# Cairngorms National Park Authority

Habitats Regulations Assessment – Final Report

Planning Application No: 2013/0119/DET

Erection of 58 houses, associated roads & footways at land at School Road & Craigmore Road, Nethy Bridge

June 2014

# **Habitats Regulations Assessment Report: School Wood**

Contents					
Summary	3				
Section I					
Introduction	5				
Background to the assessment	6				
Section 2					
Methodology	7				
Section 3					
Stage I – decision to screen	8				
Stage 2 – identification of relevant Natura sites	8				
Stage 3 – consultation on methodology	9				
Stage 4 – screening for likely significant effects	9				
Stage 5 – screening for in combination effects	28				
Section 4					
Stage 6 – appropriate assessment	30				
Stage 7 – consultation on assessment	46				
Stage 8 – mitigation measures	46				
Stage 9 – conclusion on integrity test	47				
Stage 10 – section 49 procedures	47				
References	48				
Appendix I – Details of Natura Sites	51				
Appendix 2 – Methodology for screening for capercaillie effects	61				
Appendix 3 – Glossary of terms	62				
Appendix 4 – Capercaillie background information	63				
Appendix 5 - Consultation responses	65				

# Summary

# **Habitats Regulations Assessment Final Report June 2014**

#### Introduction

This is a record of the assessment under regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) for the planning application 2013/0119/DET made by Argyll Developments (Scotland) Ltd. The development is for the erection of 58 houses, associated roads and footways at land at School Road & Craigmore Road, Nethy Bridge.

# **Methodology**

There is no prescribed methodology within Scotland for HRAs for projects. The CNPA has based its methodology on those prepared by D Tyldesley Associates for the Welsh Assembly in conjunction with guidance from the EU. We have derived a 10 stage process, from the initial decision to assess a project to section 49 derogation procedures, though these are not needed in this case.

# **Screening**

The screening exercise looks at which Natura sites may be affected by the development. It then considers what effects there may be and if they are a 'likely significant effect' (LSE). This showed that there were LSEs on six Natura sites:

- Abernethy Forest SPA
- Anagach Woods SPA
- Cairngorms SPA
- Craigmore Wood SPA
- Kinveachy Forest SPA
- River Spey SAC

Lastly the screening considered the possible combination of effects between the proposal and other plans and projects. None were found to be likely significant effects.

#### **Appropriate Assessment**

The Appropriate Assessment considered in more detail the nature of the effects identified in the screening process. Its purpose is to determine if there are any adverse effects upon the conservation objectives for the Natura sites and then to see if there was an adverse effect upon the integrity of any of these sites. The Appropriate Assessment found several such adverse effects and then identified mitigation measures to address them.

The most complicated effect identified was the disturbance to capercaillie from recreational use of the habitats by new residents from the development. The complicated interrelationships of habitat networks and the dispersal of the birds meant that the whole meta-population had to be considered across the area. This showed that there were a number of direct and indirect effects upon capercaillie across Badenoch and Strathspey and that they were not restricted to the SPAs or the development site itself. The assessment considered the anticipated pattern and volume of recreational

usage arising from the development; how this relates to existing key use by capercaillie of the sites and the lack of promotion of routes in sensitive area. Following consultation on the draft report it was concluded that the behaviour of even a small number dogs off lead might still have a significant effect but that this would be resolved through the adoption of additional mitigation. With this mitigation it was concluded that the development would not adversely affect the integrity of any Natura sites designated for capercaillie.

Mitigation measures were also put forward to protect other species such as freshwater pearl mussel, sea lamprey, salmon and otter.

#### Conclusion

The assessment shows that, with the additional mitigation measures, there is no likely significant effect from the proposed development upon the qualifying features or the conservation objectives for any Natura sites. We conclude therefore that there is no adverse effect upon the integrity of any Natura site.

#### **Section One**

# Introduction

This is a record of the assessment under regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) for the planning application 2013/0119/DET made by Argyll Developments (Scotland) Ltd. These regulations are otherwise known as "the habitat regulations". It is the purpose of this assessment to inform the decision making body (the CNPA) on the effects of the above development upon the relevant Natura sites to allow them to determine the application in accordance with the European Habitats Directive 92/43/EEC.

European Directive 92/43/EEC is transposed into law in Scotland by the habitat regulations. This requires that plans and projects considered by competent authorities that could have a likely significant effect on a Natura site, should be subject to an assessment of their potential impacts upon the site. Regulation 48 directs that:

- "48.-(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which —
- (a) is likely to have a significant effect on a European site in Great Britain (either alone or in combination with other plans or projects), and
- (b) is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives."

#### It further states that:

"48 - (5) In the light of the conclusions of the assessment, and subject to regulation 49, the authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site."

The Cairngorms National Park Authority, as the determining and therefore competent authority, is therefore required in law to undertake this assessment in order to comply with these regulations.

Within the Habitats and Birds Directives there are two categories of protected sites, both of which are found within the Cairngorms National Park. In addition, in Scotland, sites designated for protection under the Ramsar Convention (1971) are also Natura sites and/or Sites of Special Scientific Interest and are protected under the relevant statutory regimes. Sites put forward for designation under Natura (provisional sites) are also fully protected until the time when the designation is either confirmed or refused. The types of site considered for this appraisal are therefore:

• Special Area of Conservation (SAC and pSAC) – a European designation which protects natural habitats and wild flora and fauna other than birds

- Special Protection Area (SPA and pSPA) a European designation which protects wild birds
- Ramsar Site –Sites designated under the Ramsar Convention 1971 which protects wetlands

This process of assessment is known formally as a Habitats Regulations Assessment (HRA). This is not to be confused with an Appropriate Assessment (AA), which is one component of the process of the HRA.

## Background to the assessment

The proposed development which is the subject of this assessment is for planning permission for a development of 58 houses, associated roads and footways. An indicative allocation for a development at School Wood is contained within the Cairngorms National Park Local Plan 2010. This was subject to a Habitats Regulations Assessment (HRA) and Appropriate Assessment (AA). An allocation for School Wood is also contained within the Proposed Cairngorms National Park Local Development Plan and its associated HRA (approved for consultation on 1<sup>st</sup> March 2013). In preparing both the adopted Local Plan and the Proposed Local Development Plan a range of issues was considered through HRA and appropriate assessment, and these inform the assessment of this application for planning permission in principle.

The principal documents which have been taken into account for this assessment are:

- Planning application
- Planning statement
- Indicative land use planning strategies
- Design and access statement
- Environmental Statement and appendices
- Block Plan of application
- SNH Natura Appraisal
- RSPB letter of response to the planning application following site visit
- Confidential reports and surveys on capercaillie distribution at Rothiemurchus, Inshriach, Abernethy and Craigmore Wood. (T.Poole, FCS and RSPB 2013)\*.
- Consultation responses on the draft HRA from SNH and the RSPB

<sup>\*</sup> Within this report the details of locations of capercaillie and their lekking sites are generalised and the surveys above are not within the public domain. This is to protect the birds from possible disturbance that may result from this information being widely distributed. Consultees have been given access to all information.

# **Section Two**

# **Methodology**

There is no prescribed method for a Habitats Regulations Assessment. The CNPA has therefore consulted the guidelines prepared by David Tyldesley and Associates for the Welsh Assembly. These are contained within TAN 5 'Nature conservation and planning' and, where necessary, have been adapted for the situation in Scotland. In addition EU guidelines have also been consulted in this process (see references for details).

Table 1. Stages of Assessment

Stages of	Stages of Assessment				
Stage I	Decide whether proposal is subject to HRA				
Stage 2	Identify Natura Sites that should be considered and gather information about the Natura Sites				
Stage 3	Consultation on the method and scope of the appraisal with SNH and others. Request additional information from applicant if required.				
Stage 4	Screening the proposal for likely significant effects on Natura sites including mitigation measures included within the proposal				
Stage 5	Screen for "in combination effects" with other plans or projects				
Stage 6	Appropriate Assessment to determine effect upon conservation objectives. Preliminary conclusion about adverse effect upon the integrity of any site.				
Stage 7	Consultation with SNH (and others if considered appropriate)				
Stage 8	Apply additional mitigation measures, if required, via conditions or agreements to ensure that there is no adverse effect on site integrity				
Stage 9	Conclusion on Integrity test				
Stage 10	Regulation 49 derogation procedures. This only applies if adverse effects remain and Competent Authority still wishes to approve the application				

Further details of the methodology applied during screening and appropriate assessment are given in the relevant sections.

#### **Section Three**

# Stages I-5 describing the Natura sites and Screening

# Stage I: The development proposal and the decision to screen

The proposal for the housing development at School Wood is close to a number of Natura sites and is within the definition of a project under Regulation 54 of the Natura regulations.

Regulation 54(2) states that:

"Regulations 48 and 49 (requirement to consider effect on European site) apply, in Scotland, in relation to—

(a) granting planning permission on an application under Part III of the Town and Country Planning (Scotland) Act 1972."

The proposed development is not wholly concerned with the necessary management of a European site for nature conservation and requires planning permission and so the plans must be subject to assessment under the terms of Directive 92/43/EEC.

# Stage 2: Identification of Natura Sites and gathering their details

An assessment of all possible sites affected by the proposed development has been undertaken. This has considered any possible outcomes of the development together with any conceivable effect. The list below is those sites that have been taken forward to screening for likely significant effects. See Appendix I for details on each site and its qualifying features.

Other sites were considered but have not been taken forward. For example, Loch Vaa SPA is not a well-used site for recreation nor is it promoted as a destination. It was considered to be far from the development site, while the scale of development, and the nature of the threats to the qualifying feature (disturbance of nesting Slavonian grebes, particularly by anglers and birdwatchers), means that walkers, and even dog walkers, are not likely to have a significant negative impact, given that they are much less likely to venture far into the wet areas frequented by the birds.

# **Special Area of Conservation (SAC)**

Cairngorms Kinveachy Forest River Spey

#### **Special Protection Area (SPA)**

Abernethy Forest Anagach Woods Cairngorms Cairngorms Massif Craigmore Wood Kinveachy Forest

# Stage 3: Discussions on the method and scope of the appraisal and requests for additional information

Advice has been sought from SNH in relation to this application, and in relation to this and other allocations in the Local Plan and Proposed Local Development Plan, on matters including otter, freshwater pearl mussel, golden eagle and capercaillie impacts. A discussion on the specific effects on capercaillie was held with a number of contributors on 30/10/2012. Meetings were also held subsequently with the Capercaillie Project officer and SNH in May 2013, while a site visit with SNH and RSPB took place on 9<sup>th</sup> May 2013.

# Stage 4: Screening the proposal for likely significant effects

The test in regulation 48 is whether the proposal is likely to have a significant effect, either alone or in combination with other plans or projects, on the Natura sites identified in stage 2 above. This clearly requires an initial assessment, or screening, for Natura site interest features which may be affected and whether this would be likely or significant.

In considering what is 'likely' the CNPA is mindful of existing case law in relation to the application of the habitats regulations. The CNPA notes the ruling of the ECJ in case C-127/02 (often known as the Waddenzee judgement). This rules (in paragraph 45) that an appropriate assessment must be undertaken if "it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects". Consequently we take the word 'likely' not to mean 'probable' but 'possible'.

The ruling also gives useful clarification for the word 'significant'. In Paragraph 47 it states that: "where such a plan or project has an effect on that site but it is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned." The CNPA draws from this that it must be confident that any significant effects can be excluded on the basis of objective information in order to conclude that there will be no effect on the conservation objectives.

In considering the part of the test which is "alone or in combination with other plans or projects" we understand that this refers to proposed or incomplete plans or projects. Completed developments will also be considered but as part of the baseline for assessment if they have continuing effects on any site and "point to a pattern of progressive loss of site integrity". If a development would have a possible likely significant effect (LSE) alone then it is to be assessed alone. An in combination assessment is therefore not required, until it is no longer considered to have an effect alone. In addition to direct LSEs, there can also be indirect LSEs. These are particularly pertinent to the assessment of SPAs for which the capercaillie is a qualifying feature, as the five capercaillie SPAs in Strathspey are known to host collectively a meta-population of the species and are thus interdependent. Therefore, the development could have an indirect LSE on one site by impacting directly on another.

When considering in combination tests only projects and plans that are relevant to the effected sites will be included. Furthermore they will be excluded unless the effects they have are related to the effects of the development being assessed here.

The first step of the screening process will consider what the level of any effect these may be: no effect, likely insignificant or likely significant. If likely insignificant effects are found they will be further screened at stage 5 in combination with other plans or projects. If there are any significant effects found, either alone or in combination, then these will be considered in detail within an Appropriate Assessment.

