

Ecological Response to Additional Documents, Submitted November 2017

Commissioned by: *Friends of Manning's Pit*

Land off Windsor Road, Barnstaple, EX31 4AG;

North Devon District Council Planning Application No.: 62524



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Abbreviations used in this report

BCT	Bat Conservation Trust
CWS	County Wildlife Site
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare
DBRC	Devon Biodiversity Record Centre
DCC	Devon County Council
DEFRA	Department of Environment, Food and Rural Affairs
EA	Ecological Addendum, Cotswold Wildlife Surveys
ES	Environmental Statement, Framptons
JNCC	Joint Nature Conservation Committee
LPA	Local Planning Authority (North Devon District Council)
MG	Mesotrophic Grassland
NE	Natural England
NPPF	National Planning Policy Framework
NVC	National Vegetation Classification
SSSI	Site of Special Scientific Interest

Summary

The additional submitted documents may have resolved potential negative ecological impacts relating to:-

- Retention of hedges
- Retention of veteran trees
- Damage to Bradford Scarp CWS interests from construction of a footway
- Long term management of remaining areas of grassland

All other issues raised by either the LPA or DCC's ecologist remain unresolved:-

- The resubmitted Phase 1 plan remains inaccurate.
- There is no competent botanical survey presented for wetland. It has serious errors.
- There is no competent botanical survey presented for hedges.
- There is no competent survey presented in respect of grassland interests. There is no Phase 2 level survey. It is not possible from the submitted information to make a full evaluation of ecological significance. It is unfit for purpose. The grassland supports an uncommon community worthy of conservation which is, at least, close to County Wildlife Site standard. No mitigation is offered for losses.
- Little novel information is offered in respect of bats. No plan is given of tree roosts. The statements made on lighting are insufficient and do not constitute a full lighting plan. There is no impact assessment of bat flight-ways. A new hedge is offered as mitigation for loss of connectivity but it is wholly inadequate to provide it. For the Annex II species, a serious negative impact is anticipated in respect of Greater Horseshoe Bat interests and a very serious negative impact is anticipated in respect of Lesser Horseshoe Bat.
- Disturbance and increased predator pressure on local Hazel Dormouse population including that associated with the adjacent SSSI from both this development and cumulatively from other nearby developments is not sufficiently addressed nor resolved. There remains a residual negative impact on this Annex II species.
- The offered invertebrate survey is exceptionally weak. No sampling was undertaken and the value as bat foraging habitat remains unknown. It is unfit for purpose.
- The effects of construction on the Manning's Pit wetland area are ignored. There is no ecological evaluation or impact assessment for either construction or operational phases. The CWS would be ecologically damaged
- The applicant's assessment of impact on the local green infrastructure and ecological networks is irrational and indicates a lack of understanding of corridor functionality. Diminishment of corridor functionality should be anticipated.
- The applicant fails to deal with cumulative impacts in any meaningful manner. Given the dearth in mitigation, negative impacts on Hazel Dormouse, Greater Horseshoe Bat and Lesser Horseshoe Bat are predicted.

- The mitigation proposals relating to the attenuation ponds are seriously flawed.

With so many unresolved ecological issues and potential threats to high value receptors, including SSSI interests, CWS interests, Priority Habitats (Lowland Meadow, Wetland), European Protected Species (Hazel Dormouse, Greater Horseshoe Bat and Lesser Horseshoe Bat) and with little or no effective mitigation offered there appears to be little option for the LPA other than to refuse permission on ecological grounds.

1. Introduction

This report was commissioned by Friends of Manning's Pit. It is a response to the ecological content within the additional documentation provided by the applicant in relation to planning application number 62524, in November 2017.

The treatment of the outstanding ecological issues, requested by the LPA and identified by Devon County Council's ecologist, within the new submitted documents is highly variable. A few issues are possibly resolved but for most there is little effective progress. The most significant ecological interests remaining unresolved are those relating to grassland, invertebrates, wetland, Bradiford Scarp CWS, Bradiford Water SSSI and some European Protected Species (Hazel Dormouse and Horseshoe Bats).

