

Lilburn Estates Proposals for a Forestry project at Threestoneburn Forest to Restore Open Moorland and Create Native Woodland

Application for Consent under the Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999

Background and Statement of Reasons Supporting Decision to Grant Consent

Contents

Purpose	2
Site and ownership	2
Legislative Background	3
National Policy Context Relating to Threestoneburn Forest	6
Regional Policy Context relating to Threestoneburn Forest	7
Countryside Characteristic Zone 4 Cheviots	8
Principle of Deforestation	9
Summary of Consultation Responses	11
Issues Raised by Consultees	11
Basis of the EIA Determination	12
Assessment – The main issues considered in determination of the project ...	13
Geology, Hydrology, Soils and Drainage	13
Ecology and Nature Conservation	16
Red Squirrels	18
Social and Economic Issues	20
Landscape	20
Cultural Heritage	23
Transport and Traffic	26
Carbon	28
Interaction between Environmental Factors	30
Summary and Conclusions	32
Forestry Commission Determination	32
Conditions of Consent	32
General	32
Hydrology	34
Ecology and nature conservation	34
Red squirrels	35
Landscape	36
Cultural Heritage	37
Carbon and Compensatory Planting	37

Glossary

Term/Acronym	Definition
ES	Environmental Statement
FC	Forestry Commission
NNP	Northumberland National Park
NNPA	Northumberland National Park Authority
NCC	Northumberland County Council
NWT	Northumberland Wildlife Trust
EA	Environment Agency
RSPB	Royal Society for the Protection Birds
SAP	Species Action Plan
HAP	Habitat Action Plan
EPS	European Protected Species
SSSI	Site of Special Scientific Interest
EIA	Environmental Impact Assessment
ASNW	Ancient–Semi Natural Woodland – land that has been woodland since ~1600.
Opinion	The process whereby FC, as the Competent Authority under the EIA regulations for Forestry give their opinion as to whether a project is relevant under the EIA regulations and whether it will require our consent.
Determination	The decision FC ultimately make, as the Competent Authority, under the EIA regulations for Forestry, on whether to give consent for a project that is relevant to the EIA regulations. Any consent may be given with or without conditions.
Scoping	The process to identify the issues an Environmental Statement must cover to allow the Forestry Commission to make a Determination whether or not to give consent.
Screening	A process used to determine if a project will have a significant affect to allow the Forestry Commission to give their Opinion.
Yield Class	A measure of woodland's growth/productivity. It is determined by the woodland's mean annual increase in volume and is recorded in cubic metres per hectare. For example, a yield class of 20 means that the woodland will grow by an average of 20 cubic metres over each hectare every year.
Additionality	A criterion for projects to store carbon as a saleable 'service or commodity. To be additional, a project must demonstrate that it goes beyond minimum legal requirements and that the net carbon storage would not have been generated in the absence of the project. Projects should demonstrate additionality by not being required under any law or regulatory framework and not being possible without finance generated by the project's carbon storage.

Purpose

1. To explain the background to the Forestry Commission's decision to grant consent (subject to conditions) to the above application. This will include the main reasons and considerations on which the decision is based and describe, where necessary, the main measures that have been agreed to avoid, reduce and, if possible, offset the major adverse effects of the project.

Site and ownership

2. Threestoneburn Forest is located near Wooler in the Cheviot Hills and lies within the Northumberland National Park (NNP). Originally a plantation owned and managed by the Forestry Commission it is currently owned and managed by Lilburn Estates.

Legislative Background

3. The Environmental Impact Assessment (Forestry) (England and Wales) Regulations 1999¹ ("the EIA (Forestry) Regulations") prohibit the carrying out of any work or operations in relation to a "relevant project" unless consent has been obtained from the Forestry Commission or, on appeal, the appropriate Authority (in England, the Secretary of State for Environment, Food and Rural Affairs).

4. Regulation 3 defines a "relevant project" as one of four types of forestry project:

- Afforestation;
- Deforestation;
- Forest road works;
- Forest quarry works

which does not constitute development regulated by the EIA legislation on town and country planning but which is likely by virtue of factors such as its nature, size or location to have significant effects on the environment.

5. An application for consent for a project at Threestoneburn under the EIA (Forestry) Regulations was submitted to the FC on 6th of June 2008. This included an Environmental Statement setting out the project, the likely impacts on the environment and the proposed mitigation measures.

Application Details - Environmental Statement

6. Forestry Commission first considered Lilburn Estate's (the applicant) proposals for deforestation at Threestoneburn in January 2007. The proposal discussed with the Forestry Commission was to create a mosaic of open habitat and riparian native broadleaved by restore moorland heath and bog land and replacing conifers with native broadleaves along the water courses.

7. To achieve this the applicant proposed to remove the standing conifers (567.8 hectares) over a three year period and replant a proportion of the felled area with native broadleaves with additional compensatory planting to be undertaken elsewhere. To facilitate the tree felling and timber extraction the proposals included plans for forest roading and the quarrying of road stone.

8. The Forestry Commission received the EIA determination enquiry forms in February 2007, the proposal was screened and the screening checklist was completed. The applicant was advised of the Forestry Commission's Opinion in February 2007: that EIA (Forestry) Consent was required and that it would be necessary for them to prepare an Environmental Statement.

9. The application for EIA (Forestry) Consent and the Environmental Statement were submitted to the Forestry Commission on the 4th October 2007. Forestry Commission judged that the Environmental Statement did not cover all the relevant aspects of the environment and advised that additional information was required before the statement could be accepted for consultation. In particular

1. Subsequently referred to as the EIA (Forestry) Regulations.

more information was requested in relation to hydrology, European Protected Species, red squirrels and landscape. There was a considerable time delay from 4th October 2007 until 12th September 2008 whilst the applicant carried out the work necessary to gather the additional information that had been requested.

10. The application for EIA (Forestry) Consent and the Environmental Statement were subject to a 28-day public consultation in September 2008. Notices of the proposals were published in the Northumberland Gazette and Newcastle Journal with copies of the Environmental Statement available for the public to view at the Forestry Commission offices at Walby Hill, Rothbury and the Scottish Woodlands office in Alnwick.
11. As a result of the consultee responses the Forestry Commission requested further information from the applicant to address the significant issues raised.

Revised Application Details

12. The applicant submitted revised proposals in response to the Forestry Commission's request for further information on the 1st June 2009. The revisions included the felling of trees over a 12 year time span rather than the original three years.
13. The additional information, amendments and clarifications were submitted as an Annex to the Environmental Statement and was open to public consultation from 30th June to 31st July 2009.
14. Due to issues raised by consultees following the June/July 2009 consultation the Forestry Commission made a request for further information to clarify various aspects of the project. The applicant submitted this information on 24th June 2010 and this was subject to a period of consultation from 19th July 2010 to 6th September 2010.
15. Following the responses received to the July/September 2010 consultation further liaison was required with statutory consultees to establish that the proposed mitigation strategies for archaeology were satisfactory. This work took place between October 2010 and March 2011.

Table 1: Threestoneburn application for EIA Consent: Key Dates

Date	Stage in EIA Process	Relevant Section of EIA (Forestry) (England and Wales) Regulations 1999 (Statutory Instrument 1999 No. 2228)
11 Jan 07	Initial meeting between applicant and Forestry Commission to ascertain whether the FC considered the deforestation at Threestoneburn to be subject to the Forestry (EIA) Regulations.	Regulation 5 Paragraph 3
06 Feb 07	EIA Determination Enquiry form submitted by Scottish Woodlands, Lilburn Estate's agent.	Regulation 5 Paragraph 2
09 Feb 07	After completing an EIA checklist, Forestry Commission wrote to the applicant to confirm that the application was a relevant project which would need consent under EIA (Forestry) Regulations.	Regulation 6 Paragraph 1a
06 March 07	Scoping meeting held at Ilderton Village Hall.	Regulation 9 Paragraphs 1 & 3
22 March 07	Scoping environmental information request letters sent to parties that had attended scoping meeting.	Regulation 6 Paragraph 5a
15 June 07	Carbon assessment report published and submitted to Forestry Commission.	Regulation 9 Paragraph 6
04 Oct 07	Forestry Commission advised the applicant that the Environmental Statement was not acceptable and that further work was required in a number of areas for it to be suitable for consultation.	Regulation 11 Paragraphs 1 and 2
06 Jun 08	A revised version of the Environmental Statement submitted by the applicant.	
13 Jun 08	Forestry Commission advised the applicant that the Environmental Statement was still not acceptable and that changes and additions were required before it would be suitable for consultation.	
9 Sep 08	Environmental Statement received from applicant.	
12 Sep 08	Forestry Commission confirmed the Environmental Statement was acceptable and would commence the public consultation.	
18 Sep 08	Public Consultation opened for 28 days until 16 October 2008. Copies of the Environmental Statement placed in public places, publicised in the Northumberland Gazette and Newcastle Journal and sent to statutory consultees.	Regulation 13 Paragraphs 1, 2 and 3
30 Sept 08	Requests received from Northumberland National Park Authority and Natural England for an extension to consultation period. Period extended 23 rd November received by NNPA.	Regulation 9 Paragraph 6
20 Nov 08	Public meeting hosted by NNPA at the Tankerville Arms, Wooler to help NNPA prepare a response to the EIA consultation.	Regulation 9 Paragraph 8
23 Nov 08	First consultation period ended.	Regulation 13 Paragraphs 1 & 4
30 Jan 09	Formal request from Forestry Commission for additional information regarding issues raised via the public consultation.	Regulation 11 Paragraphs a & b
01 June 09	Additional information for Environmental Statement received by Forestry Commission.	Regulation 13 Paragraphs 1 & 4
29 June 09	Notice placed in the Northumberland Gazette and Newcastle Journal notifying the public that an Annex to Environmental Statement was available for public viewing for 28 days at FC, Walby Hill Rothbury and Scottish Woodlands, Alnwick.	Regulation 13 Paragraphs 1 & 4

Threestoneburn
Application for Consent under EIA (Forestry) (England and Wales) Regulations 1999

Date	Stage in EIA Process	Relevant Section of EIA (Forestry) (England and Wales) Regulations 1999 (Statutory Instrument 1999 No. 2228)
30 June 09	Second formal public consultation period started.	Regulation 13, Paragraphs 1 & 4
31 July 09	Second formal public consultation period ended.	Regulation 13 Paragraphs 1 & 4
15 Mar 10	Objection to the use of the timber haulage route via Brandon Cottages by Northumberland County Council (NCC) Highways Manager for safety reasons.	
9 April 10	Formal request from the FC for further information on issues raised by the second public consultation.	Regulation 11 Paragraphs, a & b
24 June 10	Additional information to the Annex received by Forestry Commission.	Regulation 13, Paragraphs 1 & 4
19 July 10	Notice placed in Northumberland Gazette and Newcastle Journal notifying public that the Annex to Environmental Statement, was available for public viewing for 28 days at Forestry Commission, Rothbury and Scottish Woodlands, Alnwick.	Regulation 13, Paragraphs 1 & 4
19 July 10	Third formal public consultation period started.	Regulation 13, Paragraphs 1 & 4
6 Sept 10	Third formal public consultation period ended.	Regulation 13, Paragraphs 1 & 4
01 Oct 10	Specification received from NNPA for applicant to carry out desk top exercise for archaeology and prepare watching brief.	
25 Feb 11	Mitigation strategy for archaeological interests agreed.	
	Analysis of Environmental Statement and consultation responses concluded, confirming that the environmental impact of the project would not be significant and the consent could be granted subject to a number of conditions.	
Insert date	Decision to grant consent with conditions issued by Forestry Commission.	

National Policy Context Relating to Threestoneburn Forest

16. National and regional policy documents provide a general context for considering applications under EIA (Forestry) Regulations. They help to inform the decision by setting down the contemporary standards that should be applied when determining whether or not an environmental impact is likely to be significant.
17. **Climate Change - The UK Programme (2006)**² sets out the Government's commitments both at international and domestic levels to meet the challenge of climate change. The agriculture and forestry sectors contribute 7% of UK greenhouse gas emissions. The major issue for this sector is in tackling direct emissions of nitrous oxide and methane, rather than the release of carbon dioxide.
18. The Government's approach to sustainable forestry is underpinned by the **UK Forestry Standard (2nd edition, 2004)**.³ The Standard provides the benchmark for judging the performance of the UK forestry sector. It defines criteria and

² <http://www.defra.gov.uk/environment/climatechange/uk/ukccp/pdf/ukccp06-all.pdf>

³ [http://www.forestry.gov.uk/PDF/fcfc001.pdf/\\$FILE/fcfc001.pdf](http://www.forestry.gov.uk/PDF/fcfc001.pdf/$FILE/fcfc001.pdf)

indicators that enable progress in delivering sustainable forest management to be assessed. The Standard includes a series of Practice Notes that help to identify acceptable options for forest and woodland management and the siting of new woodlands.