Table 2. The four possible outcomes from the screening process

Screening outcome	Description	Stage of process outcome found
No effect	There is no effect at all upon the qualifying interests	Stage 4
No likely significant effect in combination	There is an insignificant effect from the development itself and even in combination with other plans and projects, it does not amount to a significant effect.	Stage 5
Likely significant effect in combination	There is an insignificant effect from the development itself but in combination with the insignificant effects of other plans and projects, it becomes significant.	Stage 5
Likely significant effect alone	There is a possible significant effect from the development by itself. This may be direct or indirect.	Stage 4

The adopted Local Plan and the Proposed Local Development Plan HRAs both identify that development at School Wood has the potential to affect the qualifying features on the sites listed above. The effects identified were, in summary, as follows:

- Pollution of river water from wastewater discharge following treatment
- Disturbance to capercaillie

Screening of this application considers these and any additional possible effects that would arise from the granting of planning permission for development at School Wood.

Table 3. Screening for LSE from School Wood development

Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
Capercaillie	Increase in recreational activity from residents of new development within the SPA (direct effect)	Disturbance to lekking, brood rearing and feeding habitats from recreational activity.	permanent	The area is managed by RSPB to minimise effects by visitors, as far as possible, through encouraging use of promoted paths which are outwith key habitat and lekking sites. Lodge road is closed to vehicular traffic early in mornings during lekking season. The effects are considered to be general and largely on brood rearing habitat. An increase is anticipated in daily use of the northern side of the SPA (e.g. Dell Wood and Mondhuie) for short walks and in weekend use of more central area around Forest Lodge, including with dogs and for cycling. The nearest, usual lek to the development site is around 650m from the nearest path. The next nearest lek is protected from disturbance as it is near the Loch Garten osprey nest. This part of the SPA already attracts approximately 40,000 visitors to visitor centre annually and they are encouraged to view lekking behaviour from the confines of a distant hide. The next nearest lek is around 5km from the development site. It is around 125m from a track and there are several records of broods close to tracks near this third lek.	Likely Significant Effect alone (direct

			some of the paths further from the village, there is potential for increased recreational disturbance.	
Increase in recreation within other SPAs that support caper meta-population from residents of new development (indirect effect)	A reduction in productivity in other SPAs reducing the viability of the meta population through decreased migration and in effect increased habitat fragmentation.	permanent	Where there is a likely significant effect identified upon one or more of the other four SPAs (for Capercaillie) within the area this may also have an effect for this SPA. A reduction in productivity within another SPA may restrict movement of birds, especially females, between sites. This could reduce the numbers within this SPA and its genetic diversity, both affecting its distribution and viability of the SPA population. Direct effects have also been found in the following SPA:  Craigmore Wood – LSE  NB – indirect effects are also LSEs but are not noted here for clarity. However they are considered automatically as they are picked up within each SPA screening matrix.	Likely Significant Effect alone (Indirect)
Increase in recreation within non SPA habitat that supports caper metapopulation from residents of new development (indirect effect)	Reduction in productivity within areas such as Boat of Garten woods and undesignated part of Inshriach, population reducing the viability of meta-population though decreased migration and in effective increased habitat fragmentation	permanent	Undesignated areas used by capercaillie in the wider area, e.g. Boat of Garten woods, Kinveachy face, and Inshriach, are not considered likely to experience a significant increase in visitor activity arising from this development. This is due to their distance from the development site and the scale of the development. School Wood itself does not host significant use by capercaillie while SNH has judged that any disturbance to transient birds in Sliemore Wood is not considered to have a likely significant effect on any populations within the	No Effect

				SPAs.	
	Occupation of new housing	N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect
	Construction activity	N/A	N/A	N/A The development Site is too far from the SPA to have any possible effects	No effect
Scottish Crossbill	Increase in recreational activity from residents of new development within the SPA	Disturbance to nesting sites and feeding habitat	permanent	There is no evidence that species affected by disturbance; species does not nest on the ground. Therefore birds within SPA are unlikely to be affected.	No effect
Osprey	Increase in recreational activity from residents of new development within the SPA	Disturbance to nesting sites	permanent	Nest sites are managed and protected by RSPB. Visitor centre provides opportunity for viewing without disturbance. General recreation managed by RSPB to minimise effects, as far as possible, by providing promoted paths away from nest sites.	No effect

Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
Capercaillie	Increase in recreational activity from residents of new development within the SPA (direct effect)	Disturbance to lekking, brood rearing and feeding habitats from recreational activity.	permanent	The SPA is not a popular destination with only one promoted path which skirts its southern edge and no core paths. However, the development is closer to this wood than most other parts of the village so it is possible that some new residents would use paths within the SPA for recreation, e.g. longer weekend walks or off-road cycling. The usual location of the nearest lek to the development site is 125 m from a track within this SPA. A previous lek site was adjacent to a track, and adults and broods have been recorded close to tracks. RSPB management strategy is to keep numbers low by promoting other less sensitive areas and not promoting access and car parking. As capercaillie live and breed in areas close to some of the paths and tracks in this wood, there is potential for increased recreational disturbance.	Likely Significant Effect alone (direct)
	Increase in recreation within other SPAs that support caper meta-population from residents of new development (indirect effect)	A reduction in productivity in other SPAs reducing the viability of the meta population through decreased migration and in effect increased habitat fragmentation.	permanent	Where there is a likely significant effect identified upon one or more of the other four SPAs (for Capercaillie) within the area this may also have an effect for this SPA. A reduction in productivity within another SPA may restrict movement of birds, especially females, between sites. This could reduce the numbers within this SPA and its genetic diversity, both affecting its distribution and viability of the SPA population. Direct effects have been found in the following SPA	Likely Significant Effect alone (indirect)

			Abernethy Forest - LSE  NB – indirect effects are also LSE but are not noted here for clarity. However they are considered automatically as they are picked up within each SPAs own screening matrix.	
Increase in recreation with non SPA habita that supports caper metapopulation from residents of ne development  (indirect effect)	Garten woods and undesignated part of Inshriach, population reducing the viability of meta-population though decreased migration and in effective increased habitat	permanent	Undesignated areas used by capercaillie in the wider area, e.g. Boat of Garten woods, Kinveachy face, and Inshriach, are not considered likely to experience a significant increase in visitor activity arising from this development. This is due to their distance from the development site and the scale of the development. School Wood itself does not host significant use by capercaillie while SNH has judged that any disturbance to transient birds in Sliemore Wood is not considered to have a likely significant effect on any populations within the SPAs.	No effect
Occupation of new housing	N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect
Construction activity	N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect

Anagach woods SPA						
Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome	
Capercaillie	Increase in recreational activity from residents of new development within the SPA (direct effect)	Disturbance to lekking, brood rearing and feeding habitats from recreational activity.	permanent	SPA is already well used from Grantown residents (circa 2,200). Woodlands are more than 5km from the development which is fewer than 100 houses. It is unlikely to be a significant target destination and any increase in users is likely to be insignificant. Woodlands already have well used promoted paths with signage about caper requesting responsible access. However bird population has low productivity and site is considered a 'sink'. Likely access points to woodlands mostly away from key caper areas.	No effect	
	Increase in recreation within other SPAs that support caper meta-population from residents of new development  (An indirect effect)	A reduction in productivity in other SPAs reducing the viability of the meta population through decreased migration and in effect increased habitat fragmentation.	permanent	Where there is a likely significant effect identified upon one or more of the other four SPAs (for Capercaillie) within the area this may also have an effect for this SPA. A reduction in productivity within another SPA may restrict movement of birds, especially females, between sites. This could reduce the numbers within this SPA and its genetic diversity, both affecting its distribution and viability of the SPA population. Anagach is particularly dependent upon immigration of young birds from surrounding areas and so is very sensitive to a reduction in dispersal. Direct effects have been found in the following SPAs.  Abernethy Forest - LSE  Craigmore Wood – LSE	Likely Significant Effect alone (indirect)	

			NB – indirect effects are also LSE but are not noted here for clarity. However they are considered automatically as they are picked up within each SPA screening matrix.	
non SPA that supp caper me population	within areas such as Boat of Garten woods, Kinveachy face, and undesignated part of Inshriach, population reducing the viability of meta-population though decreased migration and in effective increased habitat		Undesignated areas used by capercaillie in the wider area, e.g. Boat of Garten woods, Kinveachy face, and Inshriach, are not considered likely to experience a significant increase in visitor activity arising from this development. This is due to their distance from the development site and the scale of the development. School Wood itself does not host significant use by capercaillie while SNH has judged that any disturbance to transient birds in Sliemore Wood is not considered to have a likely significant effect on any populations within the SPAs.	No effect
Occupation new hou		N/A	The development Site is too far from the SPA to have any possible effects	No effect
Constru activity	ction N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect

# Cairngorms SPA

Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
Capercaillie	Increase in recreational activity from residents of new development within the SPA  (Direct effect)	Disturbance to lekking, brood rearing and feeding habitats from recreational activity.	permanent	Extensive SPA with lek sites in Rothiemurchus, Glenmore and Inshriach. SPA is far from development site (>10km by road distance), combined with development scale of fewer than 100 houses, means there is no effect. In addition the number of visitors to these areas is already very high, approximately 350,000pa and any increase from the proposal will be very small.	No effect
	Increase in recreation within other SPAs that support caper meta-population from residents of new development  (An indirect effect)	A reduction in productivity in other SPAs reducing the viability of the meta population through decreased migration and in effect increased habitat fragmentation.	permanent	Where there is a likely significant effect identified upon one or more of the other four SPAs (for Capercaillie) within the area this may also have an effect for this SPA. A reduction in productivity within another SPA may restrict movement of birds, especially females, between sites. This could reduce the numbers within this SPA and its genetic diversity, both affecting its distribution and viability of the SPA population. Direct effects have been found in the following SPA.  Abernethy Forest – LSE  Craigmore Wood – LSE  NB – indirect effects are also LSE but are not noted here for clarity. However they are considered automatically as they are picked up within each SPA screening matrix.	Likely Significant Effect alone (indirect)

	Increase in recreation within non SPA habitat that supports caper metapopulation from residents of new development  (indirect effect)	Reduction in productivity within areas such as Boat of Garten woods, Kinveachy face, and undesignated part of Inshriach, population reducing the viability of meta-population though decreased migration and in effective increased habitat fragmentation	permanent	Undesignated areas used by capercaillie in the wider area, e.g. Boat of Garten woods, Kinveachy face, and Inshriach, are not considered likely to experience a significant increase in visitor activity arising from this development. This is due to their distance from the development site and the scale of the development. School Wood itself does not host significant use by capercaillie while SNH has judged that any disturbance to transient birds in nearby Sliemore Wood is not considered to have a likely significant effect on any populations within the SPAs.	No effect
	Occupation of new community	Disturbance from normal occupation of housing and other activity from the new community	permanent	The development is approximately 9km from the nearest point of the SPA.	No effect
	Construction activity	Disturbance from construction on site.	Construction phase	The development is approximately 9km from the nearest point of the SPA.	No effect
Scottish Crossbill	Increase in recreational activity from residents of new development within the SPA	Disturbance to nesting sites and feeding habitat	permanent	There is no evidence that species affected by disturbance; species does not nest on the ground. Therefore birds within SPA are unlikely to be affected.	No effect
Osprey	Increase in recreational activity from residents of new development within the SPA	Disturbance to nesting sites	permanent	Nest sites are well managed and monitored by Rothiemurchus Estate. General recreation managed by FCS and Rothiemurchus to encourage recreational access to promoted paths away from nest sites.	No effect

Dotterel	Increase in recreational activity from residents of new development within the SPA	Increase disturbance to nesting from more visitors to relevant habitats in the SPA	permanent	Nest sites are in remote uplands. The number of likely visits generated by new development too small to have an effect.	No effect
Golden eagle	Increase in recreational activity from residents of new development within the SPA	Increase disturbance to nesting from more visitors to relevant habitats in the SPA	permanent	Nest sites are in remote uplands. The number of likely visits generated by new development to the SPA is small and restricted to walkers and a very few cyclists. Eagle nests are already in view of footpaths so some habituation is likely. One recently relocated nest may be vulnerable but is away from promoted paths. The SPA is very large covering the whole central plateau and the number of likely visits generated by new development too small to have an effect.	No effect
Merlin	Increase in recreational activity from residents of new development within the SPA	Increased disturbance to nesting sites	permanent	Nest sites are in remote upland sites in heather moorland. Number of likely visits generated by new development too small to have an effect.	No effect
Peregrine	Increase in recreational activity from residents of new development within the SPA	Increased disturbance to nesting sites	permanent	Nest sites are usually on inaccessible cliff faces away from footpaths, though sometimes within sight. Number of likely visits generated by new development too small to have an effect.	No effect