2. Resolved Issues

The recent submitted documents may have resolved three issues:-

- The direct negative impacts on Bradiford Scarp CWS interests through the construction of a footway
- Protection and retention of all hedges and their veteran trees
- Retention of current management regime on undeveloped areas of grassland

2.1 Bradiford Scarp CWS - Footway Construction

The loss of County Wildlife Site habitat and potential negative impacts on protected species (breeding birds, Hazel Dormouse and Otter) and on SSSI interests is avoided by the applicant's stated intent to leave the woodland adjoining Bradiford Water unmolested.

In the event of planning permission being granted it would seem expedient to attach a condition protecting the integrity of Bradiford Scarp CWS.

2.2 Hedges

Section 3.1 of the Ecological Addendum states:-

The proposed scheme will not impact detrimentally on any of the hedgerows, as they are all being retained as part of the public open spaces.

This is welcome. In the event of planning permission being granted it would seem expedient to attach a condition protecting all those hedges and their veterans, which are associated with the development.

2.3 Future management on undeveloped areas of grassland

The Environmental Statement and Ecological Addendum both state an intention to maintain the current agricultural management regime within undeveloped areas of grassland, both within the red line application boundary and within the field to the east. This would be a welcome concession.

Despite this, there is still residual doubt as to actual intent. Both the Environmental Statement and the Ecological Addendum make many references to retained grasslands as public open space (ES sections: 5.4.39, 5.5.9, 5.5.17, 5.6.10, 5.6.12, 5.6.13; EA section: 3.1 para. 1, section 7 paras. 2 and 7). There appears to be a confusion and incompatibility here. Land would usually either be designated as agricultural land or as public open space.

In order to avoid any ambiguity and in the event of planning permission being granted it would seem expedient to include a condition which gives a management plan for retained grassland.

3. Unresolved Issues

3.1 Resubmitted Phase 1 plan

This remains inaccurate.

Within the field subject to proposed development, the plan shows a species rich hedge as forming the boundary of Bradiford Scarp County Wildlife Site. This is incorrect. The section east of the public footpath is up-grown scrub of mixed species composition; it is woodland not a species-rich hedge. The section west of the public footpath has no hedge at all, just a fence.

The internal hedges within the application field are shown as species poor. This is misleading. Due to their structure and the presence of veteran trees and shrubs these are a high value ecological feature and should be target noted as such.

Wetland including tall herb communities and the pit close to the northwest boundary are still not indicated on the plan nor are they target noted.

There is still no attempt to map all trees of potential bat roost interest. As their locations are unknown it is not possible to assess potential impacts.

3.2 Botanical Surveys

These are described in section 2 of the Ecological Addendum. Further survey work is described in respect of hedges, grassland and wetland.

DCC's ecologist recommended that: *it is essential that a survey of the grassland is undertaken this summer by an experienced and competent botanical surveyor.*

The presented information demonstrates a serious lack of botanical competence. The basic unit of a Phase 2 habitat survey, a comprehensive species list is missing for all habitats and the methodology used in respect of the grassland assessment is unfit for purpose.

One of the most striking illustrations of a lack of botanical competence is the obvious

misidentification of flora. For instance the Ecological Addendum gives:-

- *Wavy Bittercress Cardamine amara* is stated to occur in the Bradiford Scarp County Wildlife Site wetland. Firstly, the English name and the scientific name are for wholly separate species, (Stace, C., 2010) and secondly, *Cardamine amara* is unknown in Devon (Smith, R. et al, 2016).
- *Wild Celery Apium graveolens* is given for the alder woodland. This is highly improbable as it is not a woodland plant. It is light demanding and favours brackish habitats, typically growing towards the upper end of saltmarshes, which it does locally on the Torridge estuary (Smith, R. et al, 2016). The plant most probably meant and which is well illustrated in the Ecological Addendum (Fig 8 *Alder carr (wet) woodland*) is Hemlock Water Dropwort, *Oenanthe crocata*. This is a common misidentification by inexperienced observers and has some past notoriety in having been responsible for human deaths. Wild Celery is edible whilst Hemlock Water Dropwort is deadly poisonous. This is not the work of a competent botanist.
- Hop Trefoil *Trifolium campestre* is described as occurring in the grassland. However, this seems unlikely as it is a plant of more open, sandy and ruderal habitats. The species most probably referred to and which does occur frequently in neutral grasslands is Lesser Hop Trefoil, *Trifolium dubium*.

