLOGY	25	67	50	40	50	0	0	0	0	0	40	0	0	0	50	25	0	0	33	50	0	0
HUMAN BEINGS	0	0	50	0	0	0	100	0	33	0	20	0	0	0	0	0	0	0	0	0	0	50
ALTERNATIVE	0	0	0	0	0	0	0	50	0	0	0	0	33	0	0	0	0	0	0	0	0	0
VIBRATION/ SUBSIDENCE	0	0	0	0	0	0	0	25	0	0	0	0	33	0	0	25	0	0	33	0	0	0
AIRFIELD/ SAFEGUARDING	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	25	0	0	0	0	0	0
PLANNING POLICY AND NEED	50	0	0	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	50	0	0
CULTURAL HERITAGE	50	33	100	20	0	50	0	75	0	0	40	0	0	0	50	25	0	25	33	50	50	100
RIGHTS OF WAY	75	0	0	0	0	50	0	50	0	0	40	0	67	0	0	25	0	0	67	0	50	0
MATERIAL ASSETS	0	0	0	20	0	0	0	0	0	0	40	0	67	0	0	0	0	0	0	0	0	0
ARCHAEOLOGY	50	67	50	100	100	50	0	75	100	100	40	100	100	100	50	100	100	75	67	50	50	0
HYDROGEOLOGY & HYDROLOGY	100	100	100	60	50	100	100	100	100	100	100	100	67	100	50	100	100	100	100	100	100	100
HIGHWAYS AND TRANSPORT	100	100	100	80	50	100	100	100	100	100	80	100	67	100	50	50	100	100	100	100	50	100
DUST/AIR QUALITY	100	100	100	80	100	100	100	75	100	100	100	100	67	100	100	100	100	100	100	100	100	100
NOISE	100	100	100	80	100	100	100	100	100	100	80	100	100	100	100	100	100	100	100	100	100	50
SOILS AND AGRICULTURE	75	100	100	20	50	50	0	75	33	100	80	100	100	0	100	75	100	100	67	100	100	50
ECOLOGY/ FLORA AND FAUNA	100	100	100	60	100	100	100	100	100	100	80	100	100	100	100	100	100	100	100	100	100	100
LANDSCAPE & VISUAL IMPACT ASSESSMENT	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
MPA	Bedfordshire County Council	Buckinghamshire County Council	Cambridgeshire County Council	Cumbria County Council	Derbyshire County Council	Dorset County Council	East Riding of Yorkshire Council	Hampshire County Council	Lancashire County Council	Leicestershire County Council	Lincolnshire County Council	Norfolk County Council	North Yorkshire County Council	Northumberland County Council	Nottinghamshire County Council	Oxfordshire County Council	Shropshire County Council	Suffolk County Council	Surrey County Council	West Sussex County Council	Wiltshire County Council	Windsor & Maidenhead

The Table above shows what percentage of ES's contained a specific subject (for each local authority). For example, 75% of the ES's in Bedfordshire had Rights of Way as a subject. In Buckinghamshire, 0% had this subject.

Interpretation and analysis of question 5

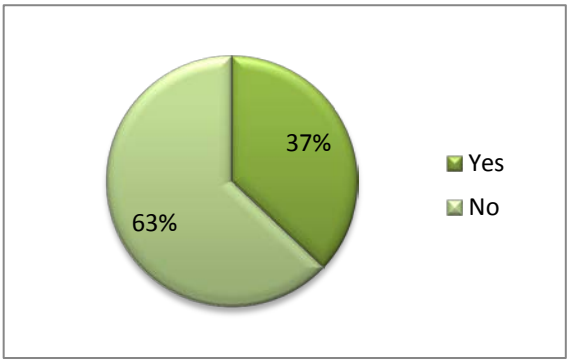
The analysis shows a variation in the profile of subject matters contained in the ES dependent on whether the relevant application is inside or outside the specified designations. Whereas only Landscape and Visual are the only subject matters incorporated in every ES outside the designations, within the designations three other subjects are also always included, namely noise, dust/air quality and highways/transport. Ecology, archaeology, soils and agriculture, geology and rail infrastructure (among others) are all more frequently included in an ES within a designation.

Allowing for the relatively small sample size when reduced to individual mineral planning authority, there is a strong consistency in the subject matters included in any EIA. Given the idiosyncrasies of each of the 60 relevant applications sites, which may tend to encourage variation, this overall consistency is reinforced.

Question 6: *In the officers/Inspectors report, was mention made of MPS1?*

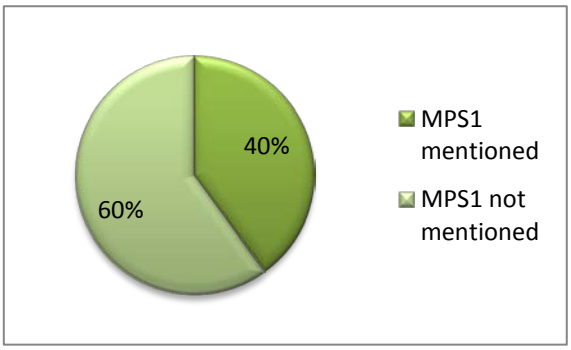
Officers' report

Applications in the officers' report mentioning MPS1	Yes	No
% of applications	37%	63%
Number of applications	22	38



Inspectors report (Appeal sites only)

Applications in the Inspectors report mentioning MPS1	Yes	No
% of applications	40%	60%
Number of applications	2	3



Appeal sites:

ID	Quarry Name	MPS1 Mentioned in officers report
32	Runshaw	No
33	Sandons Farm	Yes
37	Busta Triangle	No
48	Runfold South Quarry	Yes
50	Berkyn Manor (Land East of Horton Road)	No

Interpretation and analysis of question 6

Despite being in force during the study period MPS 1 was not mentioned in 63% of the officers' reports. Where mentioned, MPS 1 is simply listed as relevant or quoted verbatim.

Of the five sites that went to Appeal, MPS 1 was mentioned in 2 cases. Where MPS1, was mentioned, the relevance tends to focus on the 'need' for minerals rather than other issues addressed in MPS1.

List of Relevant Applications which mentioned MPS1

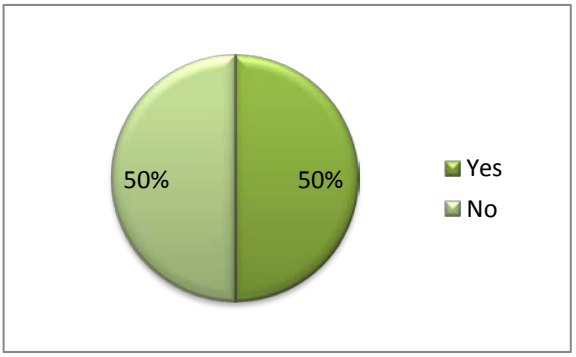
FINAL_ID	Quarry Name	Officers Report	Inspectors Report
1	Brassington Moor Quarry, Longcliffe	Y	N
2	Thrumpton's land	N	N
3	Shawell Quarry	Y	N
4	North Kelsey Road Quarry	N	N
5	Norton Bottoms Quarry	Y	N
6	Norton Disney Quarry	N	N
7	Red Barn Quarry	N	N
8	Tattershall Thorpe	N	N
11	East Leake Quarry	N	N
12	Sturton Le Steeple	N	N
14	Black Cat Island	N	N
15	Broom Quarry and land to the east of Gypsey Lane	N	N
16	Medbury Farm	Y	N
17	Willington Quarry (Dairy Farm), Renhold	N	N
18	Little Paxton Quarry	N	N
19	Must Farm	Y	N
20	Pentney	N	N
21	Chilton Estate (March 08)	N	Y
22	Chilton Estate	N	N
23	Marston's Quarry	N	N
24	Wetherden Quarry	Y	N
25	Divethill Quarry	N	Y
26	High House Quarry	Y	N
27	Overby Quarry	Y	N
28	Roan Edge Quarry	Y	N
29	Tendley Quarry	N	N
30	Thackwood Landfill	N	N
31	Bradleys Sand Pit	Y	N
32	Runshaw	N	Y
33	Sandons Farm	Y	N
34	Denham Park Farm	N	N
35	Springfield Farm	N	N
36	Summerleaze (New Denham)	N	N
37	Busta Triangle	N	N
39	Frithend Quarry	N	N
40	Plumley Wood & Nea Farm Quarry's	Y	N
41	Roke Manor	N	N
42	Bridge Farm	N	N
43	Caversham Quarry	N	N
44	Shipton Cherwell Quarry	N	N
45	Stonhenge Farm	N	N
46	Hithermoor Quarry	N	N
47	Reigate Road Quarry	Y	N
48	Runfold South Quarry	Y	N
49	Land at Kingsham	Y	N
50	Berkyn Manor (Land East of Horton Road)	N	N
52	Poyle Manor	N	N
53	Land off Avon Common	N	N
54	Woodsford Farm	N	N
55	Latton, Wiltshire	N	N
56	Low Lane	Y	N
57	Bayston Hill Quarry	Y	N
58	Ball Mill Quarry (Church Farm South)	N	N
59	Ball Mill Quarry (Church Farm West)	N	N
60	Broadway Quarry	Y	N
61	Gransmoor Quarry	Y	N
63	Allerton Park - Holly Bank Farm	N	N
64	Forcett Quarry	Y	N
65	Ladybridge Farm	Y	N
66	Lavant	Y	N