# Kinveachy Forest SPA

Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
	Increase in recreational activity from residents of new development within the SPA (direct effect)	Disturbance to lekking, brood rearing and feeding habitats from recreational activity.	permanent	SPA is far from development site (>10km by road distance), combined with development scale of fewer than 100 houses, means there is no effect.	No effect
	Increase in recreation within other SPAs that support caper meta-population from residents of new development (indirect effect)	A reduction in productivity in other SPAs reducing the viability of the meta population through decreased migration and in effect increased habitat fragmentation.	permanent	Where there is a likely significant effect identified upon one or more of the other four SPAs (for Capercaillie) within the area this may also have an effect for this SPA. A reduction in productivity within another SPA may restrict movement of birds, especially females, between sites. This could reduce the numbers within this SPA and its genetic diversity, both affecting its distribution and viability of the SPA population. Direct effects have been found in the following SPA  Abernethy Forest – LSE  Craigmore Wood – LSE  NB – indirect effects are also LSE but are not noted here for clarity. However they are considered automatically as they are picked up within each SPAs own screening matrix.	Likely Significant Effect alone (indirect)

	Increase in recreation within non SPA habitat that supports caper metapopulation from residents of new development  (indirect effect)	Reduction in productivity within Glen Feshie, Boat woods, and Carrbridge woods, population reducing the viability of metapopulation though decreased migration and in effective increased habitat fragmentation	permanent	Undesignated areas used by capercaillie in the wider area, e.g. Boat of Garten woods, Kinveachy face, and Inshriach, are not considered likely to experience a significant increase in visitor activity arising from this development. This is due to their distance from the development site and the scale of the development. School Wood itself does not host significant use by capercaillie while SNH has judged that any disturbance to transient birds in Sliemore Wood is not considered to have a likely significant effect on any populations within the SPAs.	No effect
	Occupation of new housing	N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect
	Construction activity	N/A	N/A	The development Site is too far from the SPA to have any possible effects	No effect
Scottish Crossbill	Increase in recreational activity from residents of new development within the SPA	Disturbance to nesting sites and feeding habitat	permanent	There is no evidence that species affected by disturbance; species does not nest on the ground. Therefore birds within SPA are unlikely to be affected.	No effect

Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
Golden eagle	Increase in recreational activity from residents of new development within the SPA	Increase disturbance to nesting from more visitors to relevant habitats in the SPA	permanent	Nest sites are in remote uplands. The number of likely visits generated by new development to the SPA is small and restricted to walkers and a very few cyclists. Eagle nests are already in view of footpaths so some habituation is likely. One recently relocated nest may be vulnerable but is away from promoted paths. The SPA is very large covering the whole central plateau and the number of likely visits generated by new development too small to have an effect.	No effect

Cairngorms SAC					
Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome
Qualifying habitats  (there are 19 qualifying habitats — see Appendix 1 for a	The increase in recreational activity will result in higher pressure on the path networks	Effects may lead to erosion of habitats along pathways and if new routes cross qualifying habitats these may become eroded and	permanent	Abernethy, Rothiemurchus and Glenmore have well established paths ways for walkers and cyclists. The network is both well promoted and extensive. Informal paths are unlikely to be created as a result of this development.	No effect

complete list)	creation of informal route ways	reduced in extent.			
Otter	Increase in recreational activity derived from larger local population	Disturbance to holts and resting places	permanent	It is considered that most otters will avoid existing areas of disturbance and that the pattern of use is unlikely to change with the increase in resident populations because path network will remain unchanged. No effect is therefore anticipated.	No effect
Green shield-moss	The increase in recreational activity will result in higher pressure on the path networks creation of informal route ways	Effects may lead to erosion of habitats along pathways and if new routes cross qualifying habitats which include this species it may be damaged by the erosion.	permanent	Abernethy, Rothiemurchus and Glenmore have well established paths ways for walkers and cyclists. The network is both well promoted and extensive. Informal paths are unlikely to be created as a result of this development.	No effect

Kinveachy Fo	rest SAC				
Qualifying Feature Affected	Possible effect of development	Likely significant effect	Duration	Screening assessment	Screening outcome

Bog Woodland	Increase in recreational activity from residents of new development within the SAC	Erosion of habitat from over use of existing paths and tracks and formation of new informal paths	permanent	There is a well-developed path network already within the SAC for cyclists and walkers and additional informal paths are unlikely to be made as a consequence of the development.  Furthermore, the SAC is far from development site (>10km by road distance), and this, ombined with development scale of fewer than 100 houses, means there is no effect.	No effect
Caledonian Forest	Increase in recreational activity from residents of new development within the SAC	Erosion of habitat from over use of existing paths and tracks and formation of new informal paths	permanent	There is a well-developed path network already within the SAC for cyclists and walkers and additional informal paths are unlikely to be made as a consequence of the development. Furthermore, the SAC is far from development site (>10km by road distance), and this, ombined with development scale of fewer than 100 houses, means there is no effect.	No effect

Qualifying Feature	Possible effect of	Likely significant effect	Duration	Screening assessment	Screening outcome
Affected	development	Chect			outcome
Otter	Increase in recreational activity adjacent to the SAC from residents of new	Disturbance to otters resting and breeding sites. Disturbance to otters feeding	permanent	The proximity of development to the SAC (around 250 m at nearest point) means there could, in theory, be increased riparian usage by walkers with dogs. However otters in the Nethy are already by habituated to human activity,	No effect

	development			especially the riverside walk on the southern bank of the Nethy. Access to the north bank of the Nethy from the development site is hampered by a lack of paths. There is no current path along the Allt Mor and heavy usage there is therefore unlikely.	
	Construction activity close to water courses	Pollution from chemical leakage and siltation clouding water. Disturbance to holts and resting places from plant and workers	Construction period	Construction is over 200m from the nearest part of the SAC, the River Nethy, and is also buffered by pre-existing housing.	Likely significant effect alone (direct)
Sea Lamprey	Construction activity close to water courses	Pollution from chemical leakage and siltation clouding water	Construction period	Construction is over 200m from the nearest part of the SAC, the River Nethy which is also buffered by pre-existing housing. Sea lampreys are not known to occur on the Nethy. However, a small stream runs very close to the site (<25m) and flows north into the Allt Mor, part of the SAC.	Likely significant effect alone (direct)
Freshwater Pearl Mussel	Pollution from waste water	Increased phosphorous levels in the Spey SAC from treated household sewage may affect FWPM	permanent	A 23% increase in effluent is anticipated from the Nethy Bridge WWTW in line with the projected population increase represented by the development. FWPM is particularly sensitive to phosphorous levels.	Likely significant effect alone (direct)
	Construction activity close to water courses	Pollution from chemical leakage and siltation clouding water	Construction period	Construction is over 200m from the nearest part of the SAC, the River Nethy, which is also buffered by pre-existing housing. FWPM are not known to occur on the Nethy. However, a small stream runs very close to the site (<25m) and flows north into the Allt Mor, part of the SAC.	Likely significant effect alone (direct)
Atlantic Salmon	Construction activity close to	Pollution from chemical leakage and siltation	Construction	Construction is over 200m from the nearest part of the SAC, the River Nethy, which is also buffered by pre-existing housing. However, a	Likely significant effect

	water courses	clouding water	period	small stream runs very close to the site (<25m) and flows north into the Allt Mor, part of the SAC.	alone (direct)
All qualifying features	Abstraction of water for domestic supply	Reduction in water level and volume leading to changes in temperature, increases in chemical concentrations, and altered flow dynamics.	permanent	Scottish Water has projected an increase in abstraction from 7.1 million litres per day at 2008 levels to an estimated 10.25 million litres per day by 2030 based on projected increased development within the local area. The abstraction of 7.1 million litres per day had been calculated to result in a 7mm lowering of water level in a roughly 1 km stretch of the River Spey downstream of Kinakyle until flow levels were replenished by compensation flow from the River Druie which would then no longer be subject to abstraction. SNH concluded in 2009 there would be no impact on the integrity of populations of Atlantic salmon, sea lamprey, and freshwater pearl mussel in the River Spey from the scale of water level reductions suggested by projected water use at the Aviemore WTW.	No effect

#### Stage 5: In-combination effects

Regulation 48(1)a. is clear in setting out a requirement to include the assessment of the impacts of any development in combination with other plans and projects. This is to ensure that any cumulative and synergistic effects that are likely to be significant to the conservation objectives are identified. The plans and projects in Table 4 have been searched for any likely insignificant effects that may combine with those identified the proposed development.

Three plans and policies were found to have likely insignificant effects on Natura sites: the National Transport Strategy, Strategic Transport Projects Review and the Cairngorms National Park Proposed Local Development Plan. In the first two cases the potential effects are from the dualling of the A9 on the River Spey SAC. However there is no likely insignificant effect identified upon this Natura site from the School Wood development and so an in-combination effect is not possible. Further consideration of this is therefore not required. However, because a likely significant effect alone has been identified on this site this will be included within the appropriate assessment.

The Proposed Local Development Plan identifies several likely insignificant effects (called 'minor residual effects' or MREs there) upon seven SPAs arising from housing allocations near to them. This screening exercise did not identify such an effect from the proposed development at School Wood, so an in-combination effect is not possible and further consideration of this is not required. No other likely insignificant effect has been identified from this screening exercise.

Table 4: Other Plans, Policies and Strategies

Policy Plan or Project	Aspect	MRE (aka Likely Insignificant Effects)
Scotland's National Transport Strategy 2006	A9 widening	River Spey SAC
Transport Scotland Strategic Transport Projects Review	A9 widening	River Spey SAC
Cairngorms National Park Partnership Plan 2012-2017		
Cairngorms National Park Local Plan - October 2010		
Cairngorms National Park Local Development Plan - draft March 2013	Settlement allocations	<ul> <li>Cairngorms Massif SPA</li> <li>Abernethy Forest SPA</li> <li>Loch Vaa SPA</li> <li>Craigmore wood SPA</li> <li>Anagach SPA</li> <li>Cairngorms SPA</li> <li>Kinveachy Forest SPA</li> </ul>
Cairngorms Nature Action Plan 2013-2017		
River Spey Catchment Management Plan		
Cairngorms National Park Outdoor Access Strategy		
Strategy and Action Plan for Sustainable Tourism in the Cairngorms		
Cairngorms Core Paths Plan		
Cairngorms Forest and Woodland Framework		
Highland Structure Plan		
Highland wide Local Development Plan		
Moray Structure Plan		
Moray Local Plan		
Cragg strategy		

# **Section Four**

# Stages 6-10 Assessment and Conclusions

# Stage 6: Appropriate Assessment

The proposals have been screened in Stages 4 and 5. It was found that for some Natura sites there were likely significant effects upon the qualifying interests. Consequently the following appropriate assessment is required to ascertain the implications for the conservation objectives for each site. The affected sites identified are:

- Abernethy Forest SPA
- Anagach Woods SPA
- Cairngorms SPA
- Craigmore Woods SPA
- Kinveachy Forest SPA
- River Spey SAC

# Abernethy Forest SPA

#### Qualifying species and conservation status

Capercaillie – 2009 Favourable maintained Osprey – 2007 Favourable maintained Scottish crossbill – not monitored to date

#### **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within the site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting process of habitats supporting the species
- No significant disturbance of the species

Is the operation likely to have a significant effect on the qualifying interest? Consider each qualifying interest in relation to the conservation objectives

Capercaillie –Likely significant effect alone (indirect) – see table 3 Osprey – no effect see table 3 Scottish crossbill – no effect see table 3

### **Capercaillie**

For more background information on Capercaillie within the UK and the significance of Badenoch and Strathspey see Appendix 4.

It was concluded in the screening stage that there is a likely significant effect alone arising from the development on the population of capercaillie within this SPA. The following section considers the nature of this effect against the conservation objectives.

# Will the development adversely affect the site's conservation objectives?

In this assessment, the implications of the planning application for the site's conservation objectives are assessed in order to answer the question: "Can it be ascertained that the proposal will not adversely affect the integrity of the site?"

The over-arching conservation objective of SPAs is to avoid deterioration of the habitats of the qualifying species, or significant disturbance to the qualifying species, thus ensuring that the integrity of the sites is maintained. This over-arching conservation objective can be broken down into the following detailed elements:

To ensure that the following are maintained in the long term for the qualifying species:

- 1. Population of the species as a viable component of the sites
  - Distribution of the species within sites
- 2. Distribution and extent of habitats supporting the species
  - Structure, function and supporting processes of habitats supporting the species
- 3. No significant disturbance of the species

#### In-combination effects

As described at Stage 5 (screening); identification of in-combination effects is required to identify where cumulative and synergistic effects are likely to be significant. The screening did not identify any combinations of effect upon the Abernethy Forest SPA that are likely to be significant.

#### Assessment against the Conservation Objectives

#### **Capercaillie**

I. Population of capercaillie as a viable component of the sites and distribution of capercaillie within the Special Protection Areas

The development site is not within the SPA and does not have any habitat that is used by

capercaillie. Survey records from within the SPA by the RSPB show that there are leks and brood rearing areas close to the path network and in such areas an increase in visitors here may directly affect the birds. This issue is dealt with under disturbance effects below.