19. The Government's priorities for forestry in England are outlined in **the Strategy for England's Trees, Woods and Forests** (2007)⁴. In consideration of the benefits that forestry provides to land and the natural environment the strategy states:

"To create, expand and maintain a network of sustainably managed trees, woods and forests that are resilient to climate change. Making a full contribution to protecting and enhancing our woodland habitats and associated species and facilitating their resilience and adaptation to climate change; safeguarding, enhancing and celebrating the characteristic elements of rural and urban landscapes. Celebrating their cultural and historic values; and maximising the full range of ecosystem services provided by trees, woods and forests, including the protection of soil and water resources now and in the future, as needs change." (page 23)

20. The **Biodiversity Strategy for England (Working with the Grain of Nature)** (2002)⁵ includes the stated aim of protecting biodiversity-rich woodland from external threats, from industry and surrounding land uses (page 50).
21. Under Section 40 of the **Natural Environment and Rural Communities Act 2006** it is the duty of the Forestry Commission in carrying out its functions to have regard, so far as is consistent with the proper exercise of those functions, to conserve biological diversity.
22. The Government's policy for conversion of woodland to open habitat in England is outlined in the FC document 'When to Convert Woods and Forests to Open Habitat in England: Government Policy '(March 2010). It creates a mechanism for balancing woodland removal and woodland creation to enhance open habitats to benefit wildlife and creating woodland to help mitigate against climate change. The policy also aims to provide a framework for site-by-site decision-making based on converting woodland to open habitat where it will consolidate current high quality habitat, or where it will significantly enhance key species and habitats.

Regional Policy Context relating to Threestoneburn Forest

23. The **North East Regional Forestry Strategy**⁶ is a non-statutory document jointly published in March 2005 by Forestry Commission and the Government Office for the North East. It is intended to act as a framework for organisations operating in the forestry sector and presents the region's priorities for forestry. It was produced by a partnership of regional and local organisations including public, private and non-governmental bodies. Whilst it does not have a statutory role in setting policy it is a useful statement of the role of and priorities for woodlands in the North East.

⁴ <http://www.defra.gov.uk/wildlife-countryside/pdf/forestry/20070620-forestry.pdf>

⁵ <http://www.defra.gov.uk/wildlife-countryside/pdf/biodiversity/biostrategy.pdf>

⁶ [http://www.forestry.gov.uk/pdf/ne-rff-forest-strategy.pdf/\\$FILE/ne-rff-forest-strategy.pdf](http://www.forestry.gov.uk/pdf/ne-rff-forest-strategy.pdf/$FILE/ne-rff-forest-strategy.pdf)

24. The North East Regional Forestry Strategy highlights the important contribution the region's forests, woodlands and trees make to the environment, economy and quality of life in the North East of England. The Strategy promotes the multi-purpose role of forests and in particular the benefits of woodlands close to where people live. The Strategy focuses on maximising the forestry sectors contribution to a range of strategic policy outcomes. A number of these desired outcomes are relevant to this application:

Countryside Characteristic Zone 4 Cheviots

25. The Cheviots have been identified as a separate landscape in the county of Northumberland.
26. Enhancing and protecting the region's landscape, quality of environment and biodiversity.
27. Securing jobs and improving the productivity of the hundreds of small forestry businesses operating in rural north east.
28. Growing the tourism economy by developing new facilities, attracting more visitors and engaging more tourism businesses.
29. Effective response to climate change – harnessing the potential of forests and timber products to help reduce the region's carbon dioxide emissions.
30. Northumberland. The key characteristic of the area and landscape are classified as character area 4, and these characteristics are relevant to the proposal for Threestoneburn Forest because it lies within the Cheviots character area. The objectives of these character areas are to ensure the long term maintenance and enhancement of the landscapes, in this case of the of the Cheviot hills The key characteristics relevant to the Cheviots and therefore this proposal have been identified as:
- Wild, open, windswept landscape dominated by broad moorland horizons and almost devoid of settlement.
 - Extensive rolling plateaux of semi-natural grass moor and heather moorland. The summit is characterised by mixed areas of blanket bog and heather and by granitic tors.
 - Coniferous woodland plantations on some plateaux tops and upper valley slopes.
 - Treeless upper hillsides of coarse white grassland and heather moorland. Lower steeper slopes have a greener appearance indicative of productive grassland.
31. Seven objectives and opportunities have been identified to enhance the current landscape and maintain the character of the Cheviot character area. Those relevant to the proposal include:
- A continued restructuring programme would improve the appearance of existing coniferous woodlands and remove individual discordant blocks.
 - Woodland management and new native woodland planting, in valley bottoms and on lower slopes, as well as the regeneration of native scrub woodland in sheltered valleys is important.
 - Opportunities exist to conserve and enhance the diversity of natural moorland vegetation through a reduction in stocking rates, the introduction

of appropriate management regimes, enhancement of wetland communities and the control or reversal of drainage.

32. The proposed site of the deforestation is covered by a number of local county level **Biodiversity Action Plans (BAP) and Habitat Action Plans (HAP)**. They provide advice on what is at risk, along with the significance of species/habitat in local areas. A number of species and habitats have been identified as relevant to the proposal, including those covering blanket bog, target areas for ancient semi-natural woodland (ASNW) expansion, rivers and wetland (with reference to the Special Area of Conservation (SAC) on the river Till which is downstream of the proposed deforestation), heather moorland, black grouse, otters, bats, red squirrels (nine of the 16 designated reserves for North England are in Northumberland) and upland waders.
33. Threestoneburn Forest is situated in the Northumberland National Park (NNP) which has its own management plan⁷. Under section 3.3 'A living working landscape for now and the future', it sets out the policy and desired outcomes along with the desired objectives and a means of achieving these objectives.
34. The management plan recognises the importance of forestry to the local economy as a local work provider and also its procurement of goods and services. The policy also recognises forestry's important role in relation to carbon storage and NNP's contribution to this. In the outcome section 3.1 the management plan assesses the long term pressures on business practises and opportunities that exist for financial support towards conservation works. The plan acknowledges that while flooding is a very rare occurrence in the NNP it is not immune to future incidences of flooding which may result from changes in climate.
35. The NNP management plan states as one of its objectives (3.1.1) it will:

'encourage and support the uptake of better and more sustainable land management practices which conserve and enhance the National Parks distinctive qualities'.

The NNP intends to achieve this by:

- Supporting further the development of commercially viable sustainable farming, fishing, forestry and grouse moor management practices which conserve and/or enhance the national park and do not detract from the natural and cultural qualities.
- Encouraging an increase in the area of well managed native woodlands.
- Supporting the redesign of forestry plantations where necessary to achieve a better contribution to the landscape and other environmental benefits.

Principle of Deforestation

36. Current national, regional forestry policies and planning policies do not explicitly prevent deforestation. However within the forestry act there is a strong

7

presumption against deforestation and this is applied by Forestry Commission through its administration of felling licences. National forestry policy recognises that there are circumstances in which it would be appropriate to remove woodlands and restore open ground habitats. However in most cases compensatory woodland planting should be carried out to help ensure there is no net loss of woodland area. Only in cases where there are overriding reasons for removal of the woodland, such as where the biodiversity value of the restored open habitat would be nationally significant, would compensatory planting not be appropriate. Certain types of woodland such as Ancient Woodlands, are given very high levels of protection through planning policies and forest policies but in most cases there is no policy that would actually prevent an owner changing woodland to another land use in England.

37. Whilst planning and forestry policies are a major consideration, the EIA process is based on the assessment of whether or not the environmental impact of an individual project is significant and it would not be appropriate for this to be determined in advance by general policies.
38. Within Planning Policy Statement 9 (Biodiversity and Geological Conservation)⁸ the government exercises a general presumption against conversion of woodland to other land uses unless there are overriding public benefits. In these situations local planning authorities should seek to ensure that equivalent areas of new woodland are planted in compensation.
39. Forestry projects involving deforestation that exceeds a minimum threshold area need to be considered under the EIA (Forestry) Regulations. In most cases a felling licence would also be required.
40. This application was considered under the EIA (Forestry) Regulations and this determination process was concerned with the significance of the environmental impacts associated with the project.
41. A number of consultees expressed the view that approving this proposal would be contrary to Government and Forestry Commission policy on woodlands. Whilst it is the Forestry Commission's general policy to protect trees and woodlands and to increase their value to society it would be inappropriate, and possibly illegal, for the Forestry Commission to rely on this general policy without considering the individual environmental impacts in detail.
42. The detailed environmental impacts were investigated by the applicant and presented in the Environmental Statement and further information submitted with the application for EIA (Forestry) Consent. A summary of the analysis of these impacts is provided in this document. This provides an overview of the main issues considered in making a determination for this the project. Issues associated with the loss of the trees per se are covered in paragraphs below.

⁸<http://www.communities.gov.uk/planningandbuilding/planning/planningpolicyguidance/planningpolicystatements/planningpolicystatements/pp9>

Summary of Consultation Responses

43. The application for EIA (Forestry) Consent and the documents accompanying the application, including the Environmental Statement, were subject to three separate consultation periods, during September 2008, July 2009 and August 2010. For each consultation exercise a notice was published in the Newcastle Journal and the Northumberland Gazette. The notices advised members of the public that the Environmental Statement and associated documents could be viewed by members of the public at the Scottish Woodlands offices at Greenfield Court, Alnwick and Forestry Commission Offices at Walbury Hill, Rothbury. In the case of the second and third consultations the additional information submitted by the applicant was also available to be viewed by members of the public. The notices stated that anyone who wished to make representations about the application should write to Forestry Commission within 28 days.
44. Forestry Commission provided the Environment Agency (EA), Natural England, Northumberland National Park Authority (NNPA), and Northumberland Wildlife Trust (NWT) with copies of the application and additional information. A request was made for any representations regarding the application to be sent in writing to Forestry Commission within 28 days.
45. The three public consultation exercises received a total of 33 responses. These responses included 18 from statutory consultees and 15 from other organisations and members of the public. Of the 33 responses, 18 were for the first consultation and raised a total of 45 issues. The second consultation process on the further information received eight responses, raising another 19 issues. The third consultation received a further seven responses, three from statutory consultees and four from members of the public, this consultation raised an additional 13 issues. Each individual response was analysed in detail and the individual issues raised by the consultees were considered.
46. The issues raised by consultees and the Forestry Commission's responses are summarised in the Issues table.
47. Consultation responses were received from all the relevant statutory and non statutory bodies including Natural England, NNPA, Northumberland County Council (NCC), NWT and the EA.

Issues Raised by Consultees

48. Natural England expressed concerns in their first response about the potential impact of the proposals on the red squirrel population. The applicant subsequently commissioned a study on the possible effects of the proposals on the resident red squirrel population including the mitigation needed to ensure the long term survival of the red squirrel population at Threestoneburn. This study concluded that with appropriate mitigation measures the population will be able to survive at the area. The red squirrel study was subsequently accepted by Natural England. Natural England also expressed concerns about the implications the tree felling would have on the landscape and that the proposal should include more planting of new native woodlands.

49. EA raised concerns about the possibility of increased flood risk seeking reassurance that a Flood Risk Assessment would be carried out. Their opinion was that water quality sampling described in the Environmental Statement should be increased and continued after tree felling.
50. NWT raised issues in relation to the potential impact on fragile soils and the decommissioning of forest roads after use to restrict access to what could become an important area for breeding birds. They were also concerned about the monitoring of site following the removal of tree cover. NWT also expressed a willingness to contribute to monitoring the site's habitat restoration following tree felling and to provide expert advice.
51. In addition to the detailed responses from the main statutory agencies and advisory bodies, 21 responses in total were received from local residents, local Parish Councillors and concerned individuals from around the region. The main issues raised were:
- Concerns about increased timber traffic, road damage, disturbance to local properties.
 - Narrow roads for recreational use being used by heavy lorries.
 - Alternative routes for lorries not being considered.
 - Affects on the water supply to Threestoneburn House during felling.
 - Loss of carbon reduction in productive woodlands.
 - Risk to cyclists and horse riders using timber haulage route.
 - Concern that the proposals were contrary to Forestry Commission's policy and objectives.
 - Risks to known and unknown archaeological remains.
52. In reaching its decision Forestry Commission sought advice from a range of experts. These experts have advised on flood risk, water quality, carbon storage, landscape appraisals and archaeology.