Question 7: *In the NTS or officers' report, did being in a 'Designation' have any bearing on the key mitigation measures proposed.*

Relevant applications within specified designations

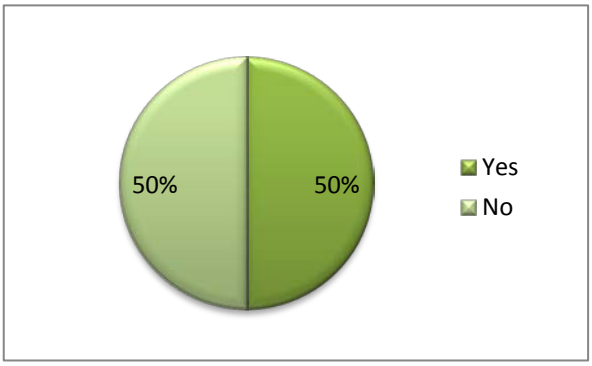
NTS

Applications in the NTS	Yes	No
% of applications	50%	50%
Number of applications	2	3



Officers' report

Applications in the officers report	Yes	No
% of applications	50%	50%
Number of applications	2	3



Project ID	Name	NTS	OFFICER'S REPORT
23	Marston's Quarry	Y	Y
37	Busta Triangle	N	N
40	Plumley Wood & Nea Farm Quarry's	Y	N
60	Broadway Quarry	N	Y

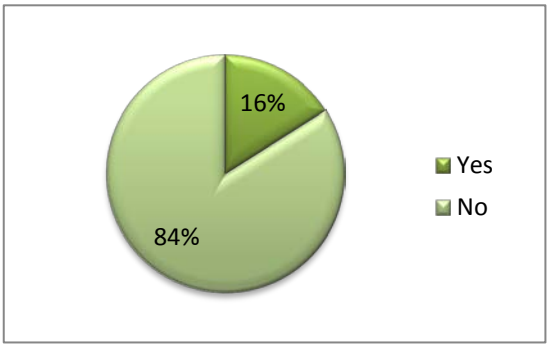
NB –The data here refers to mitigation measures. The references cited in question 15 refer to the restoration conditions.

Sites near to specified designations (within 5 kilometres)

Relevant applications within specified designations

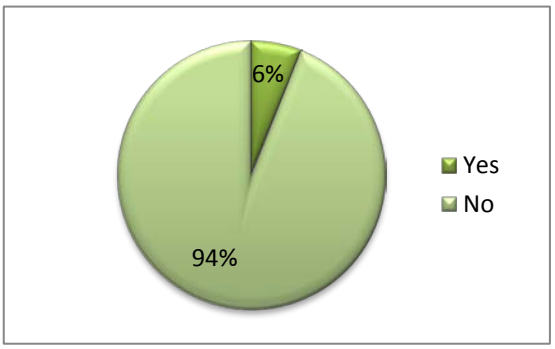
NTS

Applications in the NTS	Yes	No
% of applications	16%	84%
Number of applications	5	27



Officers' report

Applications in the officer's report	Yes	No
% of applications	6%	94%
Number of applications	2	30



Interpretation and analysis of question 7

In 50% of the relevant applications in specified designations were key mitigation measures suggested by the applicant as a consequence of being in a designation.

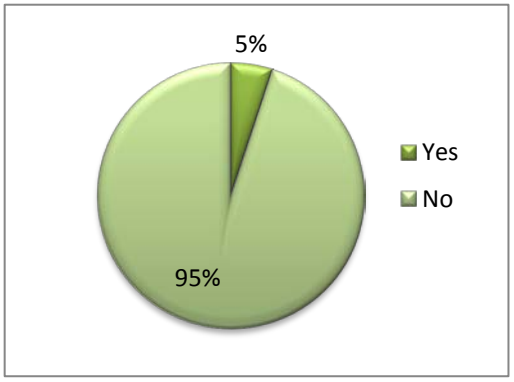
Out of 32 relevant applications near (i.e. within or nearby 5 kilometers) to the specified designations only in four cases were the key mitigation measures imposed as a consequence of the nearby designation.

For the four cases out of the 32 applications, it was relevance to a biological designation (SPA/SAC) rather than a landscape/cultural designation (National Park, AONB, World Heritage Site) which was important.

Question 8: *In the officers/Inspector's report (for extensions to existing quarries) has any relationship to newly 'Designated Areas' been mentioned?*

Officers' report

For the 44 quarry extensions have new designations been mentioned?	Yes	No
% of applications	5%	95%
Number of applications	2	42

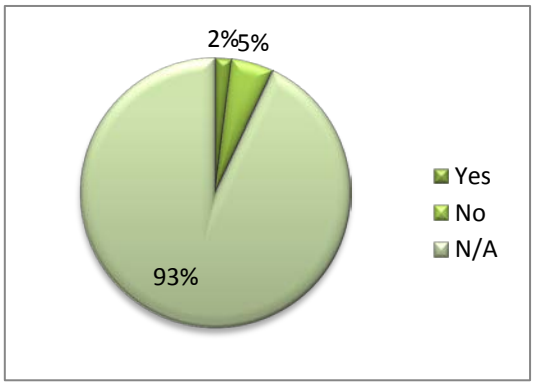


Interpretation and analysis of question 8

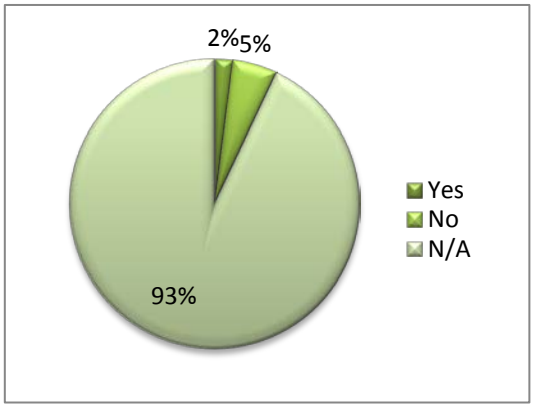
44 of the relevant applications are extensions to existing quarries. In two cases were new designations (which had come in to force after the original permissions) mentioned. This does not tell us how many quarries are now subject to new designations; however it is likely that it would have been mentioned in officers' reports.

Question 9: Either by officers, applicant, committee or Inspector was the cumulative effect of our 'Designations' considered? (Where applicable i.e. more than 1 Designation)

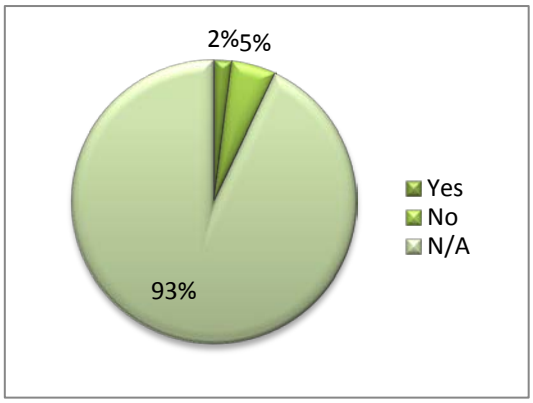
Officers' report	Yes	No	N/A
% of applications	2%	5%	93%
Number of applications	1	3	56



Applicant	Yes	No	N/A
% of applications	2%	5%	93%
Number of applications	1	3	56



Inspector	Yes	No	N/A
% of applications	2%	5%	93%
Number of applications	1	3	56



Interpretation and analysis of question 9

Of the four relevant applications in specified designations only one site has more than one designation; any cumulative impacts could only apply in this case; the NTS and officers' report dealt with the cumulative impact.