Capercaillie will move from site to site, sometimes over large distances (Moss et al, 2006). The network for the species that includes Abernethy Forest, Anagach Woods, Cairngorms, Craigmore Wood and Kinveachy Forest SPAs, as well as other non-designated woodlands, all of which support significant elements of the Strathspey meta-population impacts upon these woodlands may have an indirect effect upon the capercaillie within this SPA. . However the development site is not considered an important element in the distribution network.

It is concluded that the population of capercaillie as a viable component of the SPA, and the distribution of capercaillie within the SPA, will not be directly affected by the development. However it could be indirectly affected by the proposals if the meta population using the Craigmore Wood SPA were to be subject to an increase in disturbance as a result of this development. This is also discussed in point 3 below.

# 2. Distribution and extent of habitats supporting capercaillie and structure, function and supporting processes of habitat supporting capercaillie

The proposed development lies outwith the SPA. Although pinewood habitat occurs on site, there have been no recent records of the species there. There is therefore no effect upon the distribution, extent or function of supporting habitat.

It is concluded that there will be no effect upon this conservation objective.

# 3. No significant disturbance of capercaillie

There are three ways in which the proposed housing development could cause increased disturbance to capercaillie:

- Disturbance during construction.
- Disturbance arising directly from the housing site once it is occupied.
- An increased number of people recreating within the SPA.

#### **Disturbance during construction**

It was concluded at screening in table 3 that there is no effect from this source.

# Disturbance arising directly from the housing site once it is occupied

It was concluded at screening in table 3 that there is no effect from this source.

#### An increased number of people recreating within the SPA

According to the Natura appraisal prepared by SNH, the development would see the provision of 44 affordable homes, which, based on an average figure of 3.2 people per unit, would result in an extra 140 people living in Nethy Bridge. A further 14 private market homes in the development would see an estimated 31 extra people, based on a current occupancy rate in Nethy Bridge for that type of housing of 2.2 people per house. Taken together, the development would provide housing for approximately 171 people, representing 27% of the village population as determined by the 2011 census (638 people).

It is likely that these people would use the already popular and promoted paths and tracks around the village, particularly those within or adjacent to School Wood. There could be some displacement of shorter-distance, daily recreational use to other local routes, including on the north side of the

SPA, such as Dell Wood and Mondhuie Wood. These areas are rarely used by capercaillie. For longer, weekend walks and off-road cycling, people in the development would likely move further afield including to the tracks in the SPA between Dell Road and Forest Lodge, as well as the minor public road around Loch Garten. Car parking exists around Forest lodge, and although it is not promoted to the general public, some use is made by them. The access road is shut to visitors in the mornings during the lekking period to reduce any potential disturbance.

Abernethy Forest SPA is a large area and the distribution of birds within it is uneven. However there are points that are particularly well inhabited by the birds and these areas also contain key path routes well used by visitors. The usual location of the nearest Abernethy lek to the proposed development site is approximately 650m from a forest track/road, i.e. further than both the median alert distance from Ruddock & Whitfield's work (2007) and the 75 m buffer for exclusion of human activity at known leks recommended by the experts in Marshall (2005). The next nearest lek site is fully protected from disturbance by people because it is located close to the RSPB Loch Garten osprey nest. This is the lek site that the public are encouraged to view from the osprey centre, which has received approximately 40,000 visitors annually (though more recent figures suggest 27-35,000). The third nearest lek site is located around 5km from the village, ~125m from a track and this lies within the medium alert distance from (Ruddock & Whitfield's work (2007). There are also multiple records of capercaillie broods close to the tracks nearest to this third lek site.

It is concluded that there would be a small increase in use of the tracks between Dell Road and Forest Lodge for longer walks, cycles and dog walks, e.g. at weekends. Most of the capercaillie records around these tracks are from the central and southern sector which is furthest from the village, and suggest it is used for lekking and by females with young. Any increased use by walkers, dogs and cycles is likely to be small and occasional, focussed at weekends and holiday periods. Given the overall length of the walk / cycle they will be undertaking if they are using this route, it is likely that relatively few dogs roam this widely here. It is unlikely there is significant off-path use by people in this area, because of the distance from the village and car parks, picnic areas etc; the length of the route that walkers / cyclists / skiers will be undertaking; and the general difficulty and lack of appeal of much of the off-path terrain e.g. deep vegetation; bogs. It is expected that these patterns and the type of recreational use will remain similar and as such displacement distances already present are unlikely to change. The area of suitable habitat available for capercaillie in this area has increased recently as a consequence of a track that has fallen into dis-use, and habitat quality should improve further as planned bog re-instatement works are implemented. Furthermore, although not considered necessary for Abernethy SPA, planning conditions designed to mitigate impacts on Craigmore Wood SPA and which pertain to targeted mitigation measures such as leaflets, will serve to reinforce requests for responsible behaviour amongst recreational users within this SPA.

Taking all these factors into account, it is concluded that the School Wood proposal would not result in significant disturbance to capercaillie. Because this conservation objective will be maintained, the conservation objectives to maintain the population of capercaillie as a viable component of the SPA and the distribution of capercaillie within the SPA will also be met. As a consequence it is concluded the development would not adversely affect site integrity for the qualifying interests of Abernethy SPA.

# **Additional mitigation**

No additional mitigation is required.

#### Likely insignificant effects

There is no likely insignificant effect remaining on this site.

#### **Conclusion on site integrity**

There will be no adverse effect upon the integrity of the Abernethy Forest SPA.

# Craigmore wood SPA

# Qualifying species and conservation status

Capercaillie (Tetrao urogallus); unfavourable – no change

# **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure that the following are maintained in the long term for the qualifying species:

- 1. Population of the species as a viable component of the sites
  - Distribution of the species within sites
- 2. Distribution and extent of habitats supporting the species
  - Structure, function and supporting processes of habitats supporting the species
- 3. No significant disturbance of the species

#### In-combination effects

As described at Stage 5 (screening); identification of in-combination effects is required to identify where cumulative and synergistic effects are likely to be significant. The screening did not identify any combinations of effect upon the Craigmore Wood SPA that are likely to be significant.

Is the operation likely to have a significant effect on the qualifying interest? Consider each qualifying interest in relation to the conservation objectives

Capercaillie – Likely significant effect alone (indirect); table 3

# Assessment against the Conservation Objectives Capercaillie

I. Population of capercaillie as a viable component of the sites and distribution of capercaillie within the Special Protection Areas

The development site is not within the SPA and does not have any habitat that is used by capercaillie. The SPA lies less than 1km away to the north of the development site. This is within walking distance from the development but recreational disturbance issues are discussed in point 3

below.

Capercaillie will move from site to site, sometimes over large distances (Moss et al, 2006). The network for the species that includes Abernethy Forest, Anagach Woods, Cairngorms, Craigmore Wood and Kinveachy Forest SPAs, as well as other non-designated woodlands, all of which support significant elements of the Strathspey meta-population impacts upon these woodlands may have an indirect effect upon the capercaillie within this SPA. . However the development site is not considered an important element in the distribution network.

It is concluded that the population of capercaillie as a viable component of the SPA, and the distribution of capercaillie within the SPA, will not be directly affected by the development. It could be indirectly affected by the proposals if the meta population using the Abernethy Forest SPA were to be subject to an increase in disturbance as a result of this development. The section above concludes that there is no such effect upon Abernethy and consequently there will be no such indirect effectsupon this SPA..

# 2. Distribution and extent of habitats supporting capercaillie and structure, function and supporting processes of habitat supporting capercaillie

The proposed development lies outwith the SPA and does not include any habitat used by capercaillie. There is therefore no effect upon the distribution, extent or function of supporting habitat.

It is concluded that there will be no effect upon this conservation objective.

# 3. No significant disturbance of capercaillie

There are three ways in which the proposed housing development could cause increased disturbance to capercaillie:

- Disturbance during construction.
- Disturbance arising directly from the housing site once it is occupied.
- An increased number of people recreating within the SPA.

#### Disturbance during construction

It was concluded at screening in table 3 that there is no effect from this source.

# Disturbance arising directly from the housing site once it is occupied

It was concluded at screening in table 3 that there is no effect from this source.

#### An increased number of people recreating within the SPA

Existing levels of recreational use of the Craigmore Wood SPA are considered to be low. The most popular routes are the promoted Castle Roy loop from Aultmore to the B970 that passes through a short section of the SW corner of the route, and the tracks off the B970 Nethy Bridge to Grantown on Spey road. These parts of the wood are little used by capercaillie. The access points from the road to the areas where capercaillie are present aren't obvious, numbers of walkers are currently very low (no one identified they used them in the core paths plan consultation) and are thought be mainly people from the scattered houses nearer the east end of Craigmore Wood with occasional people from the village and visiting birdwatchers. There are management measures by its owners (RSPB) that are in place at Craigmore Wood to reduce disturbance, these include: not promoting the Wood and having signage at key entry points providing advice about responsible dog control.

New arrangements in the area for Ranger services include specific provision for education and awareness raising activity focused on responsible access, including with dogs, for the local population and visitors. This service is integrated into the CNPA ranger programme. A similar service was running in the Boat of Garten area as a result of earlier assessment. This has now been superseded by a joint service targeting Boat of Garten and Nethybridge communities.

There could be a small increase in use of paths and tracks in the western part of Craigmore Wood SPA arising from the development. This area currently receives low levels of recreational use and is not close to the area most used by capercaillie. The tracks in more sensitive areas of Craigmore Wood are thought to be used by people even less frequently. It is unlikely that overall levels of recreational use will increase significantly as a result of this development because the access points are not obvious, the remoteness from the village, and the lack of an obvious destination. There is a risk however that, despite low levels of access, irresponsible dog-walking could have a deleterious impact on capercaillie. In such an area where there is a low frequency of users the likely hood of accompanying dogs being allowed off lead is possibly greater. In addition where numbers of users are low a small increase may have a disproportionate effect in disturbing the birds, especially if accompanied by dogs because these are seen as the major factor in disturbance.

It is concluded that there could be a significant effect upon this conservation objective and therefore additional mitigation should be considered.

# **Additional mitigation**

Building on the evidence and experiences learned from Boat of Garten Woods, it is considered that this risk of disturbance from dogs can be significantly reduced through improving awareness among access takers via a local ranger service, on site signage and through targeted leaflets. This would replicate the current situation at Boat Woods where the three measures are complimentary, the signage is on site at the point of entry, the ranger activity addresses wider awareness within the community and allows for personal contact on site and the leaflet is available in the home at the point where people are deciding about the location of their walk. Currently this tiered provision is not available for Craigmore wood where the missing element is the leaflet. Therefore production and distribution to householders of such a leaflet raising awareness of capercaillie disturbance issues and urging responsible access must be a condition of any planning consent and these must be distributed to the new residents prior to occupation. This must make specific reference to responsible dog ownership in relation to the birds.

It is considered that the requirement is to distribute this leaflet to the new residents of the development, in order to establish a 'bird friendly culture'. The leaflet could also be distributed around the remainder of the village. This would have additional benefits in raising awareness within the community as a whole and influencing good behaviour among this larger population. This is not considered necessary for the purposes of the HRA assessment however it is recognised as an additional benefit.

#### Likely insignificant effects

With the mitigation there would be no likely insignificant effect remaining on this site.

#### Conclusion on site integrity

With the inclusion of mitigation, it is concluded there will be no adverse effect upon the integrity of the Craigmore Wood SPA

#### Anagach Woods SPA

#### Qualifying species and conservation status

Capercaillie; not monitored to date

#### **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure that the following are maintained in the long term for the qualifying species:

1. Population of the species as a viable component of the sites

Distribution of the species within sites

2. Distribution and extent of habitats supporting the species

Structure, function and supporting processes of habitats supporting the species

3. No significant disturbance of the species

#### In-combination effects

As described at Stage 5 (screening); identification of in-combination effects is required to identify where cumulative and synergistic effects are likely to be significant. The screening did not identify any combinations of effect upon Anagach Woods that are likely to be significant.

Is the operation likely to have a significant effect on the qualifying interest? Consider each qualifying interest in relation to the conservation objectives

Capercaillie - Likely significant effect alone (indirect); table 3

#### **Assessment against the Conservation Objectives**

#### **Capercaillie**

I. Population of capercaillie as a viable component of the sites and distribution of capercaillie within the Special Protection Areas

The development site is not within the SPA and does not have any habitat that is used by capercaillie. The development is 6km from this SPA and so the likelihood of significant numbers of visitors from the development sufficient to displace the capercaillie is considered to be low. It is concluded that there are no direct effects.