Lack of botanical competence is also exhibited in respect of recommendations for the proposed attenuation ponds. The Ecological Addendum section 2.2 para. 6 gives: *the margins and bottoms of the ponds will be planted with species typical of the area*. The Environmental Statement 5.6.11 states: *Native species planting around the edge of the ponds will include emergents such as Common Reed Phragmites australis, Bog Bean Menyanthes trifoliata, Arrowhead Sagittaria sagittifolia, Common Water Crowfoot Ranunculus aquatilis, and Water Speedwell Veronica anagallis-aquatica, with Broad-leaved Pondweed Potamogeton natans (or similar) in the middle*.

This is not an assemblage of *species typical of the area*. It is a highly confused proposal lacking botanical competency. It is not a natural combination and several species are not native here. The created habitat would be unsuitable for the proposed combination as it contains a mixture of meso/oligotrophic (nutrient poor) species e.g. Bog Bean *Menyanthes trifoliata* with eutrophic (nutrient rich) species e.g. Arrowhead *Sagittaria sagittifolia* and Water Speedwell *Veronica anagallis-aquatica*. These do not, naturally, occur together in the wild. Furthermore, Arrowhead

is not native in this area and Water Speedwell is rare being confined to habitats associated with the sandy parts of Braunton.

Other than the abundant Pignut, *Conopodium majus* the two most significant species for assessment of grassland interest here and which were identified in my report of March 2017 are Knapweed, *Centaurea nigra* and Burnet Saxifrage, *Pimpinella saxifraga*, both of which are highly characteristic of unimproved, MG5 grasslands (Rodwell, 1992). A competent botanist would be aware of this yet the Ecological Addendum fails to note either, which suggests they were either not found or ignored. Either way this again demonstrates a lack of botanical competence.

3.3 Grassland

The Ecological Addendum states that the LPA requested further information in relation to grassland interests: *Summer survey to re-evaluate the botanical quality of the grassland and fully assess the impacts of the proposed scheme*

The review by DCC's ecologist (Ecological Addendum Appendix 1: Matters raised by Sarah Jennings, County Ecologist, DCC 12/05/17) made the following recommendation in respect of grassland: *it is essential that a survey of the grassland is undertaken this summer by an experienced and competent botanical surveyor and that the applicant provides information on impacts (including area lost) and mitigation (to show net gain). This must be done prior to determination. The current survey does not follow best practice and seems to be incorrect.*

The applicant's latest responses are inadequate. The grassland survey presented in the Ecological Addendum is unfit for purpose. It again fails to follow best practice. It is a mediocre and unscientific attempt at a grassland evaluation. The reported survey is not even sufficient to distinguish between improved, semi-improved and unimproved grasslands. It is insufficient for planning purposes.

It is best practice and recommended procedure when further information is requested in respect of a priority habitat, such as here, that any subsequent survey is conducted at Phase 2 level. The applicant fails to do this. The recommended methodology for survey of Lowland Meadow habitat includes the following:-

- Full perambulation of the site in order to map the boundaries of each distinct floristic community.
- For each community recognised a series of representative quadrats are laid out in order to collect precise information on community composition and species abundance and diversity.
- Following on from this the remaining part of the community is surveyed and any additional species not recorded in the quadrats are noted.
- Finally, abundance is given for each species within each recognised community.
- In the subsequent evaluation, the quadrat data, which in effect captures the nature and distinctiveness of the grassland community, is subsequently compared with the National Vegetation Classification (NVC) and a community type is defined. Only then is an assessment made of the relative ecological merit of the habitat.

The applicant has clearly failed to undertake the level of survey appropriate to the habitat and thus fails to reach a suitable standard. There are no species lists, frequencies, quadrats or plans of communities. As such, the survey does not appear to be the work of either an experienced or a competent grassland surveyor. The appraisal presented is at best a Phase 1+ level, which is insufficient for the determination of this application.