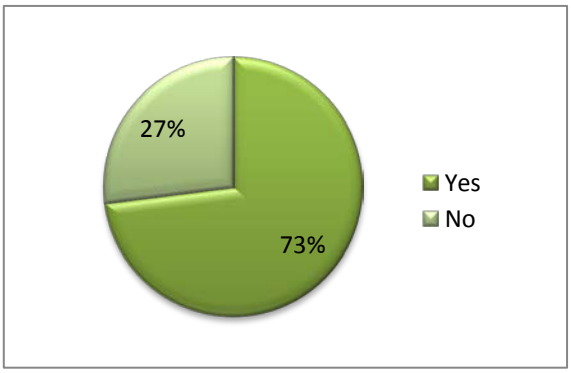
Interesting examples or anomalies in question 9

Only one site of the 60 sites lies in two of the specified designations (Plumley Wood); these were an SAC and SPA.

Question 10: *In the NTS, committee report, Decision Notice, was there any mention of short versus long term objectives? For example, was reducing short term visual impact rated higher than long term restoration landform?*

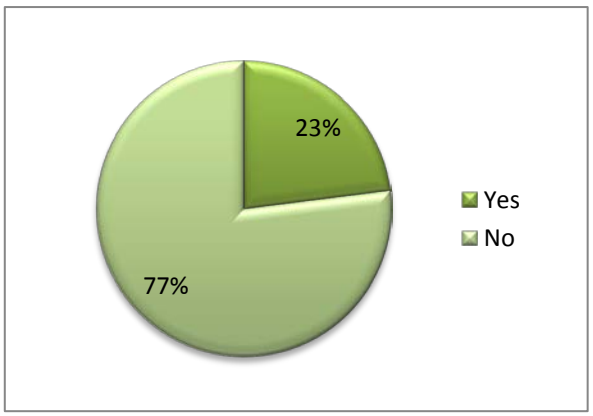
NTS

NTS	Yes	No
% of applications	73%	27%
Number of applications	44	16



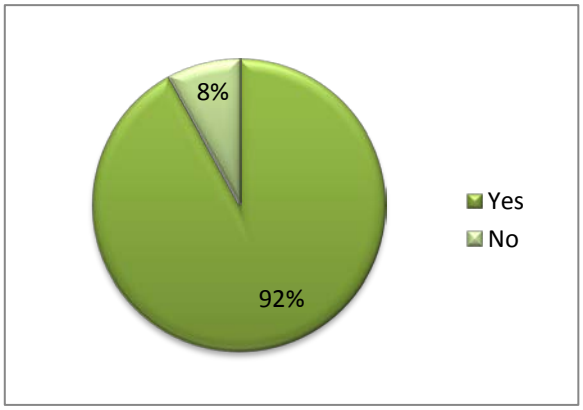
Committee report

Committee report	Yes	No
% of applications	23%	77%
Number of applications	14	46



Decision Notice

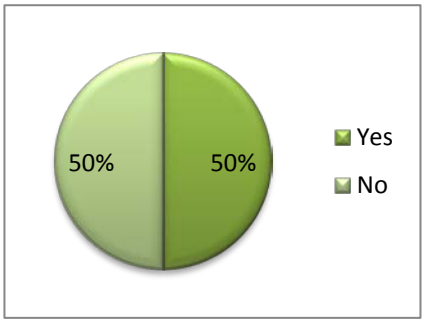
Decision notice	Yes	No
% of applications	92%	8%
Number of applications	55	5



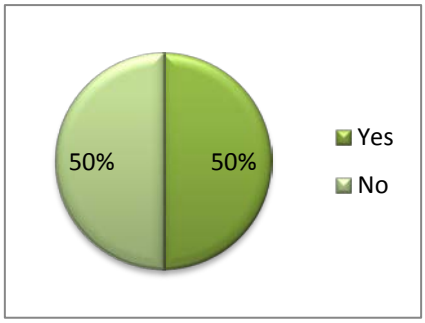
Relevant applications within specified designations which mentioned short versus long term objectives.

Report	Yes		No	
NTS	50%	2	50%	2
Committee report	50%	2	50%	2
Decision Notice	50%	2	50%	2

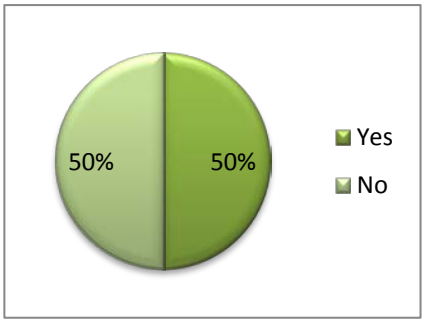
NTS



Committee report



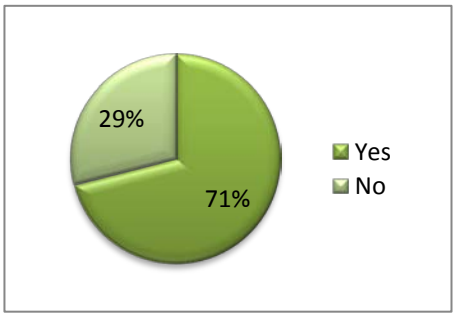
Decision Notice



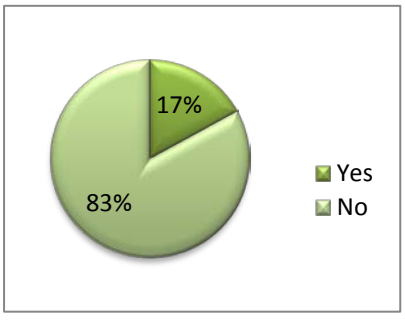
Relevant applications outside specified designations which mentioned short versus long term objectives.

Report	Yes		No	
NTS	71%	40	29%	16
Committee report	17%	9	83%	47
Decision Notice	2%	1	98%	55

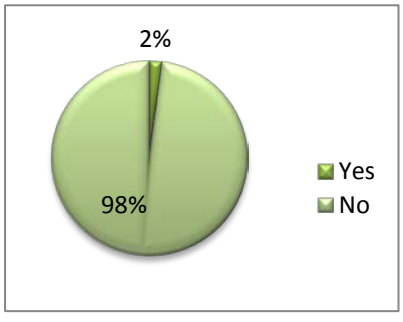
NTS



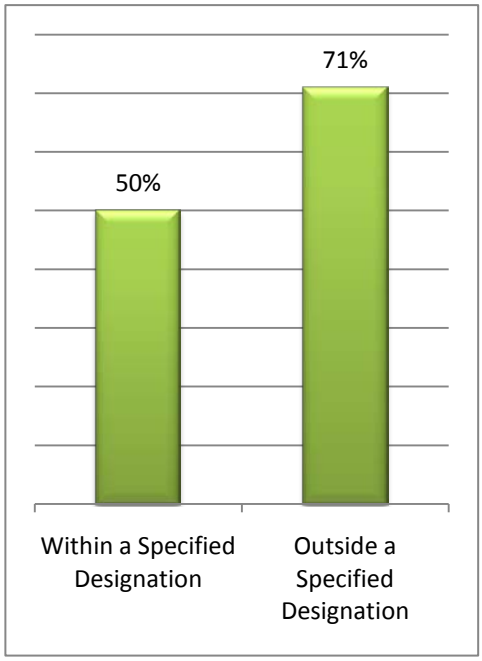
Committee report



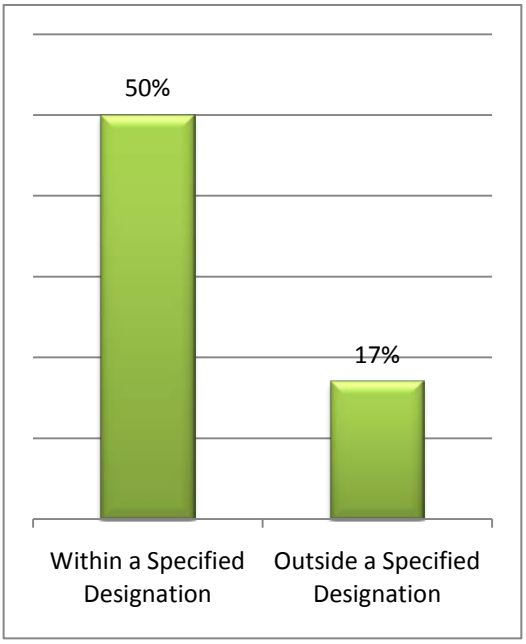
Decision Notice



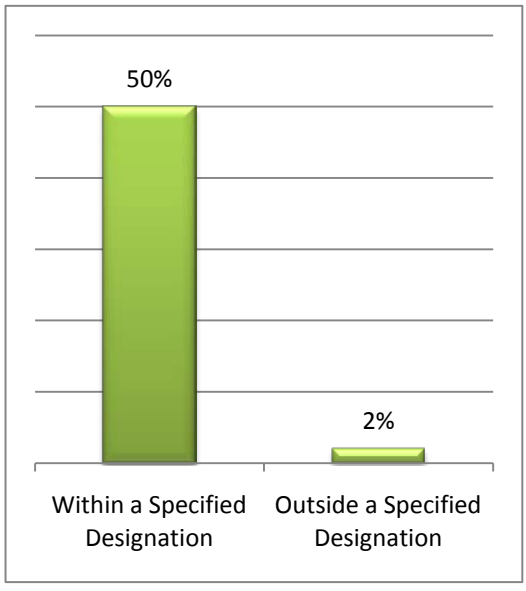
NTS		
Within a Specified Designation	50%	2
Outside a Specified Designation	71%	40