Anagach Woods is an important element in the distribution network for the species that includes Abernethy Forest, Cairngorms, Craigmore Woods and Kinveachy SPAs, as well as other non-designated woodlands, all of which support significant elements of the Strathspey meta-population. It has been discussed above that an effect on one or more of these components may have an indirect effect on the dispersal of birds around the Strath. This in turn may affect the viability of the population in this SPA. It is known that the population of capercaillie within the woods has very low productivity. The numbers of birds within the woods is low and in decline. It depends largely upon the dispersal of birds from other areas. This potentially makes it more vulnerable to secondary effects arising from a reduced immigration from other parts of the Strath.

It has been concluded above that there will be no effect on the integrity of the Abernethy Forest and Craigmore Wood SPAs and as such, the population dynamics will be maintained. Consequently, the Anagach Woods SPA would not be indirectly affected by the proposals, and there will be no effect upon this conservation objective.

## 2. Distribution and extent of habitats supporting capercaillie and structure, function and supporting processes of habitat supporting capercaillie

The proposed development lies out with the SPA and does not include any habitat used by capercaillie. There is therefore no effect upon the distribution, extent or function of supporting habitat.

It is concluded that there will be no effect upon this conservation objective.

#### 3. No significant disturbance of capercaillie

There are three ways in which the proposed housing development could cause increased disturbance to capercaillie:

- Disturbance during construction.
- Disturbance arising directly from the housing site once it is occupied.
- An increased number of people recreating within the SPA.

#### **Disturbance during construction**

It was concluded at screening in table 3 that there is no effect from this source.

#### Disturbance arising directly from the housing site once it is occupied

It was concluded at screening in table 3 that there is no effect from this source.

#### An increased number of people recreating within the SPA

The distance from the development site combined with the availability of alternative, more local walking areas means that it is considered unlikely that a significant number of residents from the development are likely to use Anagach woods.

The location of the car parks (with one exception) lies to the south and west of the woodlands which is away from key habitat. There is one car park (Poor House) that lies closer however this is less well known as it lies on the minor road accessed through the town away from the direction of the Development. It is less likely that any visitors will use this car park than the others.

## It is concluded that there is no effect of disturbance and consequently to this conservation objective

#### **Additional mitigation**

No additional mitigation is required.

#### Likely insignificant effects

There is no likely insignificant effect remaining on this site.

#### **Conclusion on site integrity**

There will be no adverse effect upon the integrity of the Anagach Woods SPA.

#### Cairngorms SPA

#### Qualifying species and conservation status

Capercaillie

Dotterel, 1999. Favourable maintained

Golden eagle, 2003. Favourable maintained

Merlin

Osprey, 2006. Favourable maintained

Peregrine, 2002. Favourable maintained

Scottish Crossbill - not monitored to date

#### **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure that the following are maintained in the long term for the qualifying species:

1. Population of the species as a viable component of the sites

Distribution of the species within sites

2. Distribution and extent of habitats supporting the species

Structure, function and supporting processes of habitats supporting the species

3. No significant disturbance of the species

#### **Effect on conservation objectives**

Dotterel (Charadrius moninellus) - no effect; see table 3

Golden eagle (Aquila chrysaetos) - no effect; see table 3

Merlin (Falco columbarius) - no effect; see table 3

Osprey (Pandion haliaetus) - no effect; see table 3

Peregrine (Falco peregrinus) – no effect; see table 3

Scottish crossbill (Loxia scotica) – no effect; see table 3

Capercaillie (Tetrao urogallus) – Likely significant effect alone (indirect); see table 3

#### **Capercaillie**

It was concluded in the screening stage that there is a likely significant effect alone arising from the development on the population of capercaillie within this SPA. The following section considers the nature of this effect against the conservation objectives.

#### Will the development adversely affect the site's conservation objectives?

In this assessment, the implications of the planning application for the site's conservation objectives are assessed in order to answer the question: "Can it be ascertained that the proposal will not adversely affect the integrity of the site?"

The over-arching conservation objective of SPAs is to avoid deterioration of the habitats of the qualifying species, or significant disturbance to the qualifying species, thus ensuring that the integrity of the sites is maintained. This over-arching conservation objective can be broken down into the following detailed elements:

To ensure that the following are maintained in the long term for the qualifying species:

- Population of the species as a viable component of the sites
- Distribution of the species within sites
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

#### In-combination effects

As described at Stage 5 (screening); identification of in-combination effects is required to identify where cumulative and synergistic effects are likely to be significant. The screening did not identify any combinations of effect upon the Cairngorms SPA that are likely to be significant.

#### Assessment against the Conservation Objectives

#### **Capercaillie**

## I. Population of capercaillie as a viable component of the sites and distribution of capercaillie within the Special Protection Areas

The development site is not within the SPA and does not experience significant usage by capercaillie. Surrounding woodlands, such as Sliemore Wood and Culstank Moss, also do not show significant usage by the species.

Capercaillie will move from site to site, sometimes over large distances (Moss et al, 2006). The development site is not considered an important element in the distribution network for the species that includes Abernethy Forest, Anagach Woods, Cairngorms, Craigmore Woods and Kinveachy SPAs, as well as other non designated woodlands, all of which support significant elements of the Strathspey meta-population.

It has been concluded above that there will be no effect on the integrity of the Abernethy Forest and Craigmore Wood SPAs and as such, the population dynamics will be maintained. Consequently, the Cairngorms SPA would not be indirectly affected by the proposals, and there will be no effect upon this conservation objective.

## 2. Distribution and extent of habitats supporting capercaillie and structure, function and supporting processes of habitat supporting capercaillie

The proposed development lies outwith the SPA and does not include any habitat used by capercaillie. There is therefore no effect upon the distribution, extent or function of supporting habitat.

It is concluded that there will be no effect upon this conservation objective.

#### 3. No significant disturbance of capercaillie

There are three ways in which the proposed housing development could cause increased disturbance to capercaillie:

- Disturbance during construction.
- Disturbance arising directly from the housing site once it is occupied.
- An increased number of people recreating within the SPA.

#### Disturbance during construction

It was concluded at screening in table 3 that there is no effect from this source.

#### Disturbance arising directly from the housing site once it is occupied

It was concluded at screening in table 3 that there is no effect from this source.

#### An increased number of people recreating within the SPA

The SPA lies around 9km away from the development site at its closest point (Glenmore), and is further by road (around 16km to the nearest road-accessible point at Inverdruie). The number of people using the SPA area annually is estimated at around 350,000 for the Rothiemurchus area, 55-60,000 using the old logging way and 170,000 using Glenmore Forest Park (Robinson 2013). In addition it is estimated, from car counts, that 1.4m visitors use the main road. These figures are quoted in Cragg It is clear that the birds generally use areas less well used by people. This is often good habitat, for example bog woodland areas which are particularly difficult to access. In other places large core refuge areas exist where there are few paths and the distances between them are greater giving large coherent refuge areas. Only in two areas are leks within 100m of tracks and one of these is considered to have recently moved further away. The distance from the development site, the relatively small-scale nature of the development, combined with the availability of alternative, more local walking areas means that it is considered unlikely that a significant number of residents from the development would use the Cairngorms SPA.

## It is concluded that there is no effect of disturbance and consequently to this conservation objective.

#### Other qualifying species

For Dotterel, golden eagle, merlin, osprey, peregrine and Scottish crossbill there are no likely significant effects; either alone or in combination.

#### **Additional mitigation**

No additional mitigation is required.

#### Likely insignificant effects

There is no likely insignificant effect remaining on this site.

#### **Conclusion on site integrity**

There will be no adverse effect upon the integrity of the Cairngorms SPA.

#### Kinveachy Forest SPA

#### Qualifying species and conservation status

Capercaillie (Tetrao urogallus); 2009 Favourable maintained Scottish crossbill – not monitored to date

#### **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure that the following are maintained in the long term for the qualifying species:

1. Population of the species as a viable component of the sites

Distribution of the species within sites

2. Distribution and extent of habitats supporting the species

Structure, function and supporting processes of habitats supporting the species

3. No significant disturbance of the species

#### In-combination effects

As described at Stage 5 (screening); identification of in-combination effects is required to identify where cumulative and synergistic effects are likely to be significant. The screening did not identify any combinations of effect upon the Kinveachy Forest SPA that are likely to be significant.

Is the operation likely to have a significant effect on the qualifying interest? Consider each qualifying interest in relation to the conservation objectives

Capercaillie – Likely significant effect alone (indirect); see table 3 Scottish Crossbill - no effect; see table 3

#### **Assessment against the Conservation Objectives**

#### **Capercaillie**

## I. Population of capercaillie as a viable component of the sites and distribution of capercaillie within the Special Protection Areas

The development site is not within the SPA and does not experience significant usage by capercaillie. Surrounding woodlands, such as Sliemore Wood and Culstank Moss, also do not show significant usage by the species.

Capercaillie will move from site to site, sometimes over large distances (Moss et al, 2006). The development site is not considered an important element in the distribution network for the species that includes Abernethy Forest, Anagach Woods, Cairngorms, Craigmore Woods and Kinveachy Forest SPAs, as well as other non designated woodlands, all of which support significant elements of the Strathspey meta-population.

It has been concluded above that there will be no effect on the integrity of the Abernethy Forest and Craigmore Wood SPAs and as such, the population dynamics will be maintained. Consequently, the Kinveachy Forest SPA would not be indirectly affected by the proposals, and there will be no effect upon this conservation objective.

## 2. Distribution and extent of habitats supporting capercaillie and structure, function and supporting processes of habitat supporting capercaillie

The proposed development lies out with the SPA and does not include any habitat used by capercaillie. There is therefore no effect upon the distribution, extent or function of supporting habitat.

It is concluded that there will be no effect upon this conservation objective.

#### 3. No significant disturbance of capercaillie

There are three ways in which the proposed housing development could cause increased disturbance to capercaillie:

- Disturbance during construction.
- Disturbance arising directly from the housing site once it is occupied.
- An increased number of people recreating within the SPA.

#### Disturbance during construction

It was concluded at screening in table 3 that there is no effect from this source.

#### Disturbance arising directly from the housing site once it is occupied

It was concluded at screening in table 3 that there is no effect from this source.

#### An increased number of people recreating within the SPA

The development site is over 10 km from the SPA at its closest point. This is well beyond the typical, daily walking radius of 2km and so it is likely that any usage by walkers from the development is likely to be medium and long distance walking of a less frequent nature. The deer fence that forms the eastern boundary is only crossed by high stiles over which it is difficult to take a bike. The area between the SPA and the A9 does have regular cycle activity on the existing estate tracks, but a low

number of additional cycle users are not thought to have a significant effect on capercaillie there.

## It is concluded that there is no effect of disturbance and consequently to this conservation objective

#### **Additional mitigation**

No additional mitigation is required.

#### Likely insignificant effects

There is no likely insignificant effect remaining on this site.

#### **Conclusion on site integrity**

There will be no adverse effect upon the integrity of the Kinveachy Forest SPA.

#### River Spey SAC

#### Qualifying species and conservation status

Atlantic salmon, 2005. Unfavourable recovering Freshwater pearl mussel, 2005. Unfavourable recovering Otter, 2007. Favourable maintained

Sea lamprey, 2007. Favourable maintained

#### **Conservation objectives**

To avoid deterioration of the habitats of the qualifying species (listed above) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying features that the following are maintained in the long term:

Population of the species, including range of genetic types for salmon, as a viable component of the site

Distribution of the species within site

Distribution and extent of habitats supporting the species

Structure, function and supporting processes of habitats supporting the species

No significant disturbance to the species

Distribution and viability of freshwater pearl mussel host species

Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species

Is the operation likely to have a significant effect on the qualifying interest? Consider each qualifying interest in relation to the conservation objectives

#### Effect on conservation objectives

Construction of the 58 houses would take place over 200m from the nearest part of the SAC, the River Nethy, which is also buffered by pre-existing housing. However, a small stream runs very close to the site (<25m) and flows north into the Allt Mor, part of the SAC located around 800m away from the site. Spillage of chemicals or sedimentation could occur during the construction phase close to this stream.

This could affect the population of the species as a viable component of the site and the distribution of the species within site. These are considered below:

#### **Qualifying species**

Atlantic salmon (Salmo salar)

**Likely significant effect alone:** Accidental chemical pollution or sedimentation arising during construction may affect the distribution of the species either directly from toxic effects on individuals or through effects upon food source and supporting habitats.

• Freshwater pearl mussel (Margaritifera margaritifera)

**Likely significant effect alone:** Accidental chemical pollution or sedimentation arising during construction may affect the distribution of the species either directly from toxic effects on individuals or through effects upon food source and supporting habitats.

**Likely significant effect alone:** Increased phosphorous levels in the SAC from treated household sewage may increase algae, resulting in harm to pearl mussels.