Basis of the EIA Determination

53. The EIA determination process provides the framework for assessing whether the project will have a significant impact on the environment. The decision on whether or not to grant consent takes account of the environmental impacts of a proposed project and takes into consideration the environmental information, representations received in relation to the application and any other material consideration. In particular these include the assessment of direct and indirect effects of the project on the environmental factors listed in Schedule 4 to the EIA (Forestry) Regulations.
54. Whether or not deforestation proposals gain EIA (Forestry) consent is determined on a case by case basis and depends upon whether the net environmental impact of the project, i.e., the balance of negative and positive affects, is considered by the Relevant Authority (the Forestry Commission) to be significant.
55. In evaluating the effects of the proposed deforestation a number of criteria have been used including:
- The degree of change in environmental conditions.
 - The scale, extent and duration of the project.

- The number of people and of other receptors affected.
- The value and scarcity of the resources affected.
- Whether the proposal results in any breach of environmental standards.
- Whether any protected sites or features are affected.
- The probability of the effect occurring.
- Whether the effect is permanent or temporary, reversible or irreversible, continuous or intermittent.
- Whether it will be feasible to avoid, reduce, remedy or compensate for the effect.

56. The following paragraphs outline:

- The main reasons and considerations on which the decision is based.
- A description, where necessary, of the main measures to avoid, reduce and, if possible, offset the major adverse effects of the project.
- The conditions which are attached to the approval.

Assessment – The main issues considered in determination of the project

57. Schedule 4 of the EIA (Forestry) Regulations 1999 require the competent authority (in the case of afforestation, deforestation, forest roads or forest quarries this is the Forestry Commission) to consider the impacts of the proposals on:

- i) Human beings, fauna and flora.
- ii) Soil, water, air, climate and the landscape.
- iii) Material assets and the cultural heritage.
- iv) The interaction between the factors mentioned in (i) to (iii) above.

58. In assessing the proposal's impact on these factors the Forestry Commission has considered these factors both individually and the interactions between them. The following specific issues were considered:

- Geology, hydrology, soils and drainage.
- Ecology and Nature Conservation.
- Red squirrels.
- Social and economic issues.
- Landscape.
- Cultural heritage.
- Transport and traffic.
- Carbon.
- Interaction between environmental factors.

The issues are described in more detail in the following sections.

Geology, Hydrology, Soils and Drainage

59. The Environmental Statement assessed the potential impacts of the project, mitigation measures, residual impacts and their significance on the soil and water environment. As a result of the mitigation measures proposed most of the issues were ultimately assessed as being of relatively minor significance or not significant.

60. The Environmental Statement recognised that the deforestation would result in a significant change to the hydrological regime and the potential for increased run off and peak flows in down stream watercourses. However it was argued that as a result of operations to restore vegetation on wet bogs there would be increased on site water storage and the peak run off rates would not increase.
61. Short term changes in water quality were anticipated although the risk to down stream water users was expected to be minor. Private water supplies were generally protected against any increase in sediment loading because they were predominantly from groundwater sources.
62. JBA consultants were commissioned by the applicant, to prepare a hydrology report (appendix 21 to the ES). The report found that the proposals would have an effect on the Threestoneburn catchment. The summer peaks and rates were likely to increase significantly following deforestation, but with the exception of rare extreme events were likely to remain below those experienced during winter months, which represent the annual maximum. The section 3.2.5 of the report concluded that there would be little change to the annual flood peaks with deforestation and that land use or changes to land use would have little effect on extreme storm and flood events.
63. The problem of flooding, and the potential effect this could have on down stream properties, was raised as an issue by several consultees. The original proposal involved a more rapid change to the hydrological regime as the plan involved felling the woodland over a three year period. Following analysis of the consultation responses Forestry Commission requested further information on aspects of water quality and flood risk assessment. This subsequent Annex to the Environmental Statement (hereafter ES Annex) was provided on 1st June 2009, included revisions to the proposal to extend the felling period to 12 years which will make any changes to the site's hydrology less pronounced.
64. The EA in its consultation response, requested that a full Flood Risk Assessment (FRA) be carried out. Although a FRA was carried out and is detailed in the hydrology report (section 3.3), EA felt that a fuller FRA would be required to assess the risk to Threestoneburn House. To better understand the potential effects of the project on flooding, further information was requested from the applicant.
65. In response a desk top exercise to explore the effects that the proposed felling would have on the Lilburn water catchment, and Threestoneburn itself, including Threestoneburn house, was undertaken following the advice of Forestry Commission Hydrologist Dr T Nisbet. This showed that the peak flood flow at Threestoneburn would increase by a small amount with annual increases of 1.3% predicted. Over the 12 year felling period this would result a cumulative increase in peak flood flow rate of up to 11.9%. The Lilburn catchment saw a smaller annual peak flood flow increase of 0.5% and a cumulative peak flood flow rate of 5%.
66. These assumptions were based on the worst case scenario and did not take into account the mitigating affects of drain blocking and the regeneration of open habitat vegetation. Dr Nisbet advised that the transformation from conifer canopy to grassland would also reduce the speed of run-off from the site. Dr Nisbet indicated that the proposals for new native woodland planting in the

riparian zones would not affect the peak flood flow rate until the trees were 10 to 15 yrs old.

67. The EA also requested that the applicant demonstrate that mitigation measures were in place to counteract any increases in the peak flood flow rate and its effects on Threestoneburn House. A number of measures, including the following, were proposed by the applicant:
- The restoration of the blanket bog would both increase the water holding capacity on site and release the retained water slowly.
 - Active drain blocking would take place following the felling operation.
 - The use of piling dams to store water on the site using a recognised approach that has been successful at Keilder Mire.
68. During the consultation concerns about the water quality were raised by consultees. The hydrological report by JBA in Appendix 21 of the Environmental Statement included proposed measures to monitor water quality before, during and after the felling operations. The report included water sampling results along with proposals to undertake water quality testing during the felling operations. The EA recommended that these proposals take place and requested that the applicant undertake further sampling in addition to that specified in the hydrology report (Appendix 21). The additional undertakings were agreed by the applicant.
69. Some consultees raised concerns about the possibility of soil erosion and silt accumulations in river gravel beds. The applicant had anticipated these concerns and included proposals to address these issues in the Environmental Statement. In particular the applicant will be working to the standards laid out in the Forestry and Water guidelines⁹. These are the good practice guidelines for the forest industry in the UK and are incorporated within the UK Forestry Standard. The specific on site measures proposed included running harvesting machinery on brush mats to minimise damage to peat soil surfaces and only using whole tree harvesting on freely drained mineral soils in appropriate weather conditions.
70. Consultees were also concerned about the chipping of the woody material remaining after extraction of the timber. The issue was that the potential selection of unsuitable sites to receive 'mulching' treatment would result in siltation and reduced soil stability. Whilst the ES included a commitment to follow the advice contained in the Forest Research document 'Guidance on Site Selection for Brush Removal' FC concluded it would be appropriate to include the requirement for the applicant to carry out a detailed risk assessment of any proposed mulching as a condition of consent.
71. During the construction phase of the project the proposal includes the creation of new forest roads with a number of watercourses crossings. In their consultation response EA confirmed that the proposed water crossings would need their prior written consent (under section 23 of the Land Drainage Act 1991). EA also indicated that they would prefer to have the watercourses bridged with a single span bridge.

⁹ [www.forestry.gov.uk/pdf/FCGL002.pdf/\\$FILE/FCGL002.pdf](http://www.forestry.gov.uk/pdf/FCGL002.pdf/$FILE/FCGL002.pdf)

72. Having considered the project proposal, including the proposed mitigation actions together with the environmental evidence and consultation responses, Forestry Commission have concluded that the environmental impact on the geology, hydrology, soils and drainage of the area would not be significant.

Ecology and Nature Conservation

73. The Environmental Statement considered the impact of the proposal on natural habitats, breeding birds and on protected species. It includes ecological surveys of the site which included a mammal survey, a reptile and amphibian survey, a red squirrel assessment, a breeding bird survey and European Protected Species (EPS) survey. Phase I vegetation surveys identifying semi-natural vegetation and other wildlife habitats and botanical interest surveys had previously been carried out and these were also considered within the Environmental Statement.
74. The Environmental Statement found that the impact of the proposal on ecology and nature conservation during the felling and site restoration phase will be slightly negative due mainly to the disturbance caused during track construction. The impact will become positive as newly restored and created areas of blanket bog, heathland and native woodland begin to develop.
75. The Environmental Statement identifies that the main habitat that would be affected by the proposed felling is conifer woodland. It states that this habitat is generally of low ecological value at Threestoneburn and as a result the loss of the habitat associated with the proposed tree felling will not in itself result in a significant impact on the environment. The woodland does however support populations of red squirrels and two species of birds protected under Schedule 1 of the Wildlife and Countryside Act 1981 (goshawk and crossbill). The impact on these species is considered in paragraph 73. The Environmental Statement found that overall the ecological value of the site would increase as the new native woodland area and restored raised bog and upland heath develops that.
76. The Environmental Statement found that the site might be considered to be of regional importance for its breeding populations of some nationally scarce, declining or threaten species but that it was unlikely that the site would be ranked as nationally important for these species. However, the Breeding Birds Survey undertaken as part of the Environmental Statement (Appendix 4) also states that the woodland part of the site has provided opportunities for a succession of bird communities and the present communities represent a phase of shifting fortunes of individual species, some of which may have just arrived.
77. The survey highlighted the presence of two Schedule 1 breeding species: goshawk and crossbill. The operational effects on the regional goshawk and crossbill populations were not thought to be significant. It was considered that these species would relocate to suitable new habitat located within the vicinity of the site. Forest operations would also temporarily displace song thrush, buzzard and sparrowhawks from parts of the site, but these species and other bird populations associated with open and deciduous woodland, would increase as the native woodland planting was carried out.
78. It was considered unlikely that the felling and site restoration phase of the project would have an adverse impact on moorland bird populations. The Environmental Statement indicated that the proposals for restoration of a mosaic

of moorland habitats was likely to benefit a range of species that are known to frequent the locality, these included snipe (SAP), golden plover, curlew, lapwing (all listed in the Species Action Plan for Upland Waders), black grouse (a SAP species), hen harrier, short-eared owl, merlin and peregrine.

79. The Mammal species surveys included in the Environmental Statement (Appendix 5) found evidence of the presence of European Protected Species (EPS). The open space in the woodland being used by bats for foraging. There was no evidence of roosting in the concrete nest boxes at the time of survey but they may be using the buildings at Threestoneburn House. There are few suitable nesting or roosting locations within the existing forest but it is likely that the site may form part of a network of habitats that provide potential foraging habitats for bats. There was evidence of feeding and residence of red squirrels throughout the woodland. Red Squirrels are dealt with in paragraphs 82 to 88. The mammal survey also found evidence of otters which indicates that they are present but not resident to the site. The survey recognised that these species are protected and that work would need to be altered to accommodate them and/or a licence obtained if their presence was confirmed on site at time of working. Badger setts have also been found on the site (Appendix II to the ES Annex) of the Environmental Statement, but there was no evidence of occupation at time of survey. These setts would be checked at time of work. If required a licence will be applied for from Natural England to work in the area around the sets.
80. The planting of new native woodland areas is proposed in addition to the plan to restore the areas of blanket bog and grass heathlands. The restoration of these habitats would create a mosaic of new grassland, heath and mire vegetation together with woodland edge habitats. These measures will provide habitats for moorland bird species and increase the area of sheltered open space and woodland edge creating new habitat for species including black grouse.
81. The proposed new tree planting would comprise of locally native species that would contribute to the county Biodiversity Action Plan (BAP) targets for native woodland creation and provide a valuable habitat in their own right. The locally native species are more likely to be adapted to the local environment, however it is now advisable to take future climate change scenarios into account when planting new woodlands. It would therefore be appropriate to include a broad mix of tree species, including provenances taken from seed zones that have climates similar to that predicted by the UK Climate Impacts Programme 2009¹⁰ for the Cheviots.
82. A number of the consultation responses focused on the loss of woodland and the associated impact on wildlife, habitat and flora. These are primarily concerned with the impact on the red squirrel population which is a nationally important species (see paragraph 85). However, the evidence from the Environmental Statement, taking into account the proposed mitigation measures, is that most, if not, all species currently present will continue to be present and most if not all will, in due course, see a slight improvement in the quality of the habitat available to them. The process of reducing the woodland area and restoring open ground habitats will however see a shift from woodland species to those associated with open ground.