The applicant's evaluation is subjective and unsupported. The standard method for habitat evaluation within Devon is to apply survey results against the criteria within *The Devon Local Sites Manual, Policies and Procedures for the Identification and Designation of Wildlife Sites* (DBRC 2009). For neutral grasslands, evaluation methodology is flexible and allows for differing standards of available information. The Manual states: *The following will be selected as County Wildlife Sites:*

3.2.1 Where NVC/IHS community analysis information is available, all sites, normally of 0.5 ha or greater containing those NVC/IHS communities listed in Appendix 3. [MG5 is included]

3.2.2 Where NVC/IHS data are not available, mesotrophic grassland sites, normally of 0.5 ha or greater, with either:

(a) a high diversity of species (this is measured as the number of different grasses, sedges and herbs over a 1m² area. Specifically for neutral grasslands – 15 species) or

(b) an assemblage of species indicative of the above NVC community types or

(c) the presence of at least 5 of the 'indicator species' listed in Appendix 3). Indicator species should occur widely throughout the body of the site.

So even if a full NVC analysis is unavailable there are still three routes for assessment from field data – on indicator species, on quadrat data alone or on a species assemblage. The information supplied by the applicant is data deficient. There is no grassland species list, no quadrat data, no attempt to apply NVC communities and no list of indicator species. It is not possible to evaluate the grassland from the submitted documents. Indeed the account given is inconsistent and unhelpful. It is wholly descriptive with quantitative detail lacking or ambiguous.

The Ecological Addendum states that the majority of the forbs are represented by 3 species but it then goes on to list 5 more species as “common”. The use of the word common suggests a surveyor unused to grassland assessment as best practice utilises the DAFOR scale which excludes the ambiguous terminology associated with “common”. In total, only 13 species are named. Of these, one is most probably misidentified. Little confidence or reliability can be placed on the applicant’s assessment.

The Ecological Addendum’s description relating to the grass species assemblage is contained within: *In addition to the typical ley grasses, Sweet Vernal Grass Anthoxanthum odoratum was found to be common.* It fails to describe the abundance and distribution of any grass species other than Sweet Vernal Grass, which is an unforgivable oversight in attempting to describe grassland floristics and interests. In this instance, the relative abundances of Rough Meadow-grass, *Poa trivialis*, Red Fescue, *Festuca rubra*, Common Bent, *Agrostis capillaris*, Yorkshire Fog, *Holcus lanatus*, Rye Grass, *Lolium perenne* and Crested Dog’s-tail, *Cynosurus cristatus*, which are all known to occur here are essential for the full characterisation and evaluation of the site’s grassland. The Ecological Addendum refers to all grasses other than Sweet Vernal Grass as *ley*

grasses, this is meaningless and technically incorrect. All the grass species associated with leys are constant components of unimproved MG5 grassland and some of the grass species here do not usually occur in leys.

The submitted documents make no attempt to assign NVC communities. If it had it should have recognised that much of the grassland on site is of significant ecological interest as it fails to align well with NVC communities. The presence of Pignut, *Conopodium majus* in large quantities clearly takes this grassland away from the typical unimproved grassland of lowland Britain, MG5 Crested Dogtail-Knapweed community (Rodwell, 1992). Its strongest affinities are with MG3 Northern Hay Meadow (Rodwell, 1992). However Devon lies outside the geographical range of the distinguishing species for this community, such as Wood Cranesbill, *Geranium sylvaticum* and various Ladies Mantles, *Alchemilla* spp. The presence of Meadow Buttercup, *Ranunculus acris*, Ribwort Plantain, *Plantago lanceolata*, Sweet Vernal Grass, *Anthoxanthum odoratum*, Common Sorrel, *Rumex acetosa* and White Clover, *Trifolium repens* at high cover value, as identified by the applicant, also confirms affinities with MG3 grassland.

