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Ecological report for Burnbank, Greenhaugh

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SUMMARY

A new development of houses is proposed on the north east side of Greenhaugh between the hamlet and the Burnbank Farm.

The aim of the report is to bring an ecological rationale to the proposed development. The report considers biological data provided by ERIC for a 2km radius around the proposed development as well as data from a farm environmental plan and an on-going breeding wader survey.

The site of the proposed development lies within a semi-improved upland hay meadow that is managed through grazing and hay cutting.

There are very few biological records form in and around the proposed site. Many of the records from ERIC refer to woodland and riparian habitats as well as those associated with designated upland hay meadows within 2km of the proposed site.

The major impact on the development will be on the habitat. It is proposed, in mitigation, to restore the remaining area of upland hay meadow or a neighbouring field. The area will be chosen that has a suitable pH and nutrient status. The aim will be to restore the meadow to that found in the Greenhaugh SSSI or Burnbank meadows using either seed or 'green' hay

There is the potential for disturbance to the ground-nesting birds especially the upland breeding waders. Further investigation work is required in the 2013 breeding season.

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Biodiversity and protect species statement for the proposed property development on the north east side of Greenhaugh.

1.0 Introduction

The land proposed for development at Burnbank Farm in a rural setting, lying on the north east side of Greenhaugh. The landscape is dominated by pasture, meadows, rough grazing and woodland along watercourses. Many of the boundaries are bounded by drystone walls and there are a few boundary trees.

2.0 Objectives

The main objectives of the Environmental Statement are as follows:

- Carry out a desk top survey of biological information for a 2 km radius around the site.
- To provide a survey and assessment of ecological and environmental features in the area of the proposed development.
- To assess the potential environmental impacts of the proposed development, especially regarding protected, rare or endangered species and habitats.
- To provide avoidance and mitigation measures for the environmental impacts of the proposed development, especially regarding protected, rare or endangered species and habitats.

3.0 Project proposal

3.1 Location

The proposed development lies on the north east side of Greenhaugh (NT795 874) in a permanent pasture field. Figure 1 shows the location of the proposed development within a wider context. The land lies within the Border Moors and Forests character area and on the edge of the Rolling Upland Valleys landscape character type.



Figure 1: Location of the development

3.2 Desktop survey.

A number of sources of information were gathered together to provide some background information. These include;

- MAGIC and Nature on the Map websites.
- Biological data from ERIC – Environmental Records Information Centre – North East (ERIC).
- A farm environmental plan carried out in June 2012 for the whole holding at Burnbank as part of an application to Natural England’s Higher Level Scheme.
- Breeding wader survey information from Andy Bunten (1994 to present day).
- Information from Mr & Mrs Walton especially relating to the bat roost in Burnbank farmhouse.

3.3 Methodology

A range of botanical and taxa surveys were carried out as part of the ecological survey. These included;

- Records from ERIC can be found in the appendices of this report. The records were generated by Laura Laffler.
- Botanical surveys of the hay meadows, hedgerows and surrounding grassland. The vegetation survey for the sites was carried out using the survey techniques set out in Natural England’s handbook (third edition – February 2010). This survey was carried out in June 2012. Species abundance was measured and used to determine the National Vegetation Classification of the grassland. A further vegetation survey of the grassland in the proposed development area was carried out in August 2012 after the meadow had been cut.
- Breeding wader survey has been carried out by Mr A Bunten on an area to the north of the proposed site. This survey uses the standard methodology for surveying breeding waders set out by the RSPB (three visits during the breeding season – April to June). Other bird species were recorded during the Farm Environmental Plan visit.
- Searches were made for mammals such as badgers, otters and amphibians in the relevant areas. These searches included the proposed site and the neighbour land. The survey was carried out in August 2012.

4.0 Results

4.1 Designations

The proposed development site lies within the Northumberland National Park. The proposed site is not designated.

The Greenhaugh Meadows Site of Special Scientific Interest (SSSI) and Special Area of Conservation lies within 300m of the proposed development. There are no other designated sites within a 2 km radius of the proposed development.