¹⁰ www.gos.gov.uk/nestore/docs/envandrural/pip/ukcip1.pdf

83. The proposal will result in the loss of 568 hectares of conifer woodland. Most of the area to be felled is composed of a single exotic species and is not representative of locally native woodland. The new native woodlands that are to be planted at Threestoneburn (and elsewhere in NNP) are expected to be of higher conservation value than the conifer plantation being removed. As the remaining habitats and proposed new woodland planting develops and matures it is likely that the quality of the woodland habitat will improve and the number of species of birds, animals and insects breeding and feeding in the woodlands will increase.
84. The proposed deforestation project includes the planting of new woodland at Kirknewton Torrs, Langlee Ford and Wooler Common (Appendix V to the ES Annex) which will lead to a net increase in native woodland within the NNP. Details of the proposed new plantings were included in the Environmental Statement and considered as part of the overall Threestoneburn project. The environmental impact of the proposed new woodlands was found to be positive as they would contribute to county Biodiversity Action Plan (BAP) targets for native woodland creation and provide a valuable habitat in their own right.
85. Having considered all the evidence and information provided together with the consultation responses Forestry Commission considers that the proposed deforestation would not result in a significant negative impact on the ecology and nature conservation of the area.

Red Squirrels

86. Although not a designated red squirrel reserve, the Environmental Statement found that the forest did contain a resident population. The population was estimated to be approximately 69 red squirrels in 2007, although the carrying capacity would vary between 10 animals in a poor seed year, 62 with an average seed crop and 113 in a mast year (section 3 in Appendix 7 to the ES July 2007). The Environmental Statement's Red Squirrel Conservation Assessment (report by Dr P.W.W Lurz, ES appendix 7) found that during any restructuring at Threestoneburn there would be a period with no trees of seed bearing age and that red squirrels would therefore have to emigrate from the forest along the wooded watercourse to the east.
87. The report on the original proposal and its effect on the resident red squirrel population was not able to identify any realistic and feasible management option to allow the retention of a viable red squirrel population at Threestoneburn Forest. The three main options for red squirrel management and intervention at Threestoneburn were:
- Allowing natural migration.
 - Capture for a captive breeding population.
 - Capture for translocation.

Each of these options had associated issues that would need to be considered including: animal welfare, release sites, speed of dispersal and annual seed crop patterns. These issues were all limiting to the feasibility or likely success of the mitigation proposals.

88. One of the significant issues raised during the consultation process was concern over the loss of habitat and the survival of the red squirrel population at Threestoneburn. This issue was raised by local groups, individuals, NNPA and the NWT. Consultation responses highlighted the problems associated with the original project which involved deforestation over a three year period, and Forestry Commission concluded that a revised proposal involving a longer phased felling or an alternative method of red squirrel emigration would need to be considered.
89. The mitigation proposals contained in the ES Annex (Appendix III) were prepared in response to FC's request for further information after the first public consultation. The revised proposals were welcomed in their consultation reply by the NNPA and noted by Natural England. Whilst they found that Threestoneburn was a poor candidate for a red squirrel conservation area and the proposals were felt to include the necessary mitigating actions to maintain a local red squirrel population at Threestoneburn.
90. The revised plan proposed that hazel would be planted early in the replanting programme to provide a food source for the resident red population. The hazel was expected to provide a food source within 8-9 years. Following the replanting programme the restructured forest at Threestoneburn would have an average carrying a capacity of 21 red squirrels. The revised plan also recognises that as the felling progressed the lack of mature trees would severely limit nesting opportunities and therefore artificial nest boxes were included in the proposal.

The Appendix III to the ES Annex report proposed the following actions to assist the red squirrels:

- Including hazel (15% of the replanted area, with an overall total proportion of 30% when understorey planting is also considered) in native woodland plantings.
 - Planting of shrubs species to provide secondary food source.
 - Include Scots Pine in planting to add diversity to food source.
 - Provide nest boxes for breeding.
 - Provide stepping stones (through tree planting) to facilitate movement between isolated woodland blocks.
91. The report at Appendix III also recognised that the success of the red squirrel population would be dependent on the level of grey squirrel control in the surrounding area. Grey squirrels are present in the local area and will spread into the forest unless controlled. The applicant indicated that they are able and willing to undertake the work needed to control the grey squirrels.
92. Having considered all the factors associated with the potential impact of the project on red squirrels Forestry Commission considered that the project could have a moderately significant adverse impact on the red squirrel population. However taking into account the proposed mitigation measures Forestry Commission considers that the project will have a slightly adverse impact on the red squirrel population. In reaching this conclusion a major factor taken into consideration was the Environmental Statement finding that during any normal forestry restructuring at Threestoneburn there would inevitably be a period with no trees of seed bearing age and that red squirrels would therefore have to emigrate from the forest along the wooded watercourse to the east.

Social and Economic Issues

93. The Environmental Statement considered the potential social and economic impacts of the project at a local and regional scale. During the felling and site restoration phase of the project, activities including trees felling, road construction and restoration of open ground were expected to lead to between 15 and 20 jobs on the site. Once the site had been restored to open moorland it would be managed by the estates existing staff of shepherds and gamekeepers, helping to secure their employment into the future.
94. The timber produced during the felling and site restoration phase would be sold into a range of local and regional timber markets. The Environmental Statement found that, given the extended 12 year felling period, the volume of timber produced would be small relative to the size of the markets and would be easily absorbed without impacting on other timber growers.
95. The Environmental Statement also considered the impact of the project on public access and recreation. The present levels of public access are very low due to the remote nature of the forest and the limited access opportunities. Although Threestoneburn Forest was dedicated as open access land under the Countryside Rights of Way Act (2000) access was in practice, due to the dense covering of trees, limited to the roads and forest rides. Threestoneburn Forest also contains two public rights of way which pass through the site.
96. During the felling and site restoration phase it was proposed that the access land and public rights of way would be kept open other than when temporary closures were required for the management of health and safety. After the felling and site restoration phase the increased area of open ground and broadleaved woodland would significantly improve access provision, opening up new routes for climbing the nearby Hedgehope and Dunmoor hills. A re-routing of the bridleway onto a grass track that would provide a better surface for horse riders and avoid an area of blanket bog was also proposed.
97. Very few consultees commented directly on the social and economic impacts of the project. One consultee was concerned about the loss of productive conifer plantation and the impact this would have on future forestry employment. A number of consultees expressed concern about the impact timber lorries would have on other road users, including recreational users. However as a result of the revised proposal to extract the timber along a new route via South Middleton and expansion of the project timescale from three to 12 years the predicted impact on other road users was much reduced. This issue is also considered under the Transport and Traffic section (paragraphs 124-137).
98. Having considered all the social and economic factors associated with the project Forestry Commission considers that taking into account the proposed mitigation measures the project will not have a significant environmental impact on social and economic factors.

Landscape

99. The ES included an assessment of the impacts the project would have on the landscape. This included an assessment of the visual effects of deforestation through use and analysis of a number of photomontages showing the most significant features in the landscape. The ES found that because of the scale of the landscape and the forests location to the east of Hedgehope, Dunmoor and Cunyan Crag the removal of the forest would not be immediately apparent in the landscape. Some closer views to the forest would be altered, but the impact would be positive and the contrasting vegetation patterns either side of the fence line up to the summit of Hedgehope would be addressed by the changing land use, fence realignment and the introduction of a similar management regime across either side of the previous fence line.
100. However, Natural England commented that the initial landscape assessment had not been detailed enough and requested a more detailed assessment that took account of the local landscape character and designations.
101. A more detailed Landscape Appraisal was submitted as part of the ES Annex (Appendix IV). The appraisal considered the current landscape setting and how this would change as the trees were felled and a smaller area of woodland replanted. The appraisal also considered the compensatory planting planned at Kirknewton Torrs,
102. The Landscape Appraisal found that the plantation was not prominent in the wider landscape because of landform and vegetation patterns surrounding the forest. The main visual issue from middle and distant views was the moorland vegetation change between Threestoneburn and the adjoining estate on Hedgehope Hill. The proposal to clear fell Threestoneburn was expected to have mainly local effects in the landscape, including the temporary appearance of brash and upgraded roads, whilst harvesting takes place. The appraisal demonstrated that the proposal's impacts would be moderately adverse during the felling phase, but as the planted broadleaved trees matured they would become beneficial to the landscape.
103. Mitigation measures were proposed that would reduce the visual effects of the brash and encourage re-colonisation of the moorland vegetation on the harvested site, and extraction tracks were to be allowed to grass over to limit their visual effect. The landscape appraisal found that the proposal to establish broadleaved woodland on part of the site and restore the remainder to moorland would result in a new woodland that was more in character with other woodlands in the vicinity.
104. Two organisations commented on the landscape impact of the project. Both parties indicated that the removal would have a positive impact on the character of the landscape in the Cheviots and would result in some specific landscape improvements, including the removal of the straight fence lines seen on Hedgehope Hill when viewed from afar. NNPA welcomed the amendments to the planting proposals at Kirknewton Torrs which took the local feral goat population into consideration.
105. NNPA submitted comments in September 2009 concerning the proposed felling sequence and the effect it would have on the landscape. After felling of the initial coupes during the felling and site restoration phase the main landscape feature

seen from the public roads would have been a grey and brown coloured felling face¹¹ above Cunyan Crags and the isolated felling coupe below Hedgehope Hill which would have been visible from the public road at Powburn. There was also a risk that if the felling of the later coupes was delayed the most visible high elevation coupes below Hedgehope Hill could be retained as a hanging band of trees for a longer period than planned, resulting in a negative impact on the landscape.

106. As a result of NNPA's comments the felling sequence and coupe boundaries were altered in order to bring felling of the coupe below Hedgehope forward and avoid exposing 'brown edges' by felling to existing rides where the trees at the ride edge would have live braches on the lower stem.
107. The potential landscape impact of the timber haulage route via South Middleton was considered within Appendix 18B in the Additional Information to the ES Annex. This assessment found that the route was not prominent in the wider landscape because of landform and screening by existing woodland, and that the visual impact would reduce as the road would be allowed to grass over after the felling and site restoration phase.
108. In response to the third consultation Natural England raised concerns over the standard of the landscape appraisal within Appendix 18B (supplied with Additional Information to the ES Annex), specifically relating to the new road route via South Middleton Farm. However NNPA advised that in their view the assessment of the impact of the haulage route via South Middleton on the landscape had been adequate and was satisfactory with reference to NNPA's Planning Policy 20: Landscape Quality and Character.
109. In their response to the third consultation NNPA advised that whilst the construction and upgrading of the track between Threestoneburn and South Middleton would have a significant adverse impact on the landscape over the felling period, they felt this would be more than offset by the benefits of felling and restoration, to native woodland and moorland, of Threestoneburn. NNPA also advised that they had included a condition requiring the soiling over and re-establishment of moorland vegetation after the period of timber extraction had been completed.
110. Two consultees expressed concern about the long-term impact on the landscape of the existing and new forest roads constructed to extract the timber from the site. The proposal included mitigation measures involving removing the tracks reinstating the ground within the former woodland and grassing the upgraded access road from South Middleton, after it has been used to extract the timber from the proposed felling site. After the felling and site restoration phase the most visible sections of road are likely to be the high elevation sections below Hedgehope Hill. However a detailed assessment of the landscape impact of the high level road line would not be possible until the surrounding trees have been felled. It is therefore proposed that as a condition of consent the applicant should carry out a detailed assessment after the felling phase in order to allow the applicant and Forestry Commission to ensure that the most appropriate

¹¹ Where the boundary of a felling coupe cuts through a mature stand of trees the retained face of trees exposed generally wouldn't have live green branches down to the ground. As result the exposed face will have a grey brown colour due to the absence of live branches on the lower part of the trees stems.

decommissioning strategy is followed, ensuring any potential long term negative impacts on the landscape is minimised.

111. Forestry Commission has considered the issues raised in relation to the proposal's impacts on landscape. The analysis of the evidence indicates that whilst there will be a moderately adverse impact on the local landscape during the felling and site restoration phase the impacts are not considered to be significant because they are localised and will reduce over time as the new tree planting and restored moorland vegetation matures, and the visual impact of extraction tracks is reduced by reinstatement of moorland vegetation after timber extraction. Therefore the Forestry Commission considers that the project will not have a significantly adverse impact on the landscape.