Grasslands of the type found have been recognised by JNCC. In their review for JNCC of the National Vegetation Classification, Rodwell et al (2000) make the following observations:

- *Unimproved grasslands of the MG5 Centaureo-Cynosuretum type include more variation than is described in the NVC and there are transitions between these swards and the MG3 Anthoxanthum-Geranium meadow in the North Pennines.*
- *Stands of MG3 Anthoxanthum-Geranium grassland which have only sporadic records for distinctive preferentials also often look transitional to MG5.*

During the course of my extensive surveys on MG5 and other unimproved mesotrophic grasslands in the West Midlands, I developed the term Pignut Meadows for those grasslands in which Pignut is a major component but which lack the character species of MG5 and MG3 grasslands. The species complement described by the applicant is typical of these grasslands. In addition, to Sweet Vernal Grass, *Anthoxanthum odoratum* the most prominent grasses are usually Common Bent, *Agrostis capillaris* and/or Red Fescue, *Festuca rubra*. South of the

Pennines I have observed these grasslands on soils derived from River Terrace deposits, Triassic Sandstones and some Devonian and Carboniferous formations. They typically occur on free draining, moderately fertile soils and the average PH value is frequently lower than in typical MG5 grasslands. Pignut Meadows are most often encountered as permanent pastures rather than as hay meadows. This latter fact accounts for a generally poorer species diversity than in the typical MG3 or MG5 grasslands managed for hay.

Pignut Meadows are an uncommon and naturally occurring grassland community occupying a specialist edaphic niche and are worthy of conservation. The absolute value of the Pignut Meadow here is indeterminable given the lack of quality grassland data but it is at least close to County Wildlife Site standard and is therefore a high value feature. In the absence of a full grassland appraisal a cautious approach should be adopted and this compartment should be considered as equivalent value to unimproved grassland. A significant area would be lost to development either through built development, (housing, roads and a sewage pumping plant - north of the access gate off Windsor Road), or to the two proposed attenuation ponds. Grasslands of ecological interest are difficult to create and take a considerable time to develop. They are of significantly greater ecological merit than easily reproducible pond habitats. There would be a significant net loss of biodiversity within the Pignut Meadow should development proceed.

There is clearly a change in soil conditions from the Pignut Meadow of the valley to the grassland on the scarp slopes, which is reflected in a shift in the florula. Once again it supports a high percentage cover of broad-leaved species (see for instance Ecological Addendum Fig 4) but the Pignut virtually disappears, whilst species more typical of MG5 grassland make an appearance, in particular Knapweed, *Centaurea nigra* and Burnet Saxifrage, *Pimpinella saxifraga*. This community is entirely missed or ignored in the Ecological Addendum despite the fact that much of it would be lost to the development proposals. There is insufficient information provided by the applicant on which to base a full evaluation of this compartment. The soils are

clearly thinner at least over some parts leading to less fertile conditions. This has allowed typical species of unimproved MG5 grassland to establish or survive. However, given an incompetent survey, the absolute merit of this compartment is unknown. Bearing in mind the management here is for permanent pasture, which is consistently poorer in species diversity than grasslands managed for hay, the flora of this compartment as is currently known indicates that its evaluation lies, at least, close to the cusp between semi-improved and unimproved grasslands. A significant proportion of this area would be lost to development, particularly to road construction, landscaping works and the planting of a new hedge. Old grassland with ecological interest is of greater ecological merit than a new hedge. Once again there would be a net loss of biodiversity within this compartment under the current proposals.

It is recognised by all parties that the plateau area occupying the southern part of the application site supports the least diverse grassland flora. This is, at least in part, a wholly natural consequence of the existing soil conditions. A precise evaluation of its relative merit is currently unavailable due to the lack of data within the submitted documents. My own walkover of this compartment was in November, which is insufficient. It is possible that the flora may be in a less favourable state to the rest of the application site but it should also be borne in mind that this compartment has had as long a period in sympathetic management as the rest of the site's grassland and therefore is as far along its journey to an unimproved condition. Vascular plant diversity is only one measure of ecological value. More productive swards generally produce greater invertebrate biomass than less fertile swards. Therefore swards of lesser diversity may be more important for foraging bats and birds. Unfortunately the applicant failed to assess the relative importance of the grassland compartments for invertebrate diversity and abundance.

In the absence of a full species list or any quadrat data it is not possible to make a full comparative assessment. However if the grasslands of the scarp and valley floor are taken as a variant of MG5 then being in access of 0.5ha grassland here might reach the qualifying standard

for a County Wildlife Site (DBRC 2009). Assuming the precautionary principle, these areas should be exempt from any development which would harm their ecological interests. However, the development proposals for these areas includes pond construction, road construction, house construction, foul water plant construction and various landscaping works including the planting of a new hedge. Therefore the extent of ecologically valuable grassland would be significantly reduced. There would be an overall net loss in biodiversity. No grassland mitigation is offered by the applicant in respect of the losses.