4.2 Biological records from ERIC

There were no records from ERIC from the proposed area or the immediate fields surrounding the site. The majority of the records are of woodland, aquatic or hay meadow from sites such as Greenhaugh and Burnbank meadows (west and north of the sites), Blackheugh Wood and Sneep Wood as well as the Tarsset Burn.

4.3 Habitats

4.3.1 Grassland

The land use for the proposed development is permanent pasture and it is managed as an upland hay meadow. Typically, the land is grazed by breeding ewes and then ‘shut up’ for hay in May. Grazing is continued once the hay has been removed in August.

The National Vegetation Classification, for the proposed site, is considered to be in the MG6 complex (*Lolium perenne* – *Cynosurus cristatus* grassland) using the MAVIS vegetation classification programme (2001). A species-list for the area with DAFOR scale can be found in the appendices.

In the surrounding fields to the north and east, the meadows are of a similar vegetation composition (Phase 1 survey Appendix 2). The exceptions are fields to the south east where the species composition is much more interesting as *Euphrasia officinalis* agg is frequent and becoming dominant in places.

Within the wider landscape, there are a number of interesting areas of species-rich hay meadows. These include the Greenhaugh meadow Special Area of Conservation (SAC) as well as species-rich meadows and pastures along the Tarsset Burn to the north and west of the proposed site.

4.3.2 Roadside verges

The roadside verge to the west of the hedge adjacent to the development is species-poor with very few flowering plants. There are verges to the north of the site (within 250m) that are recognised as being species-rich with a botanical diversity that is similar to that found in the best hay meadows.



Figure 2: Cut meadow looking west (area of proposed development)

4.3.2 Hedgerows, drystone walls and boundary trees

There is one hedge that stretches along part of the roadside. This is a relatively young hedge which has a good structure and diversity. The main species are hawthorn *Crataegus monogyna* (D), blackthorn *Prunus spinosa* (O), dog rose *Rosa canina* agg (O), bramble *Rubus* agg (O), ash *Fraxinus excelsior*(R) and sessile oak *Quercus petraea* (R).



Figure 3: Roadside hedge

The remaining boundaries around the field are drystone walls. There is a short defunct boundary to the north of the proposed development which contains two hawthorn bushes, two downy birches *Betula pubescens* and a sessile oak tree (which is about 60 years old).

No species were found that are localised or rare in the Flora of Northumberland (Swann, 1993).

4.4 Mammals

A thorough search of the site was made for mammals.

4.4.1 Badgers

No setts, latrines or tracks were found of this species. The wider area was also searched (fields to the south adjacent to an area of woodland) but again no signs were found.

ERIC has one record of badger in the vicinity of the proposed development site (Boughthill Mill Wood). This record is from autumn 1977.

4.4.2 Bats

There are no records from ERIC from in and around Greenhaugh village. The majority of the records are from the woodland corridors along riparian zones of the local watercourses.

The exposed nature of the meadow ensures that the fields are very unlikely to be used as a foraging area for bats. Bats may use the hedgerow as a corridor to feeding and roosting sites. The hedgerow is to be maintained within the proposed development and thus will continue to provide a corridor for foraging bats.

A roost of both species of pipistrelles is known from the farmhouse at Burnbank Farm (Mrs M. Walton) where there is a large roost within the chimney on the northern gable end of the house.

4.4.3 Red squirrels

It is extremely unlikely that the meadow is used as a foraging area by red squirrels. The hedge may be used as a corridor between areas of woodland to the north and south of the proposed development. Red squirrels are found in suitable habitats to the south and west of the proposed site. There are no ERIC records within the vicinity of the proposed site.

4.4.4 Other mammals

There were no signs of otters or foxes. The hedgerow corridor may be used by small mammals such as short-tailed field vole and common shrew.

4.5 Birds

The majority of the ERIC records refer to species that utilise woodland and scrub. Red data species recorded in the area include marsh tit *Parus palustris*, common starling *Sturnus vulgaris* and an unconfirmed record of common redpoll *Carduelis flammea flammea*. Amber listed species include kestrel *Falco tinnunculus*, common sandpiper *Actitis hypoleucos*, meadow pipit *Anthus pratensis*, pied flycatcher *Ficedula hypoleuca*, swallow *Hirundo rustica*, grey wagtail *Motacilla cinerea*, hedge accentor *Prunella modularis*, bullfinch *Pyrrhula pyrrhula* and woodcock *Scolopax rusticola*.