Cultural Heritage

112. The Environmental Statement considered the potential impact of the proposal on the cultural heritage of the site. Cultural heritage was defined as the range of features that have resulted from man's past use of the landscape, including buildings, earthworks, archaeological remains and old field boundaries.
113. The site was found to contain three Scheduled Monuments, four unscheduled sites and the crash site of a WWII bomber. The applicant has identified the Scheduled Ancient Monuments (SAMs) in the ES (chapter 11.2) and detailed them and other sites of archaeology and cultural heritage in the ES (Appendix 8). The area to the north of Threestoneburn is noted for its high density of Neolithic archaeology and medieval remains. These are largely located outside the forest, were not initially considered to be relevant and during the original consultations no responses were made on this issue.
114. The initial ES stated that all impacts would be mitigated to a negligible level by avoidance of all known features of interest and that it would be possible to carry out the proposed deforestation without any detrimental effect on the known sites.
115. Following comments from NCC Highways Department during the second consultation the route proposed for timber transport was changed to the access road via South Middleton Farm. A map showing all the known archaeology in the vicinity of the proposed access route was submitted as Additional Information to the ES Annex (section 11, Map 1). The Additional Information to the ES Annex stated that upgrading the existing track and the construction of a new section of road to connect to the existing forest road network would avoid all the archaeological sites.
116. A number of responses to the third consultation raised concern about the potential impact on archaeology. They highlighted the lack of a suitable assessment of the impact on the cultural heritage of the area for both known and unknown sites along the proposed route for the new roads. One consultee felt that the current assessments did not conform to current English Heritage guidelines and was insufficient to allow the construction of the road or the deforestation at Threestoneburn. They also stated that the ES should consider the long term management required to safeguard any features that could be exposed.

117. In their response, English Heritage advised that a desk exercise should be completed by an appropriate expert state along with an on-site evaluation of the construction corridor, to a brief agreed with the NNPA Archaeologist, to establish the true extent of sites affected. They also advised that the brief should detail the mitigation that would be carried out if cultural heritage assets were discovered.
118. Specialist advice was sought on these issues from Forestry Commission Archaeologist Mr Tim Yarnell. Following his input the FC contacted NNPA's archaeologist who produced a brief so that the applicant could prepare an assessment of the potential impact and associated mitigating activities, of the new route on archaeology and cultural heritage. This involved the applicant carrying out a desktop assessment plus an onsite evaluation (as per English Heritage request) .The NNPA archaeologist also advised that an 'archaeological watching brief' would be required during the period of road construction.
119. In addition to considerations under the EIA (Forestry) Regulations 1999 the construction and upgrading of the access route required that NNPA were notified under the [Town and Country Planning \(General Permitted Development\) Order 1995](#). As a result of the GPD process NNPA applied a number of conditions. These included a requirement for an archaeological watching brief to be prepared, together with appropriate mitigation measures setting out the course of action to be taken if unknown archaeological remains were uncovered when the new road was being constructed. The NNPA archaeologist confirmed that this approach was to the standards laid out in Planning Policy Statement 5: Planning for the Historic Environment (PPS5).
120. A survey of the archaeology of Threestoneburn was compiled on behalf of applicant by Archaeology Research Services Limited (An Archaeological Survey of Threestoneburn Forest ARS Ltd Report 2011/3) in February 2011 to the brief prepared by NNPA. The assessment clarified the nature of the heritage assets and allowed the specific quantification and qualification of the nature and the extent of archaeological features within the forest, along the route of the proposed access road and around a 0.5km buffer from the area of direct impact. A total of 51 sites were identified, including eight Scheduled Ancient Monuments, one listed building and 42 sites of regional and local significance.
121. The survey found that the access road would have an impact on two sites: a Bronze Age cairnfield and a field boundary of possible prehistoric date. And that the tree felling could have an impact on a Scheduled cairnfield of probable Bronze Age date, as well as two other cairns. The replanting in the riparian zone could have an impact on the Scheduled Threestoneburn stone circle and a nearby prehistoric hut circle. In addition the project could have an impact upon so far unidentified heritage assets along the line of the road corridor. However, it was stated that with a programme of professional archaeological recording and the associated information obtained would mitigate against any partial loss of these features.
122. The survey also identified that the project's impact on the setting of many of the features would be beneficial. In particular undertaking the partial replanting of the riparian zone with native tree species, in consultation with professional archaeologists, would ensure that the solstitial alignment between the Threestoneburn stone circle and the Cheviot was re-established. At the present

time it is obscured by the existing forest vegetation. In summary the benefits of the work included:

- The opening up of lines of sight.
- Removal of tree cover from archaeological features, improving their setting and accurate recording of their position and condition.
- Allowing better management of the landscape in the future.

123. The Archaeological Survey included detailed schemes of work and prescriptions for the mitigation required for each section of the access road (Section 5.2), the borrow pit (Section 5.3), tree felling and clearance (Section 5.4) and the replanting scheme (Section 5.5). The prescriptions included the excavation of small evaluation trenches in advance of the road construction to ascertain the nature of the stratigraphy and inform the watching brief process prior to commencement. An archaeological watching brief would be maintained in all cases where there was the potential to encounter any archaeological features. In the case of the tree felling, monitoring of the Bronze Age cairnfield and two other cairns would be undertaken immediately prior to and during the felling. The location of known archaeological sites would be communicated to the tree felling contractors and suitable physical barriers placed around them. There would then be systematic monitoring of areas cleared of tree cover to inspect the exposed ground surface for hitherto unrecorded archaeological remains. Replanting would also be informed by archaeological considerations and the lines of sight from the Cheviot, for alignment of the setting sun on the solstices.
124. The survey report also highlighted the potential for a community based archaeological project based on the investigation and recording of archaeological remains within the wider landscape around Threestoneburn Forest.
125. English Heritage confirmed that the report was satisfactory and advised that a mitigation strategy for any articles found during work should be prepared. A Written Scheme of Investigation, including a mitigation strategy, was submitted by the applicant on 25th February 2011 as an appendix to archaeological survey. English Heritage confirmed that that this was satisfactory on 4th March 2011.
126. To ensure that the archaeological features of interest within Threestoneburn are protected after the felling and restoration phase Forestry Commission considers that it would be appropriate for the applicant to produce and implement a long term management plan for the heritage assets. Because many of the assets are within the forested area it would not have been possible to produce a long term management plan until the tree felling has taken place. Therefore a requirement to produce and implement of a long-term management plan for the heritage assets in Threestoneburn would be included as a condition of EIA consent.
127. The Forestry Commission has considered the issues raised in relation to the proposal's impacts on cultural heritage. Analysis of the evidence and extensive consultation responses indicated that there was the potential for adverse impacts on the archaeology during the felling and site restoration phase. However the detailed mitigation measures proposed by the applicant will ensure that the archaeological features are adequately protected and in many cases enhanced. In the long-term the project will have a positive impact on cultural heritage as the setting of many of the archaeological features will be enhanced and the requirement to produce a long-term management plan will help to safeguard

them into the future. As a result Forestry Commission considers that the project will not have any significant negative impacts on cultural heritage.

Transport and Traffic

128. Threestoneburn can be accessed along a number of minor unclassified county roads and private tracks running between the forest and the A697 south of Wooler. As part of the Environmental Statement the applicant considered the potential impacts and effects of the traffic associated with the proposed deforestation of Threestoneburn. The main impact was found to be due to the movement of timber and wood residues on heavy goods vehicles along the minor county roads in Ingram Valley. The impact was found to be localised, resulting in some disturbance to a small number of properties along the route in the short term as heavy vehicle movements would cease soon after the felling phase had been completed. The Environmental Statement considered three alternative timber haulage routes with the preferred route being via Reaveley and Brandon Farms, then joining the A697 at Brandon Whitehouse.
129. There were a number of consultation responses on the issue of timber transport. Local residents of the Ingram Valley raised their concerns about the impact of the proposal on the other wise quite local and tourist route along the valley road. Their concerns were about the disturbance and potential health and safety risks associated with the high number of timber lorries proposed over the three year felling period. A number of consultation responses argued for alternative routes to be used, but there was no consensus as to the most suitable route. A number of local residents also expressed concerns about the standard of the A697 junction at Brandon Cottages, arguing that this wasn't safe for use by timber traffic.
130. The route preferred by the Ingram Valley residents (represented by Ingram Parish Council), alternative 3 from the Environmental Statement, ran north from Threestoneburn via South Middleton. However, the Environmental Statement identified that a considerable amount of upgrading and construction of new road within the NNP would be required and as a result the route was not preferred.
131. NNPA Members considered the Threestoneburn project at their meeting on 20th November 2008. In NNPA's subsequent consultation response they expressed their concern about the impact of the timber traffic on local residents along the preferred route via Reaveley and Brandon.
132. In response to the concerns raised by a number of consultees, Forestry Commission requested further information from the applicant so that the feasibility and all the potential environmental impacts of the three alternative routes was more thoroughly assessed. The further information submitted in June 2009, Appendix VII of the ES Annex. This included a more detailed consideration of the impacts and mitigation options for the three alternative routes. The assessment also took into account the extension to the project felling period from three to 12 years. This had the effect of spreading timber transport out over a much longer period significantly reducing the average number of lorry movements per week from 40 to 10. Following this assessment the applicant approached NCC's Highways department to seek their view on the proposed route. The local Highways Manager confirmed that on the basis of an average of

around ten lorries per week that he was content with the proposed route to the A697 via Reaveley and Brandon.

133. A range of mitigation measures to reduce the impact of timber traffic were proposed and are listed in section 12.4 of Appendix VII to the ES Annex to the Environmental Statement. The measures included the setting up of a liaison group with the Ingram Parish Council to facilitate communication as the project progressed.
134. In March 2010 NCC's Highways department belatedly raised an objection, on the grounds of safety, to the preferred route proposed for the timber traffic from Threestoneburn. In particular NCC expressed their concerns about additional heavy vehicles that would be using the junction of the C54 and the A697 at Brandon Cottages. They advised that the vertical sight lines from the junction between the cottages were insufficient for the speeds travelled by vehicles on the A697 and that there was inadequate road width for lorries to turn onto A697 when turning onto the north carriageway. They also advised that the road between Reverley and Calder was not capable of carrying heavy lorries without damage and requested that the applicant look at the South Middleton option because the route was more suitable.
135. After considering the response from NCC the applicant assessed the options for improving C54/A697 the road junction. However, due to the prohibitive cost and the need to utilise privately owned land which would not have been available to them they elected to look again at the northern route via South Middleton.
136. The applicant subsequently submitted Additional Information to the ES Annex in June 2010 including a revised proposal to build a new road to Threestoneburn forest from South Middleton Farm. This route required the upgrading of an existing track and building a new road across open ground and into the forest to link up with the existing forest road network. Prior to submitting this further information the revised proposal was presented to the NNPA as a notification under the General Permitted Development Order 1995. Although the proposed access route was not the NNPA's preferred route they decided to support it with some conditions, recognised the overriding safety concerns associated with the C54/A697 options.
137. The route of the track being upgraded and the new road construction between Threestoneburn and South Middleton was found to involve passing close to known archaeological sites. Consultees also raised concerns about the possibility of disturbing unknown sites during the construction phase. These issues are considered in the section of this document on Cultural Heritage (paragraphs 108-123).
138. The Additional Information to the ES Annex submitted in June 2010 also included proposals to upgrade and construct new internal forest roads to connect the new access route to the existing road network in Threestoneburn forest. The application proposed to re-open and expand an old quarry site to provide road stone for this. Natural England were content with the proposals and advised the new roads the quarries should be left 'raw' to allow them to re-colonise naturally.
139. Two consultation responses expressed concerns about the potential disturbance resulting from road construction operations, the timber traffic accessing the site

and the noise associated with tree felling and site restoration operations. In order to mitigate the potential for disturbance from these activities conditions would be attached to EIA consent, restricting the hours of operation for mechanised operations in proximity of Threestoneburn house and timber traffic along the main access route via South Middleton.