3.3.1 Grassland Summary and Evaluation

Summarising from all available data, the assessment and evaluation of the grassland is:-

- 1) Lowest area adjoining Bradiford Scarp CWS – grassland is compatible with a Pignut Meadow, which is a community transitional between NVC types MG3 and MG5. This equates to an unimproved community developed under a pastoral regime. It falls within the category of Lowland Meadow, a Priority Habitat. It could reach the standard of a County Wildlife Site.
- 2) The scarp slopes – it has the species components for MG5 grassland developed under a pastoral regime. Species diversity is not as high as expected as in a hay meadow. It is best treated as a species poor variant of MG5 grassland, which is an unimproved type. This falls within the category of Lowland Meadow, a Priority Habitat. In combination with the Pignut Meadow it may reach the standard of a County Wildlife Site.
- 3) Insufficient information is available to fully characterise the plateau grassland. The known species complement suggests this may be a semi-improved variant of MG6 grassland community.

3.4 Bats

It is worthwhile stating at this point that I have a background of bat conservation work. I was, for instance, the founding chairman of the Worcestershire Bat Group in the early 1980s and was also responsible, through roosts surveys, in helping to establish the importance of the southwest Midlands for the Lesser Horseshoe Bat.

In the absence of any further work on bat activities on site, any rational explanation for the dearth of previous survey work, the lack of a plan indicating potential tree roosts or any survey

on prey availability there is little movement in regard to bats. It could even be argued that rather than clarifying the probable impacts on bats the recent submitted documents have further obscured matters. Most worrisome are several demonstrations of a basic lack of understanding of bat ecology. These include demonstrating a lack of knowledge concerning tree roosts and the wild, inferred assertion that Lesser Horseshoe Bat preferentially frequent gardens.

3.4.1 Tree Roosts

The applicant appears unsure about the purpose of providing a plan of tree roosts, seemingly suggesting that it is only necessary where a tree roost would be lost. This is erroneous; its purpose is to allow a full impact assessment by considering the proximity of any roost or potential roost to development and potential levels of disturbance including those caused by increases in light levels.

The applicant suggests the veteran ash tree has no potential as a tree roost as the trunk is open at the top. This is a clear demonstration of the applicant's lack of competency with regard to bats. The tree is eminently suitable for roosting as most tree-roosting bats do so within small crevices or under loose bark. Overall, across the application site and its immediate surroundings there are many trees with bat roost potential. They are not confined to Shearford Lane or the eastern end of Bradiford Scarp, as suggested by the applicant.

3.4.2 Lighting Plan

The lighting proposals as offered in the Ecological Addendum and Environmental Statement do not constitute a lighting plan. It is insufficient to secure and protect all bat interests related to the application site. The proposals are minimalist and require firming up into a full plan. This should indicate the location and type of all public lighting. It should also indicate expected light zones, show arcs and levels of luminosity plus expected levels of light spill from the entire development, including that from vehicular movements. Specifically, the expected levels of light

spill onto the south-eastern boundary hedge known to be utilised by Lesser Horseshoe Bat (Dean 2013) must be presented.

In its current form, the applicant's statement does not constitute a lighting plan and is unacceptable for determination. A full and proper lighting plan should be submitted before determination.

3.4.3 Level of Survey

The Ecological Addendum claims that: *The CWS bat survey programme was deliberately designed to complement that undertaken by Mike Dean on the adjoining land to the east (Westaway Park) in 2013. He completed mainly spring surveys, whilst CWS undertook early summer to early autumn visits.*

This is untenable, as any reading of the two reports indicates:-

- Mike Dean's efforts were evenly dispersed throughout the entire survey period from April – October. His survey, unlike the applicant's survey, appears to follow best practice. It consisted of 2 parts, a transect survey and a static detector survey. He undertook 13 transect surveys; 1 in April, 2 in May, 2 in June, 2 in July, 3 in August, 2 in September and 1 in October. In addition, automatic detectors were on site for 55 nights, 8 in April, 12 in May, 10 in June, 10 in July, 5 in August and 10 in September.
- By contrast, the applicant undertook just 5 transect surveys between June – September; 2 in June, 1 in July, 1 in August and 1 in September. In addition, a static detector was used for just one 1 night in August.