An on-going breeding wader survey is being carried out to the east of the proposed development site. The survey area does not include the proposed site.

Species	Max number of individuals per year																	
	1994	1995	1996	1997	1998	1999	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Oystercatcher				1							1		1					
Lapwing	1		1	2	7	2	3	3	2	3	1		1	7	2	1		1
Snipe	2	2		1	4	1	5	2	4	4	3	2	2	3	2	1	1	
Curlew	7	2	3	3	1	5	5	3	4	2	2	3	3	3	2	6	1	2

Table 1: Maximum number of breeding waders found in NY8087 (A Buntin).

Surveys in June and August 2012 produced a number of other red data birds within the vicinity of the proposed site including spotted flycatcher *Muscicapa striata*, song thrush *Turdus philomelos*, house sparrow *Passer domesticus*, linnet *Carduelis cannabina*, lesser redpoll *Carduelis flammea* and yellowhammer *Embriza citrinella*.

The meadow is suitable for ground nesting birds such as lapwing *Vanellus vanellus* and skylarks *Alaudia arvensis*. Good numbers of skylarks and meadows pipits as well as smaller numbers of lapwing, curlew *Numenius arquata*, snipe *Gallinago gallinago* and wheatears *Oenanthe oenanthe* breed in suitable habitats at least two fields away from the proposed development.

4.5.1 Barn owl

A pair of barn owls was regularly seen around Burnbank prior to the snowy winters of 2009/10 and 2010/11. No birds have been seen lately. No barn owls were on the ERIC records.

Unfortunately there are no suitable holes within the oak trees to support breeding or roosting barn owls. Any recolonizing birds are likely to use farm buildings in the neighbourhood.

Barn owls in the past were occasionally seen hunting over the meadow in the past once it had been ‘shut up’ for hay and the sward had developed sufficiently to support small mammals.

4.6 Amphibians and reptiles

ERIC indicates that there are records of common frog and toad within 2km of the site. There are no suitable breeding areas for amphibians within the proposed site.

Populations of adders, slow worms and common lizards are known in the local area (G Dodds) but there are very few records from ERIC. No reptiles were found during the site survey. It is also extremely unlikely that reptiles will use the site as there is very little suitable habitat.

5. Environmental impact assessment

The Burnbank development site is relatively large in the context of the Greenhaugh village. It is centred in a semi-improved hay meadow in the north east corner of Greenhaugh which is traditionally managed for hay and grazed by sheep. Below are a number of points that were concluded after the site survey.

1. The greatest impact on the biodiversity will be the loss of the semi-improved traditional hay meadow. Nationally more than 95% of this habitat has been lost since the 1950's through agricultural improvement and development.

Although the meadow is not in the 'premier league' of species-rich swards, it does have the potential to be restored using seed from neighbouring sites. The lack of species diversity resulted in this hay meadow was not being included in the Burnbank farm Higher Level agreement from Natural England's agri-environment scheme.

Limited to moderate impact

2. The proposed development site is sufficiently far enough away not to have a direct impact on neighbouring woodland to the south east of the site and along the Tarsset Burn.

No significant impact

3. Further investigation would be needed into the impact of the development, especially water quality, on the Tarsset Burn catchment. This is especially in light of its importance for migratory fish (Atlantic salmon, brown/sea trout and eels) as well as native brown trout, stone loach, common sandpiper, dipper and grey wagtail populations. A number of which are important at a national and regional level.

Moderate impact

4. Very little evidence was found of mammal activity in and around the development site. The lack of large mammal (badger etc.) activity may be a result of the network of drystone walls which may impede foraging activity. It is extremely unlikely that the proposed development will have an impact on the local mammal populations.

No significant impact

5. The hay meadow is a suitable nesting site for ground-nesting birds such as lapwing, meadow pipit and skylark. It is likely that if birds do nest within the proposed development site, breeding success is likely to be poor as a result of predation from local cats, dogs and rats. There is a declining population of breeding waders to the east of the site. The closest nesting birds will be within 400m of the proposed development.