140. The issue of decommissioning some of the higher elevation forest roads was raised by one consultee. This was raised in connection with the desire to reduce access to and disturbance of the open ground after removal of the trees to restore the moorland habitat. The applicant proposed, in section 3.1.d of Appendix IV of the ES Annex, to leave the tracks to grass over after the felling and site restoration phase with future use to be limited to Lilburn Estate light vehicles for moorland management purposes.
141. As a result of the consultation and the detailed assessments and appraisal of access route options the applicant submitted further information based on a revised proposal to use the northerly access route via South Middleton (Additional Information to the ES Annex, submitted in June 2010). Whilst this route will lead to some short term landscape impacts the disturbance and risks associated with timber traffic will be much reduced compared to the routes through the Ingram Valley. The route was also supported by NCC and accepted by the NNPA. Having considered the range of transport and traffic issues and options available to the applicant, Forestry Commission considers that as a result of the route selected and mitigation proposed by the applicant the environmental impact will not be significant.

Carbon

142. The potential reduction in the long term storage and sequestration of carbon potentially resulting from tree felling at Threestoneburn was considered by the Environmental Statement. Appendix 10 included an assessment of the carbon balances of the proposed project. The total amount of carbon dioxide currently sequestered by the forest at Threestoneburn was found to be 150,000 tonnes. If the forest was retained and replanted in line with current environmental standards the study found that the potential long term average CO₂ storage would be around 130,000 tonnes. If the entire forest was felled and not replanted the study found that there would be a reduction in carbon storage of around 150,000 tonnes.
143. The Environmental Statement also found that the loss of carbon from soil disturbance was a significant risk. A number of measures were proposed to mitigate against possible adverse effects including:
- Retaining root plates to minimise ground disturbance during harvesting.
 - Phased felling, brash recovery and mulching.
 - Using low impact harvesting techniques.
 - Blocking drains after felling to raise water tables and reduce the risk oxidation as a result of peat drying out.
144. In addition to restoring the bog habitat which will secure soil carbon the Environmental Statement proposed to mitigate the loss of forest carbon storage by planting new areas of woodland. The initial submission included mitigation tree planting at Threestoneburn (70 hectares) and at a 267 hectare location in

Scotland. The planting at Threestoneburn was proposed to be mainly broadleaved whilst the tree planting in Scotland was to be predominately conifer. The long term average CO₂ storage capacity of the tree planting on the two sites was estimated to be 10,000 tonnes and 90,000 tonnes respectively.

145. The Environmental Statement argued that whilst there would be a reduction in long term carbon storage this was inevitable in order to restore the open ground habitats, which in itself would be an environmental benefit.
146. The removal of the conifers and the subsequent restocking with native broadleaves was welcomed by many consultees. However a number of respondents were concerned about the distant location of some of the mitigation planting and about the loss of woodland as a carbon store. Respondents were also concerned that the compensatory planting should not have an adverse effect on biodiversity at that location.
147. The applicant submitted further information (the ES Annex) indicating an increased area of broadleaved replanting, totalling 158.5 hectares at Threestoneburn and on nearby land within NNP that was owned by the applicant. The further information also included a commitment to identify and plant an additional 170 hectares of compensatory planting that would include a significant proportion of productive conifers for carbon sequestration. The total replanting area proposed was 328.5 hectares. This compared to the existing forest area at Threestoneburn of 568 hectares.
148. A substantial area of the existing forest has been planted on deep peat soils which were previously blanket bog. The Environment Statement (6.3.1) found that blanket bog, which is a priority habitat within the UK Biodiversity Action Plan forms approximately 40% of the Threestoneburn site. As part of the deforestation and habitat restoration proposals (Appendix 11) it was proposed to restore an area of 232 hectares of planted blanket bog to modified bog.
149. The ES Annex explained that as part of a 'normal' restructuring of Threestoneburn forest it would be good practice and reasonable not to replant the 232 hectares of forest on blanket bog. On this basis the analysis in the ES Annex also made a case that as a result the total area of replanting proposed in the proposal - 328.5 hectares - equated to the area that would have been restocked in a 'normal' restructuring of Threestoneburn forest with re-planting that meet modern environmental standards.
150. Whilst there are no definitive rules relating to the replanting of conifer forests on deep peat soils, it is common practice to either reduce the area at the time of replanting the forest or avoid planting deep peat areas completely, particularly where it is continuous with and or part of the same system as an adjoining blanket bog system. The main driver for this is that blanket bog is a priority habitat and is listed on Annex 1 to the EC Habitats Directive. As a result there are strong biodiversity arguments for not replanting the currently forested blanket bog system at Threestoneburn. As such it would not be appropriate to require compensatory planting or carbon storage mitigation for the part of the forest that would not normally have be replanted had a second rotation forest been proposed.

151. When allowance is made for the overriding biodiversity benefits of restoring the 232 hectares of currently forested blanket bog the proposed replanting area (328.5 ha) equates closely, in area terms, to the area that would normally have been restocked had a second rotation been planned for the forest. Because the proposal states that the replanting will include a significant proportion of productive conifers for carbon sequestration the carbon storage of the replanting will be similar to that which would have been achieved in the second rotation of Threestoneburn forest.
152. Some consultees raised concerns about the loss of woodland cover from the area and felt that the compensatory replanting should take place within Northumberland, ideally the NNPA, in order to compensate for the loss of woodland habitat locally. A number of consultees have also highlighted the reduction in the volumes of timber that would be available to the local timber industry in the future. Their concern was particularly related to the initial proposal for mitigation planting in Scotland. Whilst this is a socio-economic impact it would be possible to address both the above concerns through conditions requiring the compensatory planting to take place within an appropriate distance of Threestoneburn.
153. Analysis of the evidence included in the Environmental Statement together with the consultation responses indicates that the environmental impacts associated with the potential loss of long term carbon storage arising from the proposed deforestation will be negligible when compared to other likely scenarios for the future management of Threestoneburn forest. The applicant has indicated the location of the restocking on the site itself in the local area and made a commitment to identify sites for a further 170 hectares within the first five years. Nevertheless it would be appropriate to include as a condition of any consent, a requirement to clarify and specify the compensatory planting.

Interaction between Environmental Factors

154. The felling and site restoration phase will lead to a number of short-term adverse impacts on the local environment. These include moderately adverse impacts on the landscape and slightly adverse impacts as a result of timber traffic and on ecology and nature conservation, including disturbance to wildlife, such as red squirrels. Taken individually the Forestry Commission do not consider these impacts to be significant.
155. The evidence from the Forestry Commission's analysis of the Environmental Statement and consultation responses indicates that during the felling and site restoration phase the impacts on other aspects of the environment, including geology, hydrology, soils and water, social and economic issues and cultural heritage will be either positive, neutral or negligible.
156. In considering the interactions between these different environmental factors the Forestry Commission has taken into account the relative magnitude of the impacts and the potential for cumulative effects to take place. A number of the predicted impacts will occur at the same time and affect the same geographical locations. These include the loss of wildlife habitats through felling and disturbance to the remaining forest due to mechanised operations during the felling phase. There will also be some short term cumulative impacts on local residents as they will see adverse effects on the landscape and experience

disturbance as a result of the mechanised operations and timber traffic. However, as most of the felling and restoration phase impacts will be at a low level and will be short term in nature, the Forestry Commission do not consider the combined effect of these have a significant impact.

157. The long term environmental impacts of the project after the felling and site restoration phase were generally found to be positive. There will be significant interaction between the impacts in areas such as landscape, ecology and nature conservation and cultural heritage. The impact of removing the existing trees and restoring open ground habitats in certain areas will also result in a beneficial effect on the landscape and improve the setting of many of the archaeological features of interest.
158. The long term impacts as a result of reduced carbon storage and the impact on red squirrel populations were forecast to be slightly adverse, but in the Forestry Commission's opinion, not significant. Both these long term impacts were associated with the redesign of the forest and landscape after felling.
159. The potential loss of carbon storage would largely be mitigated by compensatory conifer planting within 160km of Threestoneburn forest. And whilst there would be potential to further mitigate this impact by carrying out conifer tree planting on the Threestoneburn site this would have reduced the landscape and biodiversity benefits associated with the proposed project and would not have been supported by the majority of consultees.
160. The ES found that as a result of the current age structure and species make up of Threestoneburn forest, the red squirrel carrying capacity of the forest over the next 20 years would decline dramatically as scheduled felling took place. The ES also found that this would not be significantly affected by the amount of planned conifer replanting, due to the time delay before replanted trees started to produce cones and seed. Therefore the long term impact of the proposed deforestation project on red squirrels would be similar to the impact that would have resulted from a conventional forest restructuring. In terms of interactions with other environmental factors, the landscape and biodiversity benefits of the project are largely associated with the reduction in forest area and removal of conifers from Threestoneburn forest. If the forest area being replanted had been increased and conifers included it would not have mitigated the impact on red squirrels for at least 20 years, but would have reduced the positive impact of the project on landscape and other aspects of ecology and nature conservation.
161. Most of the long term, post felling and site restoration phase, environmental impacts are predicted to be either neutral or positive. Forestry Commission considers that the positive impacts on ecology and nature conservation and landscape outweigh the negative impacts on red squirrels and carbon, particularly as it would be difficult to address these adverse impacts without significantly reducing the positive impacts of the project. Therefore, Forestry Commission considers that the overall long term environmental impacts of the project would not be significant.

Summary and Conclusions

162. In considering whether to grant consent for the proposed project the Forestry Commission's primary concern has been to establish whether the project would result in any significant environmental impacts on the factors listed in paragraph 54.
163. In evaluating the effects of the proposed deforestation and development the Forestry Commission has used the criteria listed in paragraph 56 and 57.
164. The information contained in the Environmental Statement has been examined in detail, consultees responses have been investigated and expert advisors engaged to resolve complex issues and help determine whether evidence presented by the applicant in the Environmental Statement was fit for purpose. The conclusion of this process was that the evidence presented in the Environmental Statement was sound and of an adequate standard on which to base consideration of the impacts of the project.
165. The environmental impacts resulting from both the felling and post felling phase of the project were considered in detail.
166. In cases where the adverse environmental impacts of the project may be considered significant, in terms of EIA (Forestry) Regulations 1999, it would be necessary to very carefully consider the positive impacts of the project in order to determine whether the benefits outweighed the negative impacts. However, in the case of this project at Threestoneburn the overall environmental impact of the project is not considered significant in terms of EIA (Forestry) Regulations 1999. Nevertheless, analysis of the ES and consultation responses established that the deforestation will provide considerable net benefits through improved landscape, habitat restoration and creation, better access opportunities and by enhancing the settings for the many archaeological features found around Threestoneburn.

Forestry Commission Determination

167. Having considered the Environmental Statement, national and regional policy contexts, advice received from statutory and other bodies and the views of consultees **the Forestry Commission determined to approve the application for consent subject to the conditions below.**

Conditions of Consent

General

168. Condition **(a)**: The proposals hereby permitted shall be commenced before the expiration of two years from the date of this permission.

Reason: To ensure the development is commenced within a reasonable period of time from the date of the consent.

169. Condition **(b)**: No work shall be carried out in relation to the relevant project after the expiration of ten years from the date of this permission.

Reason: To ensure the project is completed within a reasonable period of time from the date of the permission. Some of the environmental impacts are greatest during the felling and site restoration phase and a number of the mitigation measures will not deliver benefits until the development is complete.

170. **Information note:** The final phase of felling marked in italics in table 2 lies beyond the ten year time-scale of the EIA consent. At the time of the final phase of felling a further EIA Opinion will be required to assess the deforestation at this time. Note also that the award of felling permission for phase 5 will be subject to condition (m).

171. Condition (c): Works relating to the deforestation permitted by this consent shall not be carried out otherwise than in accordance with the plans and specifications approved by Forestry Commission unless otherwise agreed in writing with Forestry Commission. Specifically:

- The felling programme will adhere to the attached plan (Plan 1) and the schedule in Table 2.
- The replanting programme at Threestoneburn will adhere to the attached plan (Plan 2) and the schedule in Table 2.

Table 2: Schedule showing sequence and timing for felling and restocking.

Phase	Felling area (hectares)	Time period for felling	Replanting and new Planting Areas detailed in ES (hectares)	Compensatory Replanting (locations still to be identified (hectares))	Time period for planting
1	101.3	Jan 2012 to Dec 2013	69	0	Oct 2011 to April 2014
2	143.2	Jan 2014 to Dec 2015	59	0	Oct 2014 to April 2016
3	103.2	Jan 2016 to Dec 2017	8	75	Oct 2016 to April 2018
4	84.6	Jan 2017 to Dec 2018	0	45	Oct 2018 to April 2020
5	93.3	Jan 2019 to Dec 2020	9	50	Oct 2020 to April 2022
6	<i>41.8</i>	<i>Jan 2021 to Dec 2022</i>	<i>13</i>		<i>Oct 2022 to April 2024</i>
Total	567.4		158	170	

Reason: To ensure the deforestation and restocking is consistent with the Environmental Statement's analysis of the proposal and to enable control to be exercised over the project as it proceeds. Compliance with the felling and restocking programme is also required to ensure to mitigate against the transition from forest to open heathland and the associated change in landscape.