It is disingenuous to claim that this complements the Mike Dean survey. The two surveys are worlds apart in terms of effort and efficacy. The applicant's efforts are minimal, barely acceptable and fail to follow best practice guidelines in respect of Horseshoe Bats (BCT, 2016), whereas Mike Dean's efforts appear to closely align with best practice guidelines, especially where Horseshoe Bat interests are involved. HM Government's website recommends that Bat Conservation Trust Guidelines are followed in respect of survey work. The Bat Conservation Trust indicates that the deployment of automatic detectors is essential in order to understand

landscape usage by Horseshoe Bats (BCT 2016). The applicant's deployment of an automatic detector for a single night is wholly insufficient.

3.4.4 Foraging habitat and flight corridors

Neither the Environmental Statement nor the Ecological Addendum gives any novel information.

This development would, by virtue of a diminishment in foraging habitat and by increasing local light levels, doubtless have a negative impact on local bats and their populations. The planning issue is whether or not the level of negative impact is unacceptable in relation to national and local plan policies. It is important at this point to differentiate the bat interests into two groups, Horseshoe Bats and all other species.

If Horseshoe Bat interests are excluded then it is probable that the level of negative impact, on the other bat species utilising the development site is likely to be restricted to local significance. It is for the LPA to decide whether or not this level of net biodiversity loss is acceptable.

Horseshoe Bat interests present a different set of circumstances and the level of acceptable negative impact is severely reduced. As European Protected Species the test is whether or not the favourable status of these species could be maintained in the face of this development or this proposal in combination with other recent local planning permissions. Therefore the most pressing issue in relation to bats is potential impact on the European Protected Species, Greater Horseshoe Bat and Lesser Horseshoe Bat. The two most urgent, outstanding issues are negative impacts resulting from loss of foraging habitat in respect of Greater Horseshoe Bat and loss of landscape porosity for both species but particularly for Lesser Horseshoe Bat.

Greater Horseshoe Bat is a specialist forager on soil invertebrates associated with permanent grasslands. Natural England recognise the importance of the Bradiford Valley as a foraging resource for Greater Horseshoe Bat within North Devon (NE 2017). The loss of grassland on this site would reduce the extent of foraging resource within the Bradiford Valley. How significant is

this loss especially when taken cumulatively with other losses to development, locally? Local developments including this one would require the loss of up to 10 ha of permanent grassland plus probably a similar area likely affected by light spill. Unfortunately, none of the ecological submissions associated with this or nearby developments allow for a quantification of negative impact. They have all failed to determine prey availability within the lost grassland resources. In this instance, the applicant was specifically requested to assess grassland invertebrates but failed to take any soil samples whatsoever. The applicant has failed to demonstrate the level of negative impact on Greater Horseshoe Bat foraging and is thus unable to establish that its favourable status could be maintained. This is contrary to the aspirations contained within The Conservation of Habitats and Species Regulations 2010. Under such circumstances it would be sensible for the LPA to refuse planning permission.

It is essential to maintain the local landscape porosity, in respect of Horseshoe Bats if their locally favourable status is to be maintained. Recent research commissioned by DEFRA (Mathews 2015) has shown that Greater Horseshoe and Lesser Horseshoe Bats are light averse throughout their roost sustenance zones and that both require dark patch connectivity. The applicant has failed to establish dark patch connectivity along the bat flight lines, which it has identified (EA Fig 8.1). As most of the flight lines are known to be used by Horseshoe Bats there would be a negative impact on Horseshoe Bats. The applicant has failed to identify this impact and its assessment of bat interests is therefore incompetent.