Committee report		
Within a Specified Designation	50%	2
Outside a Specified Designation	17%	9



Decision Notice		
Within a Specified Designation	50%	2
Outside a Specified Designation	2%	1



Interpretation and analysis of question 10

The balance between short term impacts and long term restoration/landform is at the heart of quarry planning and design. Although a partially subjective decision, the subject was addressed in 73% of the NTS, 23% of the Committee report s and 92% of the decision notices (particularly in the choice of planning conditions).

The issue of the balance or conflict between short term impact mitigation versus long term restoration/landforms is given different weight by applicants, officers and committees. However, this weighting changes substantially depending on whether the application lies within or outside a specified designation.

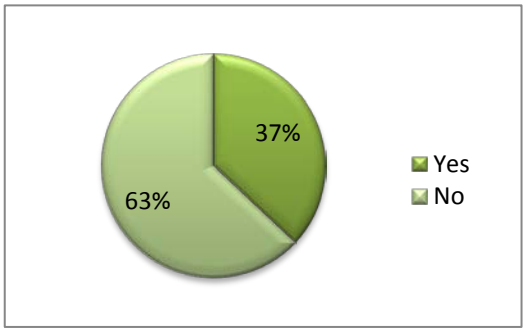
For sites outside of a specified designation, this issue is addressed in 71% of the NTS, (reflecting the views of the applicant), in 17% of the committee reports (reflecting the views of the officers) and in 2% of the Decision Notices (in part reflecting the combined view of the MPA, especially the Elected Members).

For sites inside of a specified designation, this issue is addressed in 50% of the NTS, 8% of the committee report s and 38% of the Decision Notices.

Question 11: *After reading the NTS, officers, Inspector's and Decision Notice, could this quarry be considered as 'exemplar'? During Operations? & For Restoration After use?*

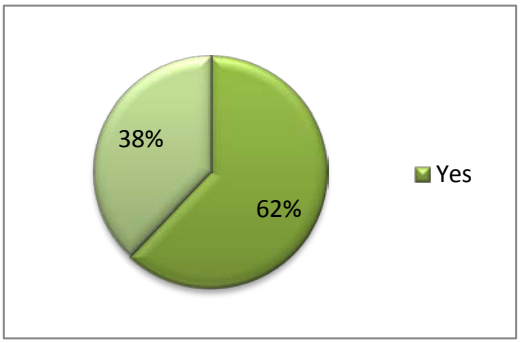
During Operations

	Yes	No
% of applications	37%	63%
Number of applications	22	38



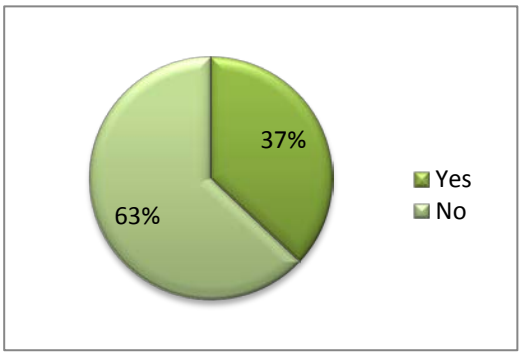
For Restoration/ After Use

	Yes	No
% of applications	62%	38%
Number of applications	37	23



Both During Operations and Afteruse

Decision notice	Yes	No
% of applications	28%	72%
Number of applications	17	43



Interpretation and analysis of question 11

This question is based on a professional subjective opinion. It does provide an indication of 17 potential exemplar quarries which achieve high standards of planning and design reducing or removing impact during operations and delivering an appropriate restoration landform and afteruse. These 17 quarries could be examined in greater depth by a wider group to produce a shortlist from which transferable techniques and answers might be obtained.

Five of the 17 potential exemplar quarries were considered successful both during operations and in the restoration/landuse; two were within a specified designation.

List of exemplar quarries

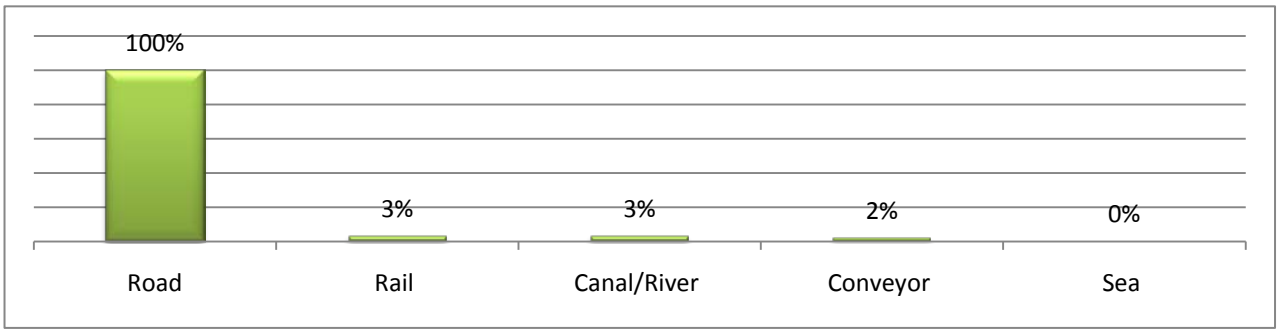
Application	MPA	Within specified designation	During Operations	Restoration Afteruse
Black Cat Island	Bedfordshire CC	No – Category G	Yes	Yes
Broom Quarry	Bedfordshire CC	No – Category F	Yes	Yes
Little Paxton Quarry	Cambridgeshire CC	No – Category F	Yes	Yes
Pentney	Norfolk CC	No – Category F	Yes	Yes
Norton Disney	Lincolnshire CC	No – Category G	Yes	Yes
Sturton Le Steeple	Nottinghamshire CC	No – Category G	Yes	Possibly
Marston's Quarry	Suffolk CC	Yes – Category A (SPA)	Yes	Possibly
Divethill Quarry	Northumberland CC	No – Category F	Possibly	Possibly
Shipton-on-Cherwell Quarry	Oxfordshire CC	No – Category E	Yes	Possibly
Caversham Quarry	Oxfordshire CC	No – Category E	Possibly	Possibly
Roke Manor	Hampshire CC	No – Category E	Yes	Possibly
Plumley Wood and Nea Farm	Hampshire CC	Yes – Category B (SPA/SAC)	Yes	Possibly
Springfield Farm	Buckinghamshire CC	No – Category E	Possibly	Possibly
Land off Avon Common	Dorset CC	No – Category C	Yes	Yes
Ladybridge Farm	North Yorkshire CC	No – Category E	Yes	Possibly
Forcett Quarry	North Yorkshire CC	No – Category F	Possibly	Yes
Allerton Park-Holy Bank Farm	North Yorkshire CC	No – Category G	Possibly	Yes

Question 12: *Is this application site served by Road, Rail, Canal, Sea etc? See officers' report and Transport section of NTS*