172. **Information note:** Forestry Commission will issue felling licences to permit these phases one a phase at a time (i.e., FC would issue six felling licences, one for each phase of the course of the project).

173. Condition (d): The areas of woodland planted or retained under this project will be managed in accordance with good forestry practice as outlined in the UK

Forestry Standard, published Forestry Commission best practice guidelines, and all relevant legislation.

Reason: To draw the applicant's attention to the ongoing need to follow best practice, manage the woodland and associated habitats sustainably and abide by all relevant legislation.

174. Condition (e): The working arrangements, including the times for timber traffic, road construction and tree felling operations, on the site will be agreed with Forestry Commission before work begins.

Reason: To ensure consideration is made to the potential impacts on local residents.

Hydrology

175. Condition (f): The applicant will undertake water sampling at the location shown in Figure 2.1, ES Appendix 21. In addition to this the applicant will undertake water sampling on water courses outside of the Threestoneburn catchment at locations agreed with the Environment Agency. The sampling will assess the determinands listed in ES Appendix 21ⁱ but with Phosphorous measured in micrograms. Sampling will be conducted each month throughout the year over the period of this EIA consent (see conditions (a) and (b)). Sampling start prior to the first phase of tree felling. Water sampling results will be supplied to Environment Agency at a predetermined frequency with notification of these results the supplied to Forestry Commission. If the levels of determinands (such as phosphorus, ammonia and aluminium) do not meet Environment Agency guidelines the applicant must cease felling immediately and undertake actions to rectify water quality to satisfy these guidelines.

Reason: This water sampling will provide information on the water quality of the head waters of the River Till. The River Till has been identified as having national significance for the exposed riverine sediment quality score and is a UK BAP site. This data will allow the impact of the project on water quality to be assessed to protect the conservation value of the River Till.

176. Condition (g): A 100 metre buffer zone will be established around any private water supplies where machinery usage will be restricted and no subsequent mulching or drainage will be carried out.

Reason: To protect private water supplied from disruption during felling operations.

Ecology and nature conservation

177. Condition (h): The restoration of the open habitat sites within Threestoneburn forest will be carried out following the methods and specifications contained in the Environmental Statement. De-stumping will only be carried out after a detailed site risk assessment has been prepared and accepted by Forestry Commission. No mulching that would lead to significant soil disturbance will be carried out unless a detailed site risk assessment has been prepared and accepted by Forestry Commission.

Reason: To ensure that the blanket bog and upland heath habitats are successful restored within a reasonable timescale, and that site restoration techniques do not adversely impact on soils, soil carbon or water quality.

178. Condition (i): The applicant will keep interested parties, including NNPA, Natural England, NWT and Forestry Commission informed about the progress of the project through submission of an annual report and will consult with them on an annual basis as the project is implemented. This report will be made public with the exception of agreed confidential information, e.g., reference to any raptor nests.

Reason: To take account of consultation responses from key interested parties who wished to be consulted by the applicant during long period over which the habitat restoration will take place.

179. Condition (j): Before each coupe of tree felling begins a survey for nesting raptors will be made and the applicant will adhere to the guidance provided in Forestry Commission Bulletin 115: Ecology and Conservation of Raptors in Forests (Petty, 1998)ⁱⁱ.

Reason: To ensure the protection of any birds of prey at Threestoneburn prior to and during tree felling operations.

180. Condition (k): Any deer fences used to protect the young trees during their establishment will be erected following the relevant recommendation in Black Grouse Recovery Project North Pennines [Information Sheet 1: Fence Collisions and marking](#)ⁱⁱⁱ.

Reason: To protect birds at the site during the replanting and establishment of trees at the Threestoneburn and the other sites identified for compensatory planting.

Red squirrels

181. Condition (l): The applicant will follow all the recommendations in Appendix III to the ES Annex (Red Squirrel Survival Survey)^{iv} and within 12 months of commencing the first phase of felling the applicant will carry out the first phase of planting at Threestoneburn as per approved plan (Plan 2). At least 30% of the replanting mixture at Threestoneburn will be hazel (at least 15% by area with understorey planting to ensure 30% hazel) to create a food source for red squirrels. Before felling operations a survey will be undertaken to locate red squirrel dreys. In planning and carrying out tree harvesting the guidance in section 4 of [Forestry Commission Scotland Guidance Note 33: Forest operations and red squirrels](#), will be followed^v.

Reason: To safeguard the red squirrel population and mitigate for the loss of a food source for the animals caused the by felling conifers of seed bearing age by ensuring that the food source is available before the final coupes are felled.

182. Condition (m): Phase 5 of the felling programme (see table 2, plan 2) may not commence until the first phase of trees planted at Threestoneburn are producing seed and Forestry Commission is satisfied the woodland is capable of sustaining a population of red squirrels. Failing this the applicant will need to satisfy

Forestry Commission that an alternative strategy is in place to sustain the local population of red squirrels.

Reason: To ensure that an adequate food source for red squirrels is available before the final coupes are felled and if this is not successful, make provision for an alternative approach to safeguard the local red squirrel population.

183. Condition (n): Within 12 months of commencing the project a strategy for grey squirrel control in the vicinity of Threestoneburn, including an appropriate contribution to landscape scale monitoring, will be agreed with the Red Squirrel Northern England project and the Forestry Commission. The strategy will be implemented on an ongoing basis.

Reason: To safeguard the local red squirrel population by ensuring grey squirrels are controlled in the vicinity of Threestoneburn in order to reduce the risk of them coming into contact with the red squirrel population at Threestoneburn.

Landscape

184. Condition (o): Access ramps constructed during the felling period to allow forwarder access from the forest roads to the felling sites will be removed, backfilled and reinstated. This will be done as soon as they are no longer needed for site restoration or timber extraction.

Reason: To stabilise the soils and remove and reduce the risk of negative impacts on the landscape that may occur from soil and water movement.

185. Condition (p): The applicant will comply with all requirements of NNPA's planning consent, under the General Permitted Development Order 1995, to construct the access track between South Middleton and Threestoneburn forest^{vi}.

Reason: To mitigate the visual impact of the development of the new forest road across Ilderton Common - landscaping will return the common to its previous condition by ensuring the new road is blended into the existing landscape and to minimise disturbance to breeding birds and unknown archaeological sites.

186. Condition (q): Following the felling of the high level coupes at the eastern side of Threestoneburn and before the expiration of 9 years from the date of EIA consent the applicant will prepare and submit a detailed assessment, including a landscape assessment, covering the decommissioning options for the existing high level road line. The applicant will carry out and complete the road decommissioning agreed with Forestry Commission, before the expiration of ten years from the date of EIA consent.

Reason: The detailed assessment of the landscape impact of the high level road line would not be possible until the surrounding trees have been felled. Carrying out this assessment will allow the applicant and the Forestry Commission to ensure that the most appropriate decommissioning strategy is followed in order to minimise any potential long term negative impacts on the landscape.

Cultural Heritage

187. Condition (r): The applicant will implement both the recommendations included in the Archaeological Survey of Threestoneburn forest and the Written Scheme of Investigation: Archaeological Watching Brief, prepared by ARS Ltd.

Reason: The area surrounding Threestoneburn has been identified as an area with considerable archaeological interest this condition is to protect and safeguard both known and unknown archaeological features with the appropriate measures, identified in the ES. Crucially, to manage the effect on any unknown or known archaeological features, site staff undertaking the ground work will follow the watching brief to ensure no damage is caused to the visible, upstanding archaeology and so that any unknown archaeological features encountered during the groundworks are treated appropriately and fully recorded.

188. Condition (s): Archaeological assets exposed during the tree felling will have long-term management plans prepared by an appropriately qualified person.

Reason: To provide long-term management plans to safeguard archaeological remains once exposed.

Carbon and Compensatory Planting

189. Condition (t): Within five years from the EIA consent, the applicant will identify and secure approval from Forestry Commission for the location(s) intended for the planting of a minimum of 170 hectares (net planted area) of new woodland. The site or sites will be planted within five years of obtaining Forestry Commission approval, i.e., the locations will be planted within ten years of the EIA consent. The locations should not be more than 160 km from Threestoneburn. The proposed planting areas should include at least 60% productive conifers by area to compensate for the loss of carbon storage at Threestoneburn. It will be the applicant's responsibility to identify a site or sites where this planting mix would be appropriate, taking into account any consultation responses received. If the proposal includes a lower proportion of productive conifers the applicant will carry out a carbon assessment of the proposed woodland and increase the planting area in order to achieve an amount of carbon storage equivalent to a 170 hectare woodland (net planted area) with 60% productive conifers at yield class 12.

Reason: The proposal described in the Environmental Statement identifies 158.5 hectares of replanting and new planting that will be carried out as mitigation for the loss of woodland habitat and long term carbon storage.

The Environmental Statement also commits to planting a further 170ha of woodland, which would include a significant element of productive conifers to mitigate against the reduction in long-term carbon storage in trees at Threestoneburn.

190. **Informative note:** None of the compensatory planting will be eligible for funding for new planting under the England Woodland Grant Scheme's Woodland Creation Grant. Any grant payment under England Woodland Grant Scheme (EWGS), if available at the time the compensatory planting takes place, will be

limited to the relevant rate that would have applied had the planting been taking place as restocking on the Threestoneburn site.

Funding under EWGS does not incentivise deforestation with replanting in new locations. Ineligibility for woodland creation grant will also help ensure the compensatory planting does not include any areas that would have been planted regardless of EIA consent and its conditions because of the incentives available under EWGS.

191. Condition (u): The applicant will not apply for, seek to obtain or accept carbon related funding or carbon offsetting payments in relation to the compensatory planting area.

Reason: To ensure the carbon storage delivered by the compensatory planting is accounted for as compensation for the loss of long term carbon storage resulting from the deforestation of Threestoneburn forest and not used to 'offset' other projects or emissions.

192. **Information Note:** Because the compensatory woodland must be planted as a condition of consent under the EIA (Forestry) Regulations the planting would not satisfy the additionality criteria of The Woodland Carbon Code or comply with UK Government's position on voluntary carbon offsetting.

193. Condition (v): The planting to provide compensatory carbon storage will take place over no more than three sites. The planting at each site must be approved by the Forestry Commission and will take account of any consultation responses received.

Reason: To ensure the compensatory planting is appropriately located and designed and delivers the maximum bio-diversity benefit whilst also delivering the mitigation for the lost carbon storage at Threestoneburn required by condition (s).

ⁱ **Determinands of water quality:** pH (pH value), Biochemical Oxygen Demand (BOD) (milligrams per litre), Dissolved Oxygen (DO) (milligrams per litre), suspended solids (SS) (micrograms per litre), ammoniacal-nitrogen (milligrams per litre), nitrate-nitrogen (milligrams per litre), phosphate (micrograms per litre), aluminium (milligrams per litre), iron (micrograms per litre) and potassium (micrograms per litre).

ⁱⁱ **FC Bulletin 115: Ecology and Conservation of Raptors in Forests (Petty, 1998)**

Controlling Disturbance

Disturbance to raptors can be caused directly through forestry operations or recreational activities in the vicinity of nest sites. It can also be caused by carelessly advertising the presence of rare breeding species, which may then lead to disturbance from bird watchers or the theft of eggs and chicks by egg collectors and falconers.

Forestry Operations

Most forestry operations, such as planting, harvesting, road building and maintenance, and recreational activities can lead to desertions if these are undertaken too close to occupied nests. It is illegal to cause intentional disturbance to Schedule 1 species, and undesirable to disturb other raptors. While most raptors will accept short, infrequent nest visits, few will accept more persistent disturbance. The worst type of disturbance is when a sudden change occurs in the nesting environment, such as the start of a harvesting operation. Raptors can sometimes become conditioned to more regular disturbance. Pairs will occasionally nest close to busy main roads or recreation areas, but in these cases disturbance was present from the start of nesting.

The levels of disturbance which are tolerated vary, and depend on a number of factors including species, food-supplies and stage of breeding. Golden eagle, buzzard and tawny owl are very sensitive to disturbance and some individuals will easily desert during incubation if flushed from the nest, sometimes after only one visit.