• Otter (Lutra lutra)

**Likely significant effect alone:** Accidental chemical pollution or sedimentation arising during construction may affect the distribution of the species either directly from toxic effects on individuals or through effects upon food source and supporting habitats.

**No effect:** Recreational activity in or near the riparian zone of the SAC from residents of the development may lead to increase in disturbance to otter. This may affect the distribution of the species within the site as well as being significant disturbance. However the footpath network is well established and it is likely that otter have already become habituated or avoid them. In this situation additional use of the paths is not likely to increase the disturbance to the species.

• Sea lamprey (Petromyzon marinus)

**Likely significant effect alone:** Accidental chemical pollution or sedimentation arising during construction may affect the distribution of the species either directly from toxic effects on individuals or through effects upon food source and supporting habitats.

All qualifying features

**No effect:** Reduction in water level and volume leading to changes in temperature; increases in chemical concentrations; and altered flow dynamics.

It is concluded that there could be an effect upon these conservation objectives and therefore additional mitigation should be considered.

#### **Additional mitigation**

There are a number of mitigations required for the above effects:

#### 1. Construction method statement

A condition must be applied to a permission that requires a construction method statement (CMS) to be agreed with the CNPA prior to the start of construction on site. The CMS must clearly demonstrate that risks to watercourses and ground water are eliminated through application of good site management in accordance with accepted best practice and guidelines. This must be in accordance with recognising best practice guidelines in particular SEPA PPG I, 5 and 6. Where required through statute, Controlled Activity Regulations (CAR) must be complied with. Development must not commence until it has been demonstrated to the planning authority that the measures in the CMS have been adopted for onsite management.

This is a well-practised approach that is applied to many construction projects and it will effectively manage these risks. This will mitigate the effects upon otter, Atlantic salmon, sea lamprey and freshwater pearl mussel and ensure that there will be no effect upon the distribution of the species or their supporting habitats

#### 2. SUDS

A condition must be applied requiring fully detailed SUDS at detailed planning permission stages. This must clearly demonstrate that flooding and particle discharge into the river arising from the site will be prevented. The SUDS must be fully implemented prior to the point it is required for effective operation.

The approved scheme will mitigate the effect of run-off from the site and its required implementation prior to development will ensure compliance.

#### 3. Waste Water

A condition must be applied to this application preventing occupation of the development until it has been demonstrated that there is both sufficient capacity at the local waste water treatment works and the ability to remove pollutants to a level where there will be no adverse effects on freshwater pearl mussel in the River Spey SAC. This should be based on the recommended water quality standards for freshwater pearl mussel prevalent at the time of construction.

This will prevent an increase in pollutant arising from the development by ensuring it is treated to acceptable standards. This will mitigate likely significant effect affecting the distribution and supporting habitat for freshwater pearl mussel.

#### Minor residual effects

There is no minor residual effect remaining upon this site.

#### **Conclusion on site integrity**

With the inclusion of mitigation, it is concluded there will be no adverse effect upon the integrity of the River Spey SAC.

Regulation 48(3) requires the authority to consult with the appropriate conservation body and to have regard to their representations. In Scotland this is SNH. This report and its conclusion was subject to such consultation.

Wider consultation of the draft report is at the discretion of the competent authority. In the case of School Wood it was decided that consultation with the RSPB should be undertaken because of their central interest in capercaillie conservation and the relevant data they hold.

The representation from SNH and RSPB have been summarised in appendix 5 along with the CNPA response and changes made to this HRA.

#### Stage 8: Additional mitigation

Natura site regulation 48(6) requires the competent authority to:

"(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority shall have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which they propose that the consent, permission or other authorisation should be given"

In cases where significant effects have been identified upon the qualifying features the authority must give consideration to what additional measures may be applied by way of a condition or agreement to ensure that there are no adverse effects so that the integrity of the site is maintained. The Appropriate Assessment details a number of mitigation measures which are summarised below:

#### Craigmore Wood SPA

• The application must be conditioned to require an Information leaflet to raise awareness of the issues around capercaillie and disturbance and on responsible access. This must be distributed to new residents prior to occupation.

#### River Spey SAC

- A condition requiring a Construction Method Statement to be approved prior to construction on site
- A condition requiring an approved SUDS in operation prior to the point is functionally needed
- A condition is required to ensure that waste water treatment is sufficient to prevent effects on Freshwater Pearl Mussel

#### Stage 9: Conclusion on the integrity test

This assessment based upon the best available scientific evidence and advice offered from SNH and has shown that, with all the additional mitigation measures, there is no likely significant effect from the proposed development upon the qualifying features or the conservation objectives for the following Natura sites:

- Cairngorms SAC
- Kinveachy Forest SAC
- River Spey SAC
- Abernethy Forest SPA
- Anagach Woods SPA
- Cairngorms SPA
- Cairngorms Massif SPA
- Craigmore Wood SPA
- Kinveachy Forest SPA

We therefore conclude that the proposed development, subject to the mitigation measures identified in this appropriate assessment and applied to any consent, will not adversely affect the integrity of any of these sites.

#### **Stage 10: Section 49 (derogation)**

The conclusion that there is no adverse effect upon the integrity of any of the Natura sites covered in this report means that regulation 49 is not relevant.

#### References

#### **Habitat Regulations process**

Council Directive 92/43/EEC "the Habitats Directive" EEC adopted 1992

Managing Natura 2000 sites – EU communities 2000

Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC - EC 2007

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)

Welsh Assembly Government TAN 5: Nature Conservation and Planning - 2009

Habitat Regulations Appraisal of Plans – Guidance for Plan Making Bodies in Scotland SNH/DTA August 2012 (Version 2.0)

#### Other sources

Cairngorms National Park Core Paths Plan2010 - CNAP - 2010

CRAGG Visitor, visitor infrastructure and tourism Audit. Robinson 2013

Cairngorms Outdoor Access Strategy 2007-2012 - CNPA 2007

Census data 2001 - General Census Office for Scotland

National Travel Survey 2010 Statistical release Department of Transport. 2011

Scottish Recreation Survey, Annual Summary report 2011. CR No. 535 SNH 2012

#### **Capercaillie Impacts**

Eaton, M.E., Marshall, K.B. & Gregory, R.D. (2007). Status of Capercaillie *Tetrao urogallus* in Scotland during winter 2003/4. Bird Study 54: 145 – 153.

Ewing, SR, Eaton, MA, Poole, T, Davies, M, & Haysom, S. (2010). The size of the Scottish population of capercaillie Tetrao urogallus: results of the fourth national survey. Bird Study Vol.59, Issue 2, pp 126 – 138.

Fernandez-Juricic, E, Jimenez, MD & Lucas, E. (2001). Alert distance as an alternative measure of bird tolerance to human disturbance: implications for park design. Environmental Conservation 28(3): 263 – 269.

Jenkinson, S. (2011). People and Dogs in the Outdoors. Report for CNPA.

Hjelford, O., Wegge, P, Rolstad, J. Ivanova, M & Beshkarev, A.B. (2000). Spring-summer movements of the male capercaillie *Tetrao urogallus*: A test of the 'landscape mosaic' hypothesis.

Marshall K. (2005). Capercaillie and recreational disturbance study. Unpublished report for CNPA, FCS and SNH.

Moss, R., Oswald, J. & Baines, D. (2001). Climate change and breeding success: decline of the capercaillie in Scotland. *J.Anim.Ecol.*, 70, 47-61.

Moss, Robert; Picozzi, Nicholas; Catt, David C. (2006). Natal dispersal of capercaillie *Tetrao urogallus* in northeast Scotland. Wildlife Biology, 12 (2). 227 – 232.

Moss, R. (2008). The distribution of capercaillie droppings in relation to sources of disturbance: a pilot study at Anagach Woods. Draft progress report to Capercaillie BAP Group.

Moss, R. (2009). The distribution of capercaillie droppings in relation to sources of disturbance: Part II, Boat of Garten Wood. Draft progress report to Capercaillie BAP Group.

Moss, R. (2010). The distribution of capercaillie droppings in relation to sources of disturbance: Part II, Boat of Garten Wood. Draft progress report to Capercaillie BAP Group, Version 2.

Moss, R. (2010). The distribution of capercaillie droppings in relation to sources of disturbance: Part III, Glenmore Forest Park. Draft progress report to Capercaillie BAP Group.

Poole, T. (2010). Capercaillie conservation in Scotland – importance of Strathspey metapopulation. Unpublished Report.

Scottish Settlements: Urban and Rural Areas in Scotland. <a href="http://www.groscotland.gov.uk/files/00settle.pdf">http://www.groscotland.gov.uk/files/00settle.pdf</a>

Storch, I (1995). Annual home ranges and spacing patterns of capercaillie in Central Europe. Journal of Wildlife Management 59(2): 392 – 400.

Storch, I. & Segelbacher, G. (2000). Genetic correlates of spatial population structure in central European capercaillie *Tetrao urogallus* and black grouse *T. tetrix*: a project in progress. Wildlife Biology 6(4): 305 – 310.

Summers, R.W., McFarlane, J & Pearce-Higgins, J.W. (2007). Measuring avoidance by capercaillies *Tetrao urogallus* of woodland close to tracks. Wildlife Biology 13(1): 19-27

Sutherland, W.J., Newton, R. & Green, R.E. (2004). Bird Ecology and Conservation: A Handbook of Techniques. Oxford University Press.

Thiel, D., Jenni-Eiermann, S. & Palme, R. (2005). Measuring corticosterone metabolites in droppings of capercaillie. *Annals of the New York Academy of Sciences*, 1046, 1-13.

Thiel, D., Menoni, E., Brenot, J.B. & Jenni, L. (2007). Effects of recreation and hunting on flushing distance of capercaillie. The Journal of Wildlife Management 71(6): 1784 – 1792.

Thiel, D., Jenni-Eiermann, S., Braunisch, V., Palme, R. & Jenni, L. (2008). Ski tourism affects habitat use and evokes a physiological stress response in capercaillie *Tetrao urogallus*: a new methodological approach. *J. Appl. Ecol.*, 45 (3), 845-853.

Watson, A & Moss, R 2008. Grouse. London: Collins.

Wegge, P., Rolstad, J., & Gjerde, I. (1992). Effects of boreal forest fragmentation on capercaillie grouse: empirical evidence and management implications. In McCullough, D.R. & Barret, R.H. (Eds.) Wildlife (2001): Populations. Elsevier, New York, pp. 738 – 749.

Wegge, P., Finne, M.H. & Rolstad J. (2007). GPS satellite telemetry provides new insight into capercaillie *Tetrao urogallus* brood movements. Wildlife Biology 1:Suppl.I

Zeitler, A. (2000). Human disturbance, behaviour and spatial distribution of black grouse in skiing areas in the Bavarian Alps. *Cahiers d'Ethologie*, 20, 1-22.

#### Freshwater pearl Mussel

Young, M. (2005). A literature review of the water quality requirements of the freshwater pearl mussel (Margaritifera margaritifera) and related freshwater bivalves. Scottish Natural Heritage Commissioned Report No. 084 (ROAME No. F01AC609d).

Moorkens, E. A. (2006). Irish non-marine molluscs – an evaluation of species threat status. *Bulletin of the Irish Biogeographical Society* **30**, 348–371

Törnblom, J., Degerman, E. Angelstam, P., Henrikson, L., Söderberg, H., Norrgrann, O., Andersson, K. 2008. Predicting occurrence of viable populations of freshwater pearl mussels, *Margaritifera margaritifera* (L.), in Swedish boreal forest. In Törnblom, J. A Landscape Approach towards Ecological Integrity of Catchments and Streams. Doctoral Thesis No.2008:70. Faculty of Forest Sciences, SLU

Langan, S, Cooksley, S, Young, M, Stutter, M, Scougall, F, Dalziel, A, Feeney, I, Lilly, A and Dunn S. (2007). The management and conservation of the freshwater pearl mussel in Scottish catchments designated as Special Areas of Conservation or Sites of Special Scientific Interest. Scottish Natural Heritage Commissioned Report No.249 (ROAME No. F05AC607).