All sites

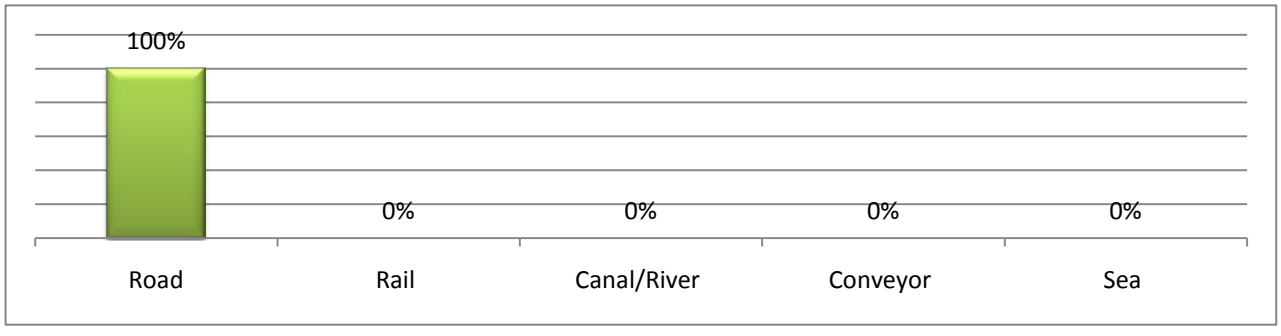
Transport method	% of Applications	Number of Applications
Road	100%	60
Rail	3%	2
Canal/River	3%	2
Conveyor	2%	1
Sea	0%	0

Note: Some sites are served by more than one transport type



Sites within a specified designation

Transport method	% of Applications	Number of Applications
Road	100%	4
Rail	0%	0
Canal/River	0%	0
Conveyor	0%	0
Sea	0%	0



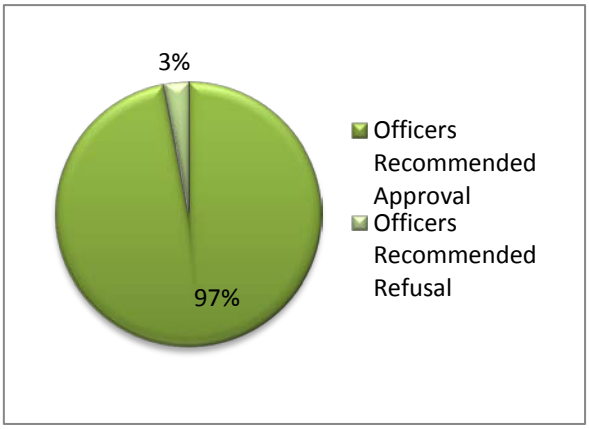
Interpretation and analysis of question 12

All 60 quarries were served by road. Only four quarries exported the material from the site by rail or water. The analysis of the sites inside the specified designations shows that all four were served by road with one served additionally by rail. Apart from the dominance of road transport, no further conclusions can be drawn.

Question 13: *Did the committee decision (or Appeal) go with or against the officer recommendation? See officers' report, Inspectors report and Decision Notice*

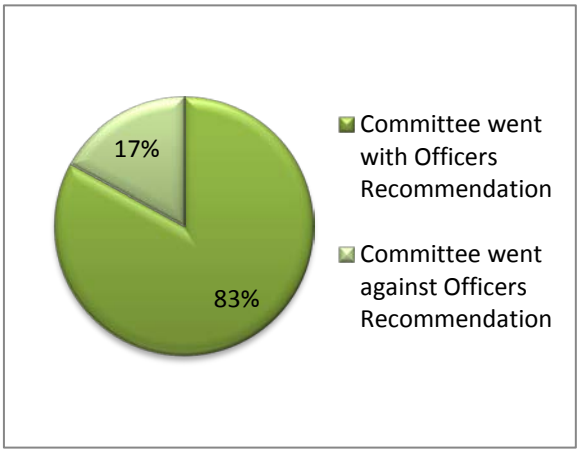
Officers

Recommended Approval	97%	58
Recommended Refusal	3	2



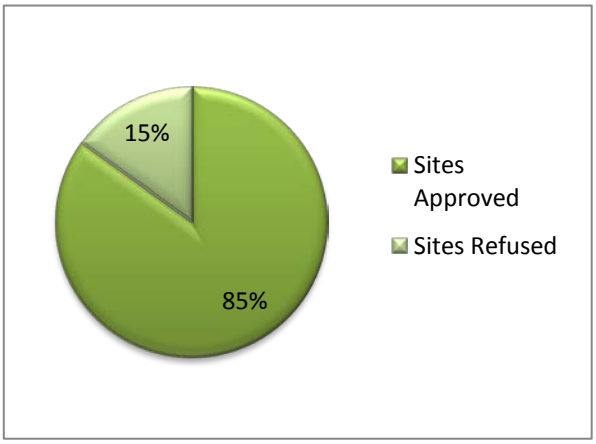
Committee went with officers recommendation

Yes	83%	49
No	17%	11



Outcome (as at 1st July 2009)

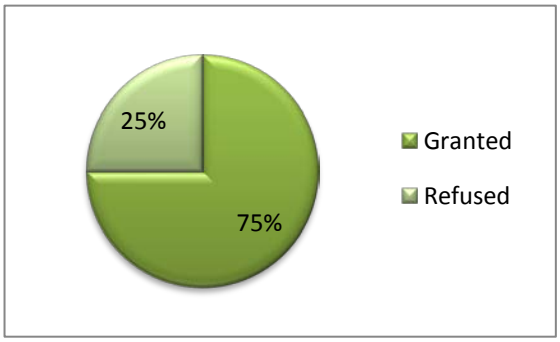
Sites Approved	85%	51
Sites Refused	15%	9



Relevant applications within a specified designation which were either granted or refused

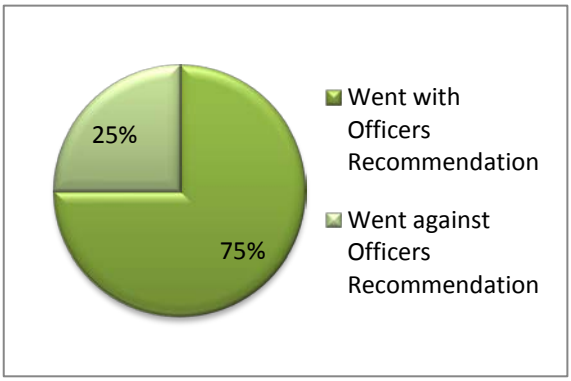
Outcome (as at 1st July 2009)

Granted	75%	3
Refused	25%	1



Committee went with Officers recommendation

Yes	75%	3
No	25%	1

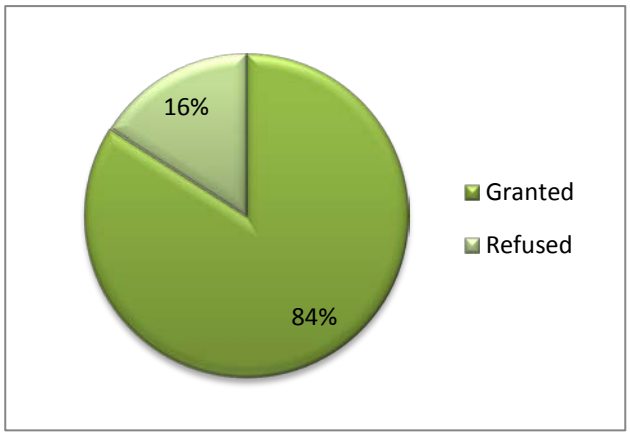


ID	Quarry Name	Committee report	Decision Notice	Did committee follow officers recommendation
23	Marston's Quarry	Recommended to grant	Granted	Y
37	Busta Triangle	Recommended to grant	Refused	N
40	Plumley Wood and Nea Farm Quarry	Recommended to grant	Granted	Y
60	Broadway Quarry	Recommended to grant	Granted	Y

Relevant applications outside specified designations

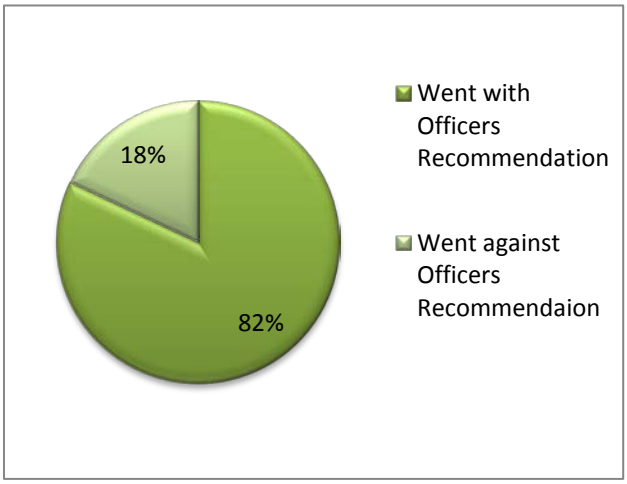
Outcome (as at 1st July 2009)

Granted	84%	47
Refused	16%	9



Committee went with Officers recommendation

Yes	82%	46
No	18%	10



Interpretation and analysis of question 13

Of the 60 sites, 58 were recommended for approval by the officers. This illustrates that considerable productive consultation and discussion has taken place prior to submission and that mineral companies do not pursue to application sites with a poor chance of success.