Limited impact

6. The roadside hedgerow is suitable for nesting yellowhammers, linnets, song thrushes as well as a range of other commoner species (e.g. hedge sparrow). The hedge should be retained as it will also act as a corridor for pipistrelle bats from the roost at Burnbank.

Limited impact.

7. It is extremely unlikely that amphibians and reptiles will utilise the hay meadow with the exception of the period when the meadow is shut up for hay.

No significant impact

5.1 Mitigation

There are a number of mitigation measures that are proposed:

1. Add native seed or ‘green’ hay from species-rich hay meadows to the existing sward of the remaining area of the field or a neighbouring field which has a suitable pH and soil nutrients. The seed or ‘hay’ could be sourced from meadows such as Greenhaugh Site of Special Scientific Interest (SSSI) or Burnbank Meadow. The restored area of hay meadow will be at least 1 ha.
2. Create a native hedge along the northern and eastern boundary of the site. The species composition would be similar to that found in the existing roadside hedge.
3. Ensure a number of suitable features are built into the new houses that will support roosting bats (e.g. bat bricks) and breeding house martins.
4. In 2013, map territories of ground nesting birds especially breeding waders within 1 km of the proposed site.
5. Carry out further search for mammals, amphibians and reptiles within at least 1 km of the proposed site

6. Conclusion

There were very few records from ERIC for the immediate area around the proposed site. Many of the species listed were either woodland, riparian or found in the important hay meadow sites in the area. The ERIC data was supplemented by information from an on-going breeding wader survey and the farm environmental plan that was carried out in June 2012.

In conclusion, the proposed site is currently managed as an upland hay meadow that has been semi-improved in the past. The loss of 0.3 ha of hay meadow would not be significant especially if 1 ha of meadow could be restored to the standard of the Greenhaugh or Burnbank Meadows.

The proposed development is unlikely to have an impact on the mammals, birds, amphibians or reptiles of the local area. Further investigation is required to look at the proximity of ground-nesting birds to the development.

7. References

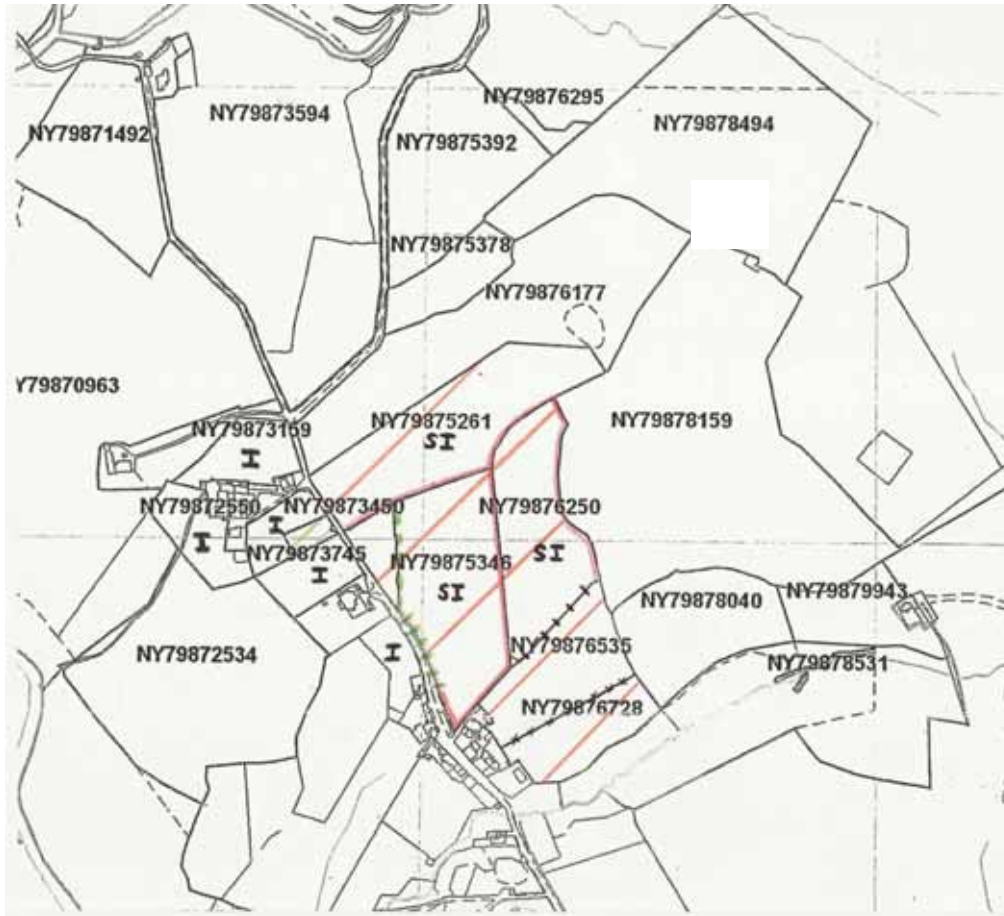
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- Dodds G. W. (2012). Farm Environmental Plan for Burnbank. Natural England.
- Laffler L. (2013). Existing biological data for a 2 km radius around the proposed development site. North East Environmental Records Information Centre.