RBMP Water body information sheet for water body 23097 (River Spey; River Feshie to River Nethy) in North East Scotland. SEPA 2010

# Appendix I Details of Natura 2000 sites within, or adjacent to, the proposed development site

Name of European Site	Abernethy Forest			
Site Type	Special Protection Area			
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and			
	To ensure for the qualifying species that the following are maintained in the long-term:			
	Population of the species as a viable component of the site Distribution of the species within the site			
	Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species			
Qualifying Species	Capercaillie (Tetrao urogallus) Osprey (Pandion haliaetus) Scottish crossbill (Loxia scotica)			
Site Condition	Capercaillie, breeding, 2009. Favourable maintained. Osprey, breeding, 2007. Favourable maintained. Scottish crossbill, not monitored to date.			
Factors currently influencing site	In terms of development, no factors currently influencing site			
Vulnerabilities to change/potential effects of the Plan	Disturbance from construction and recreation arising from neighbouring development Relevant settlements: Boat of Garten, Nethy Bridge			

Name of European Site	Anagach Woods				
Site Type	Special Protection Area				
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and  To ensure for the qualifying species that the following are maintained in the long-term:  Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species				
Qualifying Species	Capercaillie (Tetrao urogallus)				
Site Condition	Breeding capercaillie, not monitored to date.				
Factors currently influencing site	Impact from disturbance from adjacent village and footpaths within the wood				
Vulnerabilities to change/potential effects of the Plan	Disturbance from construction and recreation arising from neighbouring development Relevant settlements: Grantown-on-Spey				

Name of	Cairngorms				
European Site					
Site Type	Special Area of Conservation				
Conservation Objectives	To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and  To ensure for the qualifying habitats that the following are				
	maintained in the long-term:  Extent of the habitat on site Distribution of the habitat within the site Structure and function of the habitat Process supporting the site Distribution of typical species of the habitat Viability of typical species as components of the habitat No significant disturbance of typical species of the habitat				
Qualifying Habitats	Acid peat-strained lakes and ponds Acidic scree Alpine and subalpine heaths Blanket bog* Bog woodland* Caledonian forest* Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels Dry grasslands and scrublands on chalk or limestone Dry heaths Hard-water springs depositing lime* High-altitude plant communities associated with areas of water seepage* Juniper on heaths or calcareous grasslands Montane acid grasslands Mountain willow scrub Plants in crevices on acid rocks Plants in crevices on base-rich rocks Species-rich grassland with mat-grass in upland areas* Tall herb communities Very wet mires often identified by an unstable 'quaking' surface Wet heathland with cross-leaved heath (*indicates priority habitat)				
Site Type	Special Area of Conservation				
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the				

	site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and			
	To ensure for the qualifying species that the following are maintained in the long-term:			
	Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species			
Qualifying Species	Green shield-moss (Buxbaumia viridis) Otter (Lutra lutra)			
Site Type	Special Protection Area			
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and			
	To ensure for the qualifying species that the following are maintained in the long-term:			
	Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species			
Qualifying Species	Capercaillie (Tetrao urogallus)  Dotterel (Charadrius moninellus)  Golden eagle (Aquila chrysaetos)  Merlin (Falco columbarius)  Osprey (Panion haliaetus)  Peregrine (Falco peregrinus)  Scottish crossbill (Loxia scotica)			
Site Condition	Acid peat-stained lakes and ponds, 2004. Favourable maintained. Acidic scree, 2007. Favourable maintained. Alpien and subalpine heaths, 2007. Unfavourable no change. Blanket bog, 2004. Unfavourable no change. Bog woodland, 2002. Favourable maintained. Caledonian forest, 2009. Unfavourable declining. Clear water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels, 2004. Favourable maintained. Dry heaths, 2007. Unfavourable no change. Green-shield moss (Bauxbaumia viridis), 2006. Favourable maintained. High-altitude plant communities associated with areas of water seepage, 2006. Unfavourable no change.			

	Juniper on heaths or calcareous grasslands, 2007. Favourable maintained.  Montane acid grasslands, 2006. Unfavourable recovering.  Mountain willow scrub, 2007. Unfavourable no change.  Otter, 2004. Favourable maintained.  Plants in crevices on acid rocks, 2007. Favourable maintained.  Plants in crevices on base-rich rocks, 2007. Unfavourable no change.  Tall herb communities, 2007. Favourable maintained.  Very wet mires often identified by an unstable 'quaking' surface, 2007. Favourable maintained.  Wet heathland with cross-leaved heath, 2007. Unfavourable no change.  Breeding dotterel, 1999. Favourable maintained.  Breeding golden eagle, 2003. Favourable maintained.  Breeding osprey, 2006. Favourable maintained.  Breeding peregrine, 2002. Favourable maintained.
Factors currently influencing site	In terms of development, none at present
Vulnerabilities to change/potential effects of the Plan	Recreational disturbance to species from neighbouring development Relevant settlements: An Camus Mòr, Boat of Garten – also developing of, or extension of existing, recreational facilities Wind farms could impact on young golden eagles, given their mobility

Name of European Site	Cairngorms Massif				
Site Type	Special Protection Area				
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and  To ensure for the qualifying species that the following are maintained in the long-term:  Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species				
Qualifying Species	Golden eagle (Aquila chrysaetos)				
Site Condition	Golden eagle – not monitored to date				
Factors currently influencing site	In terms of development, none at present				
Vulnerabilities to change/potential effects of the Plan	No specific vulnerabilities identified				

Name of European Site	Craigmore Wood			
Site Type	Special Protection Area			
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and  To ensure for the qualifying species that the following are maintained in the long-term:  Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species			
Qualifying Species	No significant disturbance of the species  Capercaillie (Tetrao urogallus)			
Site Condition	Capercaille, 2009. Unfavourable no change.			
Factors currently influencing site	In terms of development, none at present			
Vulnerabilities to change/potential effects of the Plan	Recreational disturbance from development in neighbouring areas Relevant settlements: Boat of Garten, Nethy Bridge			

Name of	Kinveachy Forest				
European Site					
Site Type	Special Area of Conservation				
Conservation	To avoid deterioration of the qualifying habitat (listed below)				
Objectives	thus ensuring that the integrity of the site is maintained and th site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and				
	To ensure for the qualifying habitats that the following are maintained in the long-term:				
	Extent of the habitat on site				
	Distribution of the habitat within the site				
	Structure and function of the habitat				
	Process supporting the site				
	Distribution of typical species of the habitat				
	Viability of typical species as components of the habitat				
	No significant disturbance of typical species of the habitat				
Qualifying	Bog woodland*				
Habitats	Caledonian forest*				
	(* indicates priority habitat)				
Site Type	Special Protection Area				
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species thus ensuring that the integrity of the site is maintained; and				
	To ensure for the qualifying species that the following are maintained in the long-term:				
	Population of the species as a viable component of the site Distribution of the species within the site				
	Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species				
	No significant disturbance of the species				
Qualifying Species	Capercaillie (Tetrao urogallus)				
<u> </u>	Scottish crossbill (Loxia scotica)				
Site Condition  Bog woodland*, 2009. Unfavourable recovering.  Caledonian forest*, 2009. Unfavourable recovering.  Capercaillie (Tetrao urogallus), 2009. Favourable maint					
Factors currently	Scottish crossbill (Loxia scotica), not monitored to date.  In terms of development, none at present.				

Vulnerabilities to	Recreational disturbance from development in neighbouring
change/potential	areas
effects of the Plan	Relevant settlements: Boat of Garten

Name of European Site	Loch Vaa			
Site Type	Special Protection Area			
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and  To ensure for the qualifying species that the following are maintained in the long-term:  Population of the species as a viable component of the site Distribution of the species within the site Distribution and extent of habitats supporting the species Structure, function and supporting process of habitats supporting the species No significant disturbance of the species			
Qualifying species	Slavonian grebe (Podiceps auritus)			
Site Condition	Slavonian grebe (Podiceps auritus), 2010. Unfavourable no change.			
Factors currently influencing site	In terms of development, none at present			
Vulnerabilities to change/potential effects of the Plan	Effects on water quality including sewerage treatment, release of minerals, contamination or other waste			

Name of European Site	River Spey
Site Type	Special Area of Conservation
Conservation Objectives	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and
	To ensure for the qualifying habitats that the following are maintained in the long-term:
	Population of the species, including range of genetic types for salmon, as a viable component of the site Distribution of the species within site
	Distribution and extent of habitats supporting the species Structure, function and supporting processes of habitats supporting the species No significant disturbance to the species
	Distribution and viability of freshwater pearl mussel host species Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species
Qualifying Interest(s)	Atlantic salmon Freshwater pearl mussel Otter Sea lamprey
Site Condition	Atlantic salmon, 2005. Unfavourable recovering. Freshwater pearl mussel, 2005. Unfavourable recovering. Otter, 2007. Favourable maintained. Sea lamprey, 2007. Favourable maintained.
Factors currently influencing site	In terms of development, none at present
Vulnerabilities to change/potential effects of the Plan	Effects on water quality including sewerage treatment, release of minerals, contamination or other pollution and waste Functioning of flood plains and the river system Abstraction of water Relevant settlements: Dalwhinnie, Newtonmore, Kingussie, An Camus Mòr, Aviemore, Inverdruie, Kincraig, Insh, Boat of Garten, Carr-Bridge, Dulnain Bridge, Nethy Bridge, Grantownon-Spey, Cromdale

#### Appendix 2

#### Methodology for screening likely disturbance effects on capercaillie

The same methodology used in the HRA for the Proposed Local Development Plan is used here. Screening for LSEs on capercaillie considers the relationship between the size of housing developments and their distance from the Natura site. Table 2 below is from the draft LDP HRA and sets out the significance of effect in relation to the size of development and proximity to the site. Dog walking is considered to be the most significant potential source of recreational disturbance to capercaillie.

For the purposes of screening, thresholds based on evidence of recreational behaviour were used to determine LSEs:

2 km threshold reflects the distance around settlements where most dog-walking is likely to take place.

Thresholds of 5 and 10 km were also used to assess the impact of increasing distance between a settlement and a site.

Beyond the distance of 10 km from a settlement, it is considered that the volume of people would be so low as to be negligible.

The same thresholds have been adopted for this HRA.

Table 1: Screening thresholds for capercaillie SPAs and housing development

No. units /distance from site	Less than 2 km	2-5 km	5-10 km	More than 10 km
Less than 100 houses	LSE	MRE*	MRE*	No effect
100-300 houses	LSE	LSE	MRE*	No effect
More than 300 houses	LSE	LSE	LSE	No effect

<sup>\*</sup>The term MRE is used within the LDP HRA and is synonymous with insignificant effect as used within this assessment.

## Appendix 3

## Glossary of terms and abbreviations

Appropriate	The part of the Habitats Regulations Assessment		
Assessment (AA)	process that considers the effects of an aspect of a		
	plan upon the conservation objectives for a Natura		
	site.		
CNPA	Cairngorms National Park Authority		
CNAP	Cairngorms Nature Action Plan		
Competent Authority	The decision making body required under the		
	Habitats Directive to undertake HRA. This includes		
	Scottish Government, National Park Authorities,		
CPP	SNH, SEPA or Local Authorities.		
	Core Paths Plan		
Habitats Regulation	The whole appraisal process for determining effects		
Assessment (HRA)	upon Natura Sites. It includes Appropriate		
	Assessments. It is a requirement by the Habitats		
	Directive that competent authorities carry out HRAs where a plan or project affects a Natura site.		
CLDP	Draft Cairngorms National Park Local Development		
CLDI	Plan		
Likely Significant Effect	An adverse effect of the development upon a		
Zinci, Sigimicant Zincct	qualifying interest or conservation objective that i		
	considered to be potentially severe enough as to		
	threaten the integrity of the Natura site itself.		
Natura Sites	Collective term for Special Protection Areas and		
	Special Areas of Conservation		
Ramsar sites	Ramsar sites are wetlands of international		
	importance designated under the Ramsar		
	Convention 1971. Not technically Natura sites they		
	are however usually also SPAs. They are included		
	within the HRA process by policy.		
Special Area of	An area designated for the protection of habitats		
Conservation (SAC)	and species. Authorised under Council Directive		
	92/43/EEC on the conservation of natural habitats		
	and of wild fauna and flora (commonly called the		
	"Habitats Directive"). One of three designation to be considered in a HRA		
Special Protection Area	An area designation for the protection of birds.		
(SPA)	Authorised by the Directive 2009/147/EC of the		
	European Parliament and of the Council (commonly		
	called the "Birds Directive"). One of three		
	designation to be considered in a HRA		

#### Appendix 4

#### Capercaillie; background information

The Scottish capercaillie population declined significantly between the 1970s and 1990s. From an estimated 20,000 birds in 1970, numbers fell to 2189 birds in the first national survey in 1993/94. A survey in 1998/99 estimated a population of just 1073 birds (95% C.L.549-2041) - a decline of 51% between the two surveys. The 2003/04 survey gave an estimate of 1980 birds, which could potentially to be considered an overestimate in light of results developing from the 2009/10 survey which indicates a population size of 1285 (a non-statistically significant decline) (Ewing et al. 2012). Despite this uncertainty, it is considered that the national population of capercaillie is currently stable after a period of rapid and significant decline (Eaton et al, 2007). However, the national population is still small (the UKBAP target for the species was 5000 birds by 2010 and this target has clearly not been met) and its range is contracting significantly. The 2003/04 Capercaillie national survey suggested that the range of Capercaillie had contracted into core habitat, with over 60% of all birds recorded occurring in Strathspey (Eaton et al, 2007). This figure has recently been estimated to now be c.75% in Strathspey (Poole, 2010) due to reductions elsewhere. 77% of Capercaillie cocks observed during lek surveys from the spring of 2012 were in Strathspey (Table 9.). Although capercaillie numbers have held up in Strathspey, the population is now extremely vulnerable elsewhere. Capercaillie persist in other areas (Deeside, Donside, Easter Ross, Moray and Perthshire) but these populations are more fragmented, numbers are lower and breeding success poorer. The Strathspey capercaillie population is crucial to the long-term survival of the species in the UK.