Committees do not always follow their officers' advice. The 58 recommendations translated into 51 approvals. 18% of decisions outside a specified designation went against the officer recommendation; the comparative figure for inside was 25%. This is further examined in the body of the report.

Outside the specified designations the approval rate was 84%; inside, the approval rate was 75%.

Of the 11 sites which went against officer recommendation, 10 were recommended to grant and one to refuse.

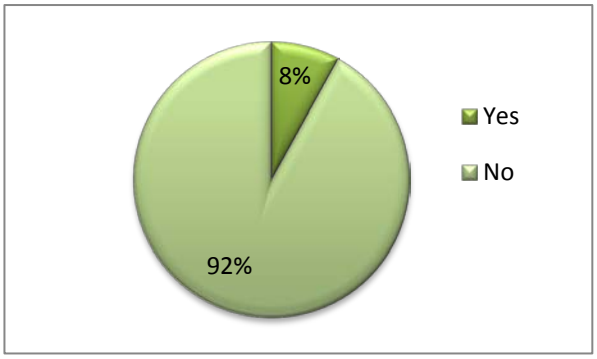
Relevant applications outside a specified designation

FINAL_ID	Quarry Name	COMMITTEE REPORT	DECISION NOTICE	DID COMMITTEE FOLLOW OFFICERS RECOMMENDATION
1	Brassington Moor Quarry, Longcliffe	Recommended to Grant	Granted	Y
2	Thrumpton's land	Recommended to Grant	Granted	Y
3	Shawell Quarry	Recommended to Grant	Granted	Y
4	North Kelsey Road Quarry	Recommended to Grant	Granted	Y
5	Norton Bottoms Quarry	Recommended to Grant	Granted	Y
6	Norton Disney Quarry	Recommended to Grant	Granted	Y
7	Red Barn Quarry	Recommended to Grant	Granted	Y
8	Tattershall Thorpe	Recommended to Grant	Granted	Y
11	East Leake Quarry	Recommended to Grant	Granted	Y
12	Sturton Le Steeple	Recommended to Grant	Granted	Y
14	Black Cat Island	Recommended to Grant	Granted	Y
15	Broom Quarry and land to the east of Gypsey Lane	Recommended to Grant	Granted	Y
16	Medbury Farm	Recommended Refusal	Refused	Y
17	Willington Quarry (Dairy Farm), Renhold	Recommended to Grant	Granted	Y
18	Little Paxton Quarry	Recommended to Grant	Granted	Y
19	Must Farm	Recommended to Grant	Granted	Y
20	Pentney	Recommended to Grant	Granted	Y
21	Chilton Estate (March 08)	Recommended to Grant	Refused	N
22	Chilton Estate	Recommended to Grant	Refused	N
24	Wetherden Quarry	Recommended to Grant	Granted	Y
25	Divethill Quarry	Recommended to Grant	Granted	Y
26	High House Quarry	Recommended to Grant	Granted	Y
27	Overby Quarry	Recommended to Grant	Granted	Y
28	Roan Edge Quarry	Recommended to Grant	Granted	Y
29	Tendley Quarry	Recommended to Grant	Granted	Y
30	Thackwood Landfill	Recommended to Grant	Granted	Y
31	Bradleys Sand Pit	Recommended to Grant	Granted	Y
32	Runshaw	Recommended to Grant	Refused	N
33	Sandons Farm	Recommended to Grant	Refused	N
34	Denham Park Farm	Recommended to Grant	Granted	Y
35	Springfield Farm	Recommended to Grant	Granted	Y
36	Summerleaze (New Denham)	Recommended to Grant	Granted	Y
39	Frithend Quarry	Recommended to Grant	Granted	Y
41	Roke Manor	Recommended to Grant	Granted	Y
42	Bridge Farm	Recommended to Grant	Granted	Y
43	Caversham Quarry	Recommended to Grant	Granted	Y
44	Shipton Cherwell Quarry	Recommended 'Refusal'	Granted	N
45	Stonhenge Farm	Recommended to Grant	Refused	N
46	Hithermoor Quarry	Recommended to Grant	Granted	Y
47	Reigate Road Quarry	Recommended to Grant	Granted	Y
48	Runfold South Quarry	Recommended to Grant	Refused	N
49	Land at Kingsham	Recommended to Grant	Granted	Y
50	Berkyn Manor (Land East of Horton Road)	Recommeneded Refusal	Granted	N
52	Poyle Manor	Recommended to Grant	Granted	Y
53	Land off Avon Common	Recommended to Grant	Granted	Y
54	Woodsford Farm	Recommended to Grant	Granted	Y
55	Latton, Wiltshire	Recommended to Grant	Granted	Y
56	Low Lane	Recommended to Grant	Granted	Y
57	Bayston Hill Quarry	Recommended to Grant	Granted	Y
58	Ball Mill Quarry (Church Farm South)	Recommended to Grant	Refused	N
59	Ball Mill Quarry (Church Farm West)	Recommended to Grant	Granted	Y
61	Gransmoor Quarry	Recommended to Grant	Granted	Y
63	Allerton Park - Holly Bank Farm	Recommended to Grant	Granted	Y
64	Forcett Quarry	Recommended to Grant	Granted	Y
65	Ladybridge Farm	Recommended to Grant	Granted	Y
66	Lavant	Recommended Granted	Refused	N

Question 14: *If the result of Appeal, did the Inspector deal (if at all) with MPS1)?*

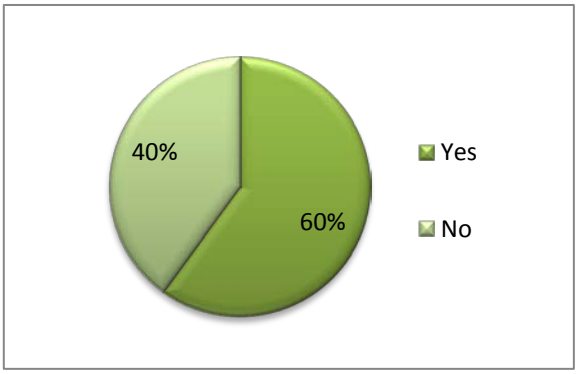
Did the Application go to Appeal?

Yes	8%	5
No	92%	55



Of those which went to Appeal, did the Inspector mention MPS1?

Yes	60%	3
No	40%	2



Appeal Sites

ID	Quarry Name
32	Runshaw
33	Sandon's Farm
37	Busta Triangle *
48	Runfold South Quarry
50	Berkyn Manor

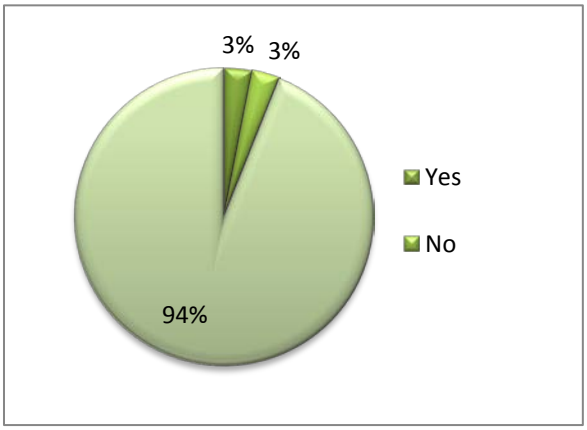
* Awaiting High Court decision.

Interpretation and analysis of question 14

Only five of the 60 relevant applications went to Appeal. In three of the cases MPS1 was mentioned in the Inspector's report but only the relevance of need. MPS1 appears to have no other highlighted relevance to the four decisions. Given that MPS1 is government policy, one might expect it to be referenced platform in all mineral appeal decisions.

Question 15: *On reading the Conditions, did you feel that any were as a consequence of being in a specified 'Designation'?*

Conditions	% of Applications	Number of Applications
Yes	3%	2
No	3%	2
Not in a designation	94%	56



Interpretation and analysis of question 15
Of the four sites in a specified designation, two had Planning Conditions which could be considered were attached as a consequence of the designation.

Interesting examples and anomalies in question 15
The two sites with Planning Conditions related to the specified designation are:

Busta Triangle:
Condition 27 "*A heathland corridor shall be created either side of the restored bridleway that crosses Busta Quarry in accordance with a scheme to be submitted under condition 25.*

Reason: To enhance the nature conservation interests of the site a Special Protection Area.