Appendix 1: Botanical composition of the proposed development

The grassland sward within the proposed site:

Crested dog's tail	<i>Cynosurus cristatus</i>	(d)
Common bent	<i>Agrostis capillaris</i>	(a)
Common sorrel	<i>Rumex acetosa</i>	(a)
Yellow rattle	<i>Rhinanthus minor</i>	(a)
White clover	<i>Trifolium repens</i>	(a)
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	(f)
Soft brome	<i>Bromus hordeaceus</i>	(f)
Meadow foxtail	<i>Alopecurus pratensis</i>	(f)
Yorkshire fog	<i>Holcus lanatus</i>	(f)
Timothy	<i>Phleum pratense</i>	(f)
Common ryegrass	<i>Lolium perenne</i>	(f)
Meadow buttercup	<i>Ranunculus acris</i>	(f)
Red clover	<i>Trifolium pratense</i>	(f)
Black medic	<i>Medicago lupulina</i>	(f)
Ribwort plantain	<i>Plantago major</i>	(f)
Daisy	<i>Bellis perennis</i>	(f)
Rough meadow grass	<i>Poa trivialis</i>	(o)
Cock's foot	<i>Dactylis glomerata</i>	(o)
Common mouse-ear chickweed	<i>Cerastium fontanum</i>	(o)
Changing forget-me-not	<i>Myosotis discolor</i>	(o)
Dandelion	<i>Taraxium agg</i>	(o)
Cow parsley	<i>Anthriscus sylvestris</i>	(o)
Stinging nettle	<i>Urtica dioica</i>	(r)
Creeping thistle	<i>Cirsium arvense</i>	(r)
Hogweed	<i>Heracleum sphondylium</i>	(r)

Appendix 2: Phase 1 habitat survey



Appendix 3: Risk assessment for bats

	Potential for foraging and roosting bats			
	Minimal	Low	Medium	High
Habitats and cover within 200m	City Centre	Open and exposed with little tree or hedge cover	Hedges and trees linking site to wider countryside	Excellent cover with mature trees and/or good hedges
Habitats within 1km	City Centre	Little tree cover, few hedges, arable dominated	Some linking trees, hedges, woodland and wetland	Good network of woods, wetland and hedges
Alternative roosts within 1km	City centre	Numerous alternative roost sites of a similar nature	A number of similar features in the local area	Few alternative site of good quality for roosts
Setting	Inner city	Urban with little green space	Rural Upland / Urban with extensive green space in vicinity	Rural Lowland with woodland and trees.
Distance to water/marsh	>1km	500m-1000m	200m-500m	<200m
Distance to woodland/scrub	>1km	500m-1000m	200m-500m	<200m
Distance to species-rich grassland	>1km	500m-1000m	200m-500m	<200m
Commuting routes	Isolated by development, major roads, large scale agriculture	No potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways

The above table has been adapted to meet the needs of the proposed development. There are no 'fixed' buildings on the site.