Table 1. Summary of total and average number of cocks on active leks in Scotland in 2012:

Region	No. of active leks	Min No. of cocks	Mean cocks/lek
Perthshire and Loch Lomond	2	3	1.50
Deeside and Donside	12	19	1.58
Moray and Nairnshire	9	12	1.33
Easter Ross	6	13	2.17
Strathspey	42	155	3.69
TOTAL	71	202	3.00

The Cairngorms SPA is one of five SPAs in Badenoch and Strathspey. Together with a number of undesignated woodlands they form a network of habitat for the species that contains the metapopulation described above. The other SPAs are Abernethy Forest, Kinveachy Forest, Craigmore Wood and Anagagh Wood. The network of habitat is functional because of the relative proximity of the SPAs to the other woodlands which often act as stepping stones between them. The distance capercaillie will disperse has been subject to a number of studies. Storch (1995) radio-tracked 40 capercaillie in the Bavarian Alps and found that throughout the year distances of females from the leks they attended in spring averaged 1.3 km (Standard Error = 0.1 km). In winter and spring males aggregated within a 1 km radius of the lek, but dispersed within a 3-4 km radius during summer. Storch (2001 cited in Moss et al 2006) concluded that most males settle close to their chick range but young female dispersal distances were typically 5-10 km. A radio-tracking study of males at leks in Russia and Norway recorded average dispersal distance of males to summer range of 2.3 km, SE = 0.37 (Russia 2.2.km, SE = 0.70; Norway 2.4 km, SE = 0.43) (Hjelford et al. 2000). Storch &

Segelbacher (2000) summarised known movements as average seasonal movements of I-2 km for adults and median dispersal distances of < 10 km for juveniles. The distances recorded in a Scottish study (Moss et al. 2006) are somewhat longer than those above, which may be related to the fragmented nature of Scottish forests. This study showed first-winter dispersal distances of I3 hens radio-tracked ranged within I-30 km (median: I1, mean I2.3, SD 9.8).

Habitat suitable for capercaillie in Scotland is heavily fragmented into comparatively small areas of forest. None of the capercaillie populations in these individual woodlands have the capability to be self-sustaining in the long term. For genetic diversity to prevent inbreeding depression, discrete groups of birds must be linked with nearby groups (i.e. recruiting and exporting birds) forming a meta-population. Conservation of capercaillie requires consideration at this meta-population scale as well as at the scale of individual sites.

#### Sensitivity of capercaillie to disturbance

Capercaillie is listed in Schedule I Part I of the Wildlife and Countryside Act 1981 and Annex I of the EU Birds Directive. It is a criminal offence to intentionally or recklessly disturb leking or breeding capercaillie. According to Article 6.2 of the EU Habitats Directive: 'Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, *in so far as such disturbance could be significant in relation to the objectives of this Directive*.' Article 7 of the Habitats Directive states that Article 6.2 applies to the Birds Directive.

There is a growing body of evidence indicating capercaillie and other grouse species are adversely affected by disturbance resulting from human recreational activities. Our knowledge on the impacts of recreational disturbance has increased during the last few years due to the increasing body of research undertaken, although it is difficult to measure scientifically. Human disturbance and disturbance by dogs can affect capercaillie by reducing the availability of otherwise suitable habitat (including habitat used for roosting, feeding, nesting and brood rearing), displacing the birds from leks, disrupting behaviour patterns, increasing the risk of predation, separating chicks from hens and the direct killing of chicks and adult birds. These effects can occur separately or additively. Capercaillie are sensitive to disturbance at all life stages but especially so when attending leks, incubating eggs (late April to mid June) or rearing broods (late May - late August but critically during June and July when the chicks are small and dependent on the hen for warmth), which coincides with when people are mostly likely to be using the woods. Reported responses to disturbance include a decline in local capercaillie numbers (Brenot et al. 1996 cited in Thiel et al. 2007) and abandonment of lek sites (Labigand & Munier 1989 cited in Thiel et al. 2007).

Capercaillie have been shown to avoid habitat close to tracks, which may reduce overall carrying capacity in forests with a high density of tracks. Fewer droppings are found in areas of woodland close to heavily used tracks. A study in neighbouring Abernethy Forest estimated that 21-41% of suitable woodland habitat at Abernethy could be lost due to avoidance of tracks by capercaillie (Summers et al., 2007). The studies looking at the distribution of capercaillie droppings on transects in Boat of Garten woods found that droppings were sparser within 700 m of a much-disturbed zone near the village (significantly so up to 250 m), and within 250 m of tracks (significantly so up to 120 m). Results were consistent with those from other studies at Anagach Woods and Glenmore Forest. Distances between tracks of > 500 m are be required to provide capercaillie with relatively peaceful havens between tracks. Cocks' droppings were about twice as common as hens, suggesting a sex ratio skew (consistent with evidence that suggests hens are more susceptible to disturbance than cocks). In the most recent Strathspey study at Glenmore, findings indicated that capercaillie avoid areas around busy entry points (Moss et al, 2010).

A study in Central Europe showed that flushing distance was greater in the presence of regular disturbance events (Thiel et al, 2007). Flushing distances are greater in open forests where the availability of cover is low (Thiel et al, 2007). Other European studies show that raised stress hormone metabolite levels were noted in capercaillie regularly disturbed by off-piste skiers, (Thiel et al., 2005, 2008). Repeated flushing, such as could occur due to increased disturbance caused by new residents, increases the energy burden. This impact is likely to be of greatest significance in very cold weather, when birds are already close to their physiological limit (Zeitler, 2000). Disturbed capercaillie are also likely to be more visible and will need to spend more time feeding to counteract the increased energy losses, possibly increasing exposure to predators. It has been recommended that the establishment of regulations requiring hikers to stay on trails and closing trails where intertrail distances fall below 100m (Thiel et al, 2007). An example of such management in the Bayerischer Wald National Park, Bavaria, resulted in capercaillie returning to the surrounding woodland (Scherzinger 2003 cited in Summers et al. 2007).

Habitat structure has been shown to modify the alert distance of a number of bird species, with increasing bird tolerance associated with greater availability of escape cover (Fernandez-Juricic et al. 2001). In the specific case of capercaillie, Thiel et al. (2007) recommended planting or preserving evergreen conifer trees along track verges thus reducing the degree of visibility between capercaillie and recreationists. This could increase the habitat available to capercaillie in forests with predictable recreation activities.

Grouse experts questioned as part of the Delphi study (Marshall, 2005) suggested that dogs off leads during the breeding season were the most significant issue for capercaillie in Scotland. Dogs off-lead can have a greater impact by flushing birds further away from paths, so further limiting the amount of available habitat; can separate broods from the hen which could result in chicks becoming cold and wet; and dogs can catch and kill both chicks and adult birds. Due to the large size, especially of males, chicks require a large amount of energy to grow to adult size during a short period. Due to poor nutritional qualities of their food, they are more susceptible to the effects of disturbance than smaller birds and have a higher mortality rate over a longer period. Chicks are more robust, and therefore more likely to survive, if a hen has good energy reserves during egg development.

The main period of sensitivity for breeding capercaillie in relation to dogs has been defined by the Caper BAP Group as between Ist April and I5th August. This is currently being reconsidered following a recommendation from the Caper BAP Group to extend the end date. CNPA, as the Access Authority, has sought further advice from the Cairngorms Local Outdoor Access Forum, who have recommended that the dates are not altered until further work on a CNPA led Strathspey-wide capercaillie framework considering habitat management, recreation and development management is complete.

In summary, capercaillie are very vulnerable to disturbance. They are ground nesting and are therefore most vulnerable at the early part of their lifecycle as eggs or chicks. At this stage, they can be directly killed by dogs, or killed by predators such as crows or foxes when the hen is flushed from the nest or brood, or killed by exposure if a hen is flushed. Capercaillie is also very vulnerable to disturbance on the lek. While some cock birds become over-aggressive, the vast majority of males are very easily driven away. Although capercaillie is vulnerable to disturbance at all times of year, they are especially so in spring and summer. The Capercaillie BAP (Biodiversity Action Plan) Group highlight the period between I April – I5 August as the most critical period. It is concluded that capercaillie are sensitive to disturbance by people and dogs, and that dogs off leads present the greatest risk. Off-path recreational use is likely to be more disturbing than on-path use because it is less predictable and birds are less likely to habituate to it. Evidence from Boat of Garten woods shows that use by capercaillie of the parts of the woods within I25 m of paths and tracks is reduced and that this disturbance has a significant impact on their behaviour.

#### Loss of capercaillie habitat

It is reasonable to assume that the existing level of disturbance means that apparently suitable habitat for capercaillie is effectively unavailable to them. Research on habitat use through analysis of droppings suggests that there is an avoidance of certain areas. This is probably attributable to the disturbance experienced from existing sources and cumulatively creates a larger area of unavailable habitat. Capercaillie need large areas of habitat. Chicks require high quality protein food to grow rapidly, which can be distributed patchily over a wide area. Chicks are born precocial and move constantly over a big area to find food and avoid predation (Wegge et al, 2007).

As highlighted above, capercaillie have declined significantly in recent times. Studies have suggested that the national decline was driven by low productivity (Moss et al., 2001). A programme of targeted habitat management in capercaillie core areas seems to have halted the population decline in Strathspey. Among the factors that may limit capercaillie populations in Scotland are habitat fragmentation and limited habitat availability. In order to address this conservation groups including the Caper BAP group are seeking to ensure opportunities to increase the amount of habitat that is available are developed to ensure that connectivity is increased. This is also a key priority for the CNPA as set out in the National Park Plan and in the new Cairngorms Nature Action Plan. Additional effort needs to focus on increasing productivity and addressing issues that may impact upon it i.e. reducing disturbance.

As already highlighted, Strathspey is the most important area of woodland in the UK for capercaillie, holding c.75% of the population (Poole, 2010). The species requires large, connected areas of woodland for the meta-populations to function effectively. Therefore, the woodlands of Strathspey need to be considered as one ecological unit for the purposes of capercaillie management. Any Appropriate Assessment needs to be as certain beyond reasonable scientific doubt that direct habitat loss and/or reduction in available habitat through habitat avoidance by capercaillie due to disturbance do not result from any development.

## Appendix 5 Consultation responses April 2014

Summarised comment	CNPA response	Action taken
Scottish Natural Heritage		
Human population estimates given do not match SNH understanding of the figures.	We used census data covering the settlement of Nethy Bridge, rather than the wider parish.	SNH agreed that settlement data were more appropriate and so no action is required.
Spey SAC was not identified in the Natura Appraisal performed by SNH, yet was included within the HRA.	The stream which passes very close to the development site (<25m away) flows into the Spey SAC, and so there is a risk of effects on qualifying features, particularly from construction activities.	The Spey SAC remains in the HRA and mitigation for associated LSEs will be worked into planning conditions.
The assessment for the Abernethy SPA should be the CNPA's own, rather than presenting SNH's.	We agree with this observation	Section on Abernethy SPA has been redrafted.
RSPB Scotland		
Judgement of impacts is subjective.	With the absence of some objective data, reliance on expert opinion is unavoidable in these areas. However, we agree that reference should be made to pertinent real-life experiences wherever possible.	More explicit reference to measures recently undertaken at Boat of Garten woods.
Over-reliance for mitigation on the Capercaillie Management Framework, which is currently unavailable, even in draft form.	We agree with this observation. The framework was not relied upon within our analysis and its inclusion was intended as additional information. However this is potentially misleading as evidenced	Reference to the CMF has been removed.

	by this comment.	
Possible discontinuation of capercaillie viewing arrangements at the Loch Garten Visitor Centre.	The existence of the Loch Garten lek viewing facility is part of the current baseline which must be considered for the HRA.	We do not consider any change is required.
Concerned by the argument that the abundance of habitat at Abernethy SPA allows for the absorption of greater disturbance impacts.	This was in a context of considering future expansion of capercaillie and does not therefore impact upon baseline conditions. However we do agree that there is potential for confusion with this statement.	Reference to this has been removed.
Disagree with conclusion of no effect on Craigmore Wood.	SNH agreed with the original conclusion so there is a difference of opinion. We now conclude that in this case the behaviour, rather than absolute numbers, of access takers, especially dog walkers, has the potential to be a key factor and that additional mitigation is required.	Additional mitigation measures similar to those undertaken at Boat of Garten woods have now been included within the AA.