Plumley Wood and Nea Farm Quarry
Condition 19 **"** *No heavy Goods Vehicle access is to take place within the Avon Valley Ramsar, SPA or River Avon SAC, other than for conveyor maintenance vehicles on the estate roads"*

Condition 23 "*All silts and fines that accumulate around various parts of the conveyor system linking Plumley Wood and Blashford Plant Site shall be contained, to the satisfaction of the Mineral Planning Authority"*

Reason: To protect against the risk of flooding and to ensure no adverse impact is caused to public rights of way or by way of silt deposition affecting integrity of River Avon SAC, Avon Valley Ramsar and SPA.

Condition 24 "*No excavation shall take place to levels below the final working depth indicated on the approved drawings and in the approved documents including those approved under permission no. 06/88238."*

Reason: To protect the water environment, and to prevent changes to hydrological regime that may affect the integrity of internationally designated sites

Condition 25 "*No dewatering over and above that approved by this permission shall take place on the site without the prior approval of the Mineral Planning Authority in writing.*

Reason: In order to safeguard against water pollution, to ensure protection of internationally designated sites and ensure the site is capable of satisfactory restoration."

Condition 26 "*Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The bund capacity shall give 110% of the total volume for single and hydraulically linked tanks. If there is multiple tankage, the bund capacity shall be 110% of the largest tank or 25% of the total capacity of all tanks, whichever is the greatest. All filling points, vents, gauges and sight glasses and overflow pipes shall be located within the bund. There shall be no outlet connecting the bund to any drain, sewer or watercourse or discharging onto the ground. Associated pipework shall be located above ground where possible and protected from accidental damage"*

Reason: To prevent pollution of the water environment and to ensure protection of internationally designated sites.

Condition 27 "*No sewage or trade effluent (including vehicle wash or vehicle steam cleaning effluent) shall be discharged to any surface water drainage system."*

Reason: To prevent pollution of the water environment and to ensure the protection of internationally designated sites.

NB –The data here refers to restoration conditions. The data in question 7 refers to mitigation measures

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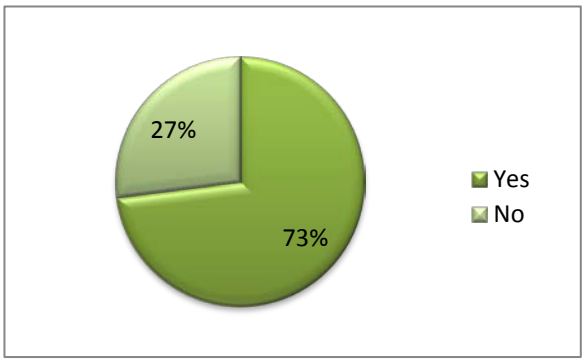
Question 16: *If this is a quarry extension approval has this changed the previous restoration provisions?*

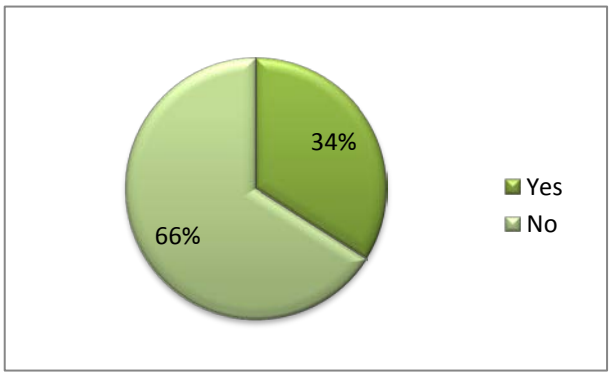
Is the application site a quarry extension?

Yes	73%	44
No	27%	16



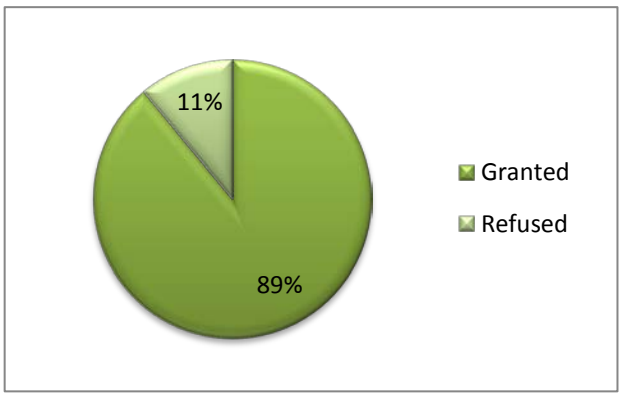
Has this changes the previous restoration provisions?

Yes	34%	15
No	66%	29



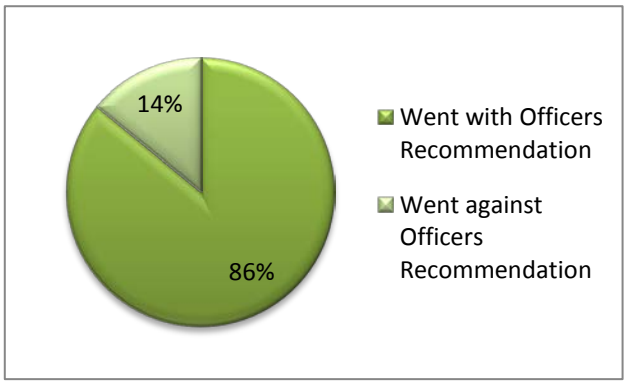
Of the applications for extensions, which sites were:

Granted	89%	39
Refused	11%	5



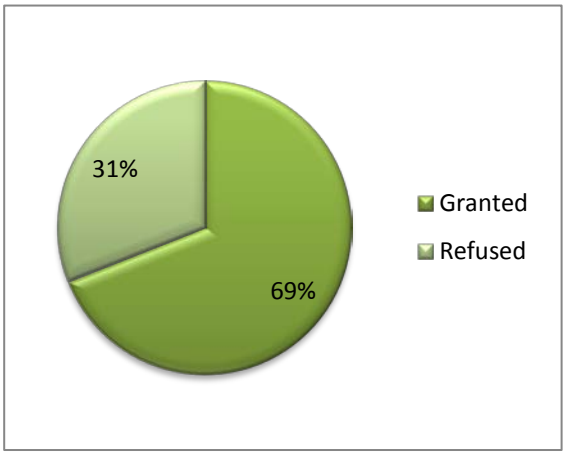
Of the applications for extensions, Did the Committee follow officers recommendations?

Yes	86%	38
No	14%	6



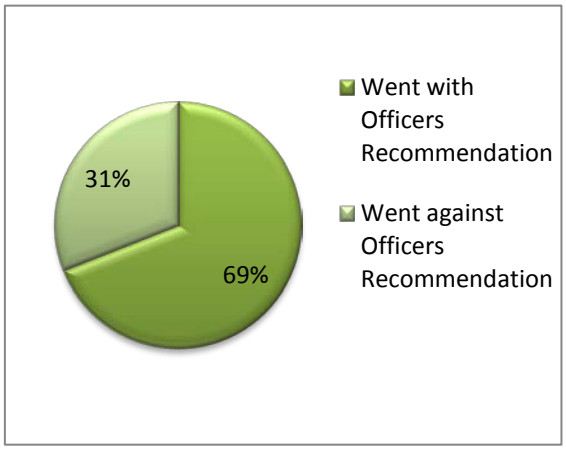
Of the applications for new quarries, which sites were:

Granted	69%	11
Refused	31%	5



Of the applications new quarries, Did the committee follow officers recommendations?