Within the same species, desertions are more frequent when food is scarce, either in poor food years or when parents are inexperienced. There is also a trend for desertion to be more frequent early in the breeding cycle, when birds are nest building or incubating, compared to later on when large chicks are in the nest (Newton, 1979; Petty, 1996c).

Disturbance may also cause other problems apart from desertions. If the adult is kept off the nest, eggs may become chilled which can lead to reduced hatching success due to embryonic deaths. Small chicks (which cannot regulate their own body temperature) may die as a result of either chilling or overheating (Fyffe and Olendorff, 1976; Giron Pendleton *et al*, 1987), or the nest contents can be predated by crows.

To avoid these problems birds should not be flushed from occupied nests and disturbance-free zones around around known nests should be observed for all potentially disturbing activities during the breeding season (Figure 3.5).

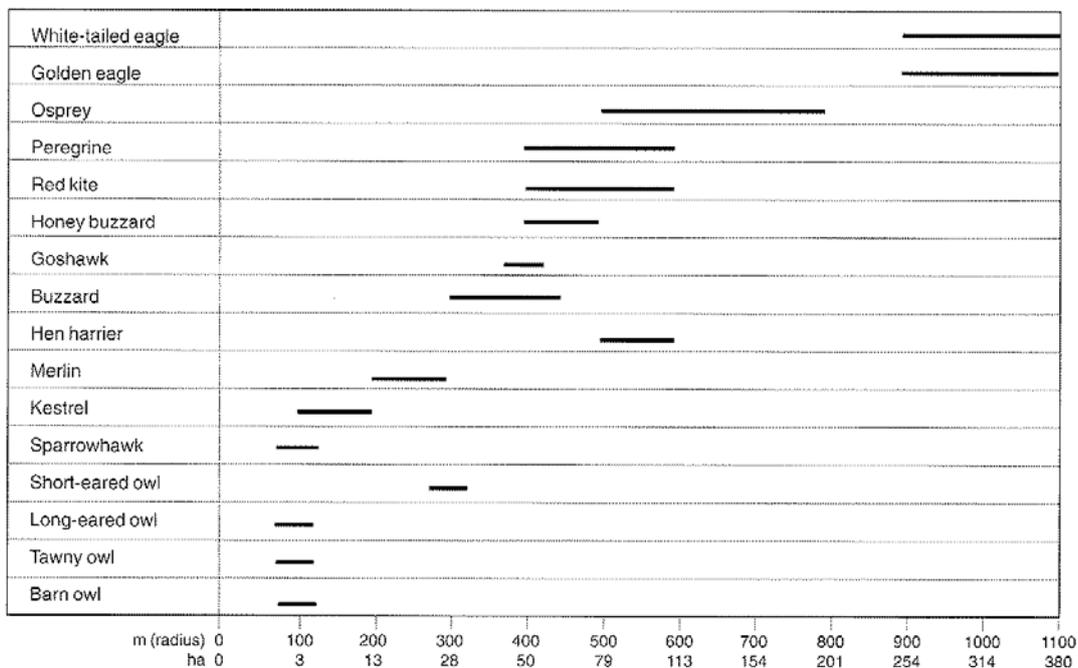


Figure 3.5 Recommended disturbance free zones around occupied raptor nests (March- July inclusive). The bars give the radius of zones for closed habitat (woodland) at the left end of the bar and for open habitats (moorland and very open forest) at the right hand of the bar. These distances are intended as a guide and will vary depending on topography and habitat, and stage of breeding cycle. It is sometimes possible to decrease the radius of zones by 25%-50% once chicks are present (for example, see Petty (1996c) for goshawks) but this varies between species. If in doubt use the distances in the above and seek advice.

Harvesting operations occasionally result in the accidental felling of a raptor nest. If the nest contains eggs then little can be done. If the nest contains unharmed chicks then remedial action is often successful. This involves building an artificial nest in a nearby tree and placing the chicks in it. Providing all disturbance ceases immediately, there is a good chance that the parents will continue to care for the chicks.

These problems can be avoided if areas to be thinned or clear-felled during the breeding season (March-July inclusive) are searched for signs of active nests before operations commence.

Security of Information

Forest managers need to know the nesting locations of at least the rarer raptors within their forests if these sites are to be effectively safeguarded. Therefore, it is helpful if those licensed to work on raptors,

such as members of Raptor Study Groups, provide forest managers with nest locations. For this process to be successful, forest managers need to show that such information is treated confidentially and used in an effective way. Nest locations of Schedule 1 raptors should be the responsibility of one person within each forest who will ensure that other staff are informed only when necessary. They should not be included on the design plans which are widely circulated, either within or outside the forest, but must be included in the design planning process.

iii **Recommendations for deer fence location and marking from the Black Grouse Recovery Project:**

- Seek advice on the siting of new fences within the occupied range of black grouse from the Black Grouse Recovery Project Officer.
- All identified problem stretches of fencing should be removed if possible. Alternatively mark them and lower the wire.
- To maximise visibility to flying birds, the top wire should be marked at least once between each upright post with reflective metal plates or bundles of heather.
- All new grant-aided fences (for grazing management and tree planting) within areas occupied by black grouse (information available from Black Grouse Recovery Project Officer) should incorporate the costs of marking.
- Relevant agencies should consider making grants available for repositioning, marking and lowering top wires on existing problem fences.

iv **Recommendations from red squirrel survival survey (ES Annex, Appendix V):**

- The proportion of hazel planted as an understorey should be a significant component (no less than 30%) of the native broadleaves planted at Threestoneburn. Cultivated varieties of hazel could also be planted which would produce nuts more quickly.
- Include other shrub species that are known to be secondary food for red squirrels such as hawthorn and dog rose
- Include small amounts of Scots pine within the native broadleaf planting to further diversify the food supply
- Provide nest boxes in relation to estimated population size (~21 animals) to provide nesting opportunities
- Number of nest boxes should exceed estimated carrying capacity and there should be a minimum of 30 nest boxes distributed at Threestoneburn and Ilderton Dod
- Provide stepping stones between isolated woodland blocks to facilitate movement within Threestoneburn woodland complex.

v **FCS Guidance Note 33: Forest operations and red squirrels:**

4. PLANNING HARVESTING TO MINIMISE DISTURBANCE

Management options for felling need to be flexible and adapted to local conditions. The advice here focuses on conifer plantations that have been surveyed and are known to contain red squirrels, although the concepts are transferable to other woodland types.

4.1 Where and when to fell

Red squirrels tend to follow the food supply and likely feeding and drey building areas can be predicted based on knowledge of the tree species and coning sequences (see Box 3). Where possible plan to **avoid clearfelling in the richest red squirrel habitat**, particularly Norway spruce during mast years (including the summer before the cones are ripe and extending until the following summer). Adjacent or mixed stands of Norway spruce and Scots pine generally provide the best red squirrel habitat and should be surveyed with extra caution.

Although harvesting operations may disturb red squirrels and damage dreys at any time, the potential impacts are higher during the breeding season. Squirrels will breed twice in years when food supplies are good, although in poor cone years there may be one brood and the young will be weaned by the end of June. **Ideally, avoid clearfelling in the breeding season from February – September. Where this is not possible, try to zone felling away from the richest red squirrel areas and the period up to the end of June** (see 4.2 for more about felling during the breeding season).

BOX 3. CONIFERS AND RED SQUIRRELS

Red squirrel habitat depends entirely on the presence of suitable food supplies and trees for drey building. Knowledge of coning is a useful way to predict good feeding areas in the forest.

Norway spruce (NS)

- preferred species for dreys
- cone production fluctuates dramatically between years,

- provides abundant food in high mast years
- crucial component for red squirrels in forests dominated by SS
- cones ripen later than SS and most seed is shed the following spring
- caution: masting in NS and SS tend to be synchronous so include an alternative food supply such as larch
- good crop interval every 3-11 years
- Scots pine (SP)**
- retains cones and seeds until the following summer, provides food supply in cone failure years for other species
- crucial component in forests dominated by SS
- good crop interval every 2-5 years
- Douglas fir (DF)**
- useful to provide a continuity of seed
- good crop interval every 4-7 years
- most seed shed in autumn
- Sitka spruce (SS)**
- less preferred food source
- tends to shed most of seeds from cones in first 4 months after maturing in September,
- only provides a source of food in autumn with a shortage from December onwards
- cone production fluctuates dramatically between years
- good crop interval every 3-5 years
- in SS plantations alternative food supplies should be available (see NS and SP)
- Corsican pine (CP)**
- less favourable for red squirrels than SP as cones less heavily
- good crop interval every 3-4 years
- cone and seed retention as for Scots pine
- Lodgepole pine (LP)**
- holds cones for over 12 months and coning is less erratic than in SS and NS
- provides a dependable food supply in cone failure years for SS and NS
- good crop every 1-3 years.

4.2 Detailed operational planning

When drawing up a harvesting schedule the accessibility of nearby feeding and shelter areas to which red squirrels can escape should always be taken into account. If felling or thinning during the breeding season is unavoidable, trees containing red squirrel breeding dreys should be marked and where practical left unfelled, together with immediately adjacent trees. Ideally connection should be retained to breeding dreys by means of remaining tree crowns linking to adjacent woodland areas. However it will often not be possible to avoid loss or damage to dreys in clearfelling harvesting operations.

- **Thinning** operations disturb red squirrels. They will move to nearby feeding areas but remain within 200m and return after operations cease. To minimise disturbance, consider splitting larger (> 30ha) sites into smaller sections and thin them in different years.
- **Low impact silvicultural systems** in sheltered locations should cause less disturbance to squirrels and dreys than clear-felling because they maintain an almost continuous canopy layer. These systems will probably also result in improved habitat value in future by stimulating coning and provide a mix of age classes for continuity of food sources. It should be possible to plan small group fellings or thinning operations to avoid most dreys. Most areas are not currently suited to these systems but FCS is encouraging their development for the long term.
- **Clear felling and group felling** will create the highest disturbance/damage risk, but these systems are the only practical option at present in most conifer forests. Retaining small clumps of unfelled trees around dreys should be considered, but these are likely to blow over on exposed or wet sites and it may not be practical, nor effective for red squirrel conservation, to retain them. In unthinned sitka spruce plantations, dreys may be almost impossible to find before trees are felled.

4.3 During Felling

Harvesting operators should be instructed to look for dreys as they work. Forked trees in areas of Norway spruce should be treated with extra caution as these are favoured drey trees. If suspected active red squirrel dreys are encountered during operations:

- Where practical, leave the tree standing (see 4.2).
- Consider whether to delay or relocate operations.

- If a tree containing an active drey with young is felled and the drey is still intact, try to place the drey in another nearby retained tree where practical.
- Record all such incidents and the action taken when red squirrels or their dreys are encountered during operations.

^{vi} **Conditions of NNPA's Permitted Development Order consent:**

- The development hereby permitted shall be begun before the expiration of three years from the date of this permission [18 August 2011].
- The development hereby permitted shall be carried out in accordance with the following approved plans and specification: Proposed hill road drawing and specification received by NNPA on 21st June 2010
- Construction works shall not be undertaken during the bird nesting season (i.e., 15th March – 31st July inclusive) and the timing of tree felling shall not be undertaken during the bird breeding season and the trees to be felled should be assessed by an appropriately qualified person to ensure there are no risk to bats.
- The developer shall (A) give a minimum of two weeks notice in writing of commencement of works to the archaeologist nominated by the Local Planning Authority and no works shall commence on site until the two week notice period has expired (B) shall afford access to the site to the archaeologist at all reasonable times and allow the archaeologist to observe the excavations and record items of interest of finds.
- No development shall take place until a scheme specifying the methods of recording or preserving archaeological deposits which may be affected by the approved works and including time table for such recording has been submitted to and been approved in writing by the Local Planning Authority. The development shall not be carried out otherwise than in strict accordance of the agreed scheme.
- Before the track is brought into use a scheme shall be submitted to and approved in writing by the Local Planning Authority to show how the use of the track by unauthorised vehicles will be controlled.
- The track hereby permitted shall be soiled over and planted with appropriate moorland species within 12 months of completion of timber extraction from Threestoneburn forest in accordance with a scheme of work submitted to and approved by the Local Planning Authority.

Informative Note:

No action should be undertaken to disturb the surface of the path, obstruct the path or in anyway prevent or deter public use of the path without the necessary legal diversion or closure order having been made. Northumberland County Council is the relevant authority for such applications to divert or temporarily close rights of way.