Yes	69%	11
No	31%	5

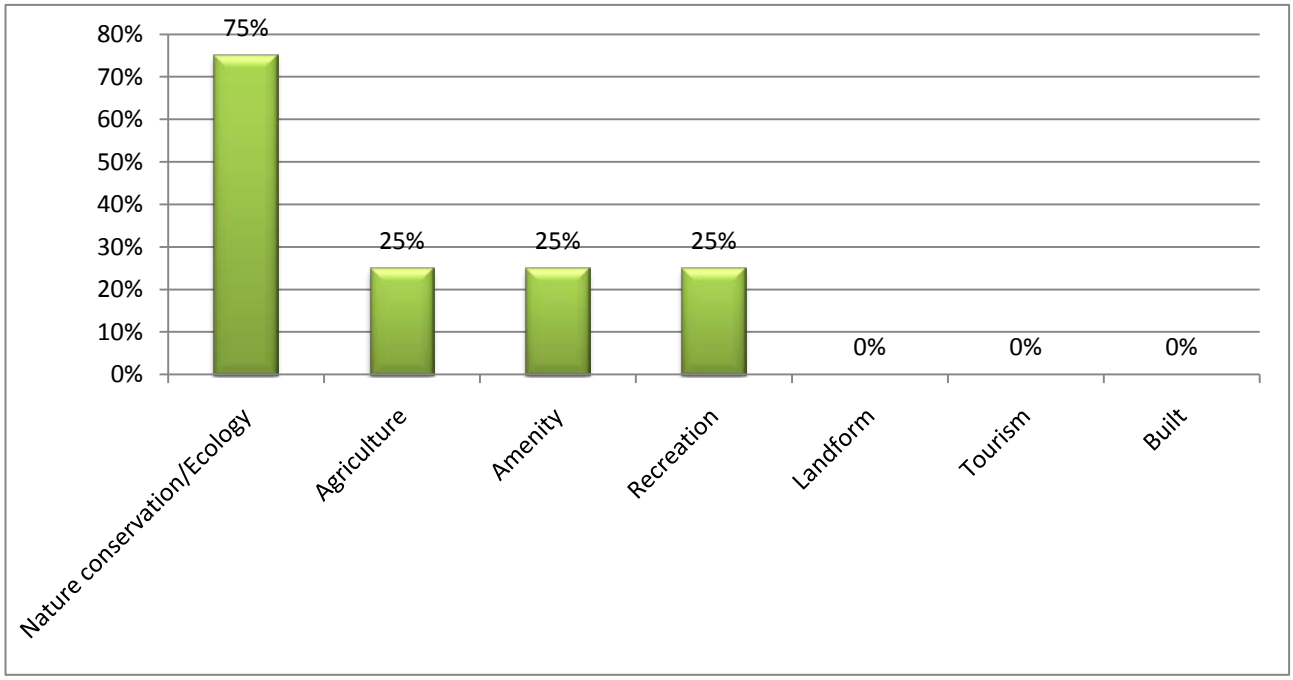


Interpretation and analysis of question 16

It is interesting that in extensions to quarries, 89% of applications are granted while for new quarries the figure is 69%. It is likely that the existing/original quarry is providing, in part, the context for the extension. Local stakeholders may have become partially immune or use to a quarry such that an extension is not approved so strongly. New quarries, by definition, are introducing a new landuse to an area.

Question 17: *What were the restoration/after use objectives, e.g. Tourism, Amenity, Built or a long term acceptable landform?*

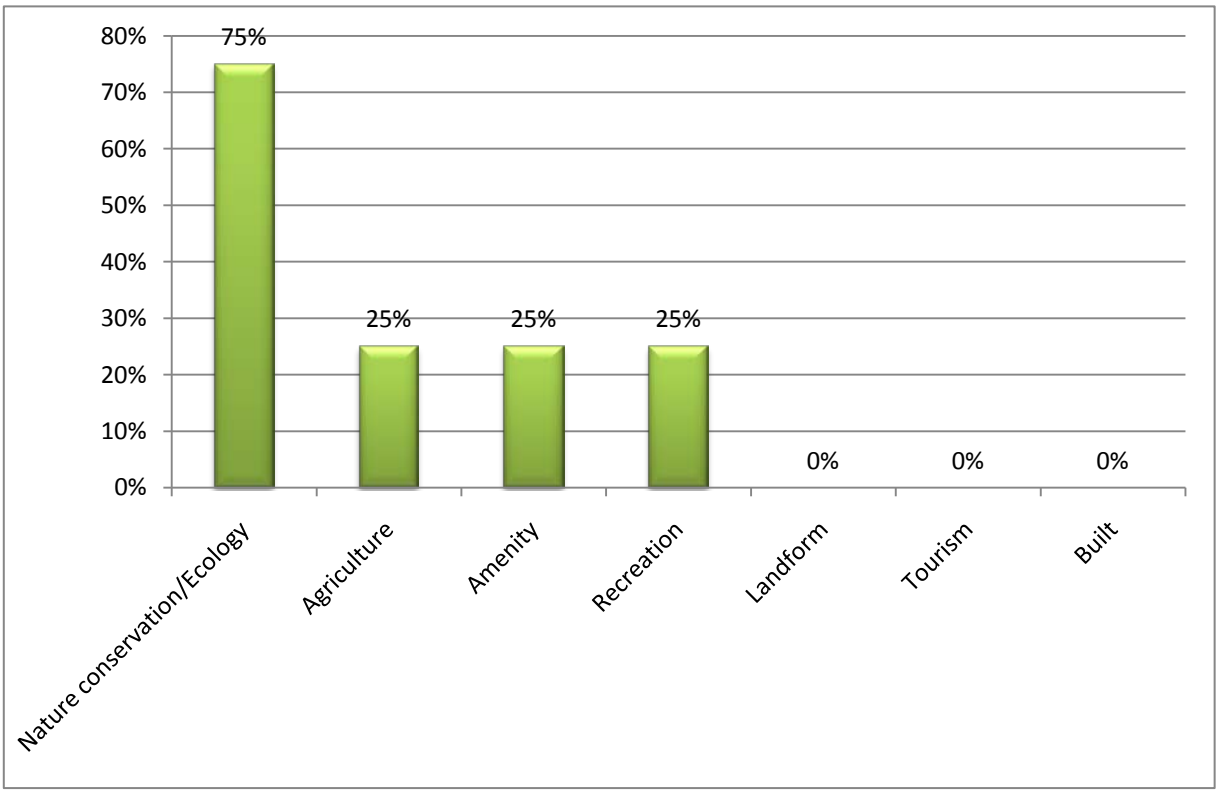
Restoration objectives for all sites



Restoration objectives for sites within Specified Designations

ID	Quarry Name	Nature conservation / Ecology	Agriculture	Amenity	Recreation	Landform	Tourism	Built
23	Marstons Quarry							
37	Busta Triangle							
40	Plumley Wood and Nea Farm							
60	Broadway Quarry							

Restoration Objective	% of Applications	Number of Applications
Nature Conservation/Ecology	75%	3
Landform	25%	1
Agriculture	25%	1
Amenity	25%	1
Built	0%	0
Recreation	0%	0
Tourism	0%	0



Interpretation and analysis of question 17

Nature Conservation, either solely or in combination represents the commonest afteruse (or afteruse element). Agriculture represents the only other afteruse occurring in more than 50% of the schemes. All other uses are infrequent (less than 15%). Built afteruses only feature in 2% of the 60 schemes.

An analysis of the table broken down by MPA shows that there is considerable variation. Eight MPAs, for example, had agriculture as an afteruse in 100% of cases (although in some cases there was only one application for that MPA), three MPAs had it in none of the cases.

The Table below shows what percentage of ES's referred to which restoration uses. For example, 100% of schemes in Bedfordshire had agriculture as an afteruse while 0% of the schemes in Leicestershire did.

0-19%	20-39%	40-59%	60-79%	80-100%

MPA	TOURISM	AMENITY	BUILT	NATURE CONSERVATION/ECOLOGY	LANDFORM	AGRICULTURE	RECREATION
	%	%	%	%	%	%	%
Bedfordshire County Council	0	0	0	75	0	100	25
Buckinghamshire County Council	0	0	0	100	0	67	33
Cambridgeshire County Council	0	50	0	100	0	0	50
Cumbria County Council	0	0	0	60	40	20	20
Derbyshire County Council	0	0	0	0	50	0	50
Dorset County Council	0	0	0	50	0	50	0
East Riding of Yorkshire Council	0	0	0	0	0	100	100
Hampshire County Council	0	0	0	75	0	50	0
Lancashire County Council	0	67	0	67	33	33	67
Leicestershire County Council	0	0	0	100	100	0	0
Lincolnshire County Council	0	0	0	50	20	60	0
Norfolk County Council	0	0	0	100	0	0	0
North Yorkshire County Council	0	0	0	67	0	33	0
Northumberland County Council	0	0	0	100	0	100	0
Nottinghamshire County Council	50	100	0	100	0	100	0
Oxfordshire County Council	0	25	25	50	0	25	25
Shropshire County Council	100	0	0	100	0	100	0
Suffolk County Council	0	0	0	25	25	75	0
Surrey County Council	0	33	0	67	0	67	0
West Sussex County Council	0	0	0	100	0	50	50
Wiltshire County Council	0	0	0	50	0	100	0
Windsor & Maidenhead	0	0	0	0	0	100	0