The Ecological Addendum makes the unsupported and misleading statement that *Lesser Horseshoe Bats do frequently commute through and/or forage around gardens*. They have failed to add but only where ambient light levels are extremely low. It is well documented that Lesser Horseshoe Bat are amongst the most light-sensitive British bat species (Stone et al, 2009; Stone et al, 2012; Schofield, 2008; Rydell, 2006; Mathews et al 2015, Rowse et al 2016). This well established fact has been proven by experimentation, much of which was conducted by Bristol

University (Stone et al, 2009 & 2012). Stone, 2009 demonstrated that *commuting behaviour close to roosts could be perturbed by artificial lighting*. Summer roosts may be located in buildings. Larger, older residential buildings with large roof spaces and adequate entrance routes can be used and as such gardens may need to be traversed but Lesser Horseshoes certainly do not show any preference for gardens. Lesser Horseshoe Bat is primarily a woodland forager, gardens are not utilised in any regular manner. They are, in the main, entirely avoided especially so in the case of suburban gardens. Only in those rare cases of large, dark, wooded grounds could foraging be considered at all probable.

In the absence of any meaningful lighting plan, it should be assumed that all areas close to the proposed urban development would become, in large part, unattractive for the movement of both species of Horseshoe Bat in perpetuity. This would be a serious negative impact for Annex II species.

The number of Lesser Horseshoe Bat passes recorded in 2013 along the hedge between the proposed development and Westaway Park is large and highly significant. It should not be ignored in any assessment and evaluation. Neither the EA nor the ES make any meaningful reference. Energy budgets are tight for Lesser Horseshoe Bat and in order to survive in British landscapes they avoid random energy-consuming movements. As such, there is certainly a purpose to the movements along the south-eastern boundary of the application site. It is not foraging activity, they feed in woodland. The only two likely possibilities are movement between feeding grounds or between a feeding area and a roost, whichever applies both are vital in maintaining a favourable status for this species in this landscape. As there is no prime foraging habitat south of the application site the most feasible reason for using this route is the presence of a roost. The numbers and periodicity are highly indicative of a local maternity roost probably somewhere within the existing urban envelope.

This hedge is an important landscape component in maintaining the local Lesser Horseshoe Bat population. The LPA is reminded that the applicant wholly failed to survey this feature. It is pertinent that the Ecological Addendum (fig.8.1) now indicates this route as a bat flight line. Development alongside this hedge could only have a negative impact on local Lesser Horseshoe Bat movements. They will avoid hedges where light spill occurs (Stone 2009, 2012, Mathews et al 2015) and as energy budgets are tight anything which causes a deviation to create longer flight paths has the potential to seriously disrupt local populations and survivability. The applicant offers no specific mitigation to protect this important node in the local corridor network. The only sensible way of protecting the flight route would be to create a buffer zone of at least 30m with sufficient screening to protect from light spill.

The LPA is reminded that as an Annex II species Lesser Horseshoe Bat is a material consideration. In the event of a decline in the local Lesser Horseshoe Bat population subsequent to a development on this site, the LPA could be liable under the provisions of The Conservation of Habitats and Species Regulations 2010. This is why the precautionary principle is normally applied in such cases. The applicant has failed to demonstrate a lack of negative impact or even suggested any reason for the use of this feature by bats, under these circumstances planning permission is usually refused.

Other than lighting the only mitigation offered by the applicant is the proposed provision of new hedging on the northern side of the development as compensation for routes lost or diminished by light spill (thereby accepting negative impact). This is poorly considered mitigation, it is very weak. Firstly, under current proposals and with no specific mitigation offered, it would itself be subject to light spill. Secondly, it would not constitute an acceptable flight way for Horseshoe Bats for at least 5 and perhaps 10 or more years. It is not an instant fix. There would undoubtedly be loss of local landscape porosity under the current proposals.

DCC ecologist (Ecological Addendum Appendix 1) states that: *If the applicant can show that there will be no impact on bat flight lines / potential foraging habitat then it may be possible to determine this application without further survey.*

The applicant fails to provide any further information whatsoever in relation to bat flight lines or foraging habitat therefore by default further survey is necessitated. None is presented and therefore this application should fail.

The value to bats of the plateau above the Bradiford Valley has already been recognised by the LPA in its determination of the Westaway Park application. It could be considered perverse if it were to undermine its own decision by granting a planning permission which would negatively impact on the favourable status of local Horseshoe Bat populations utilising this area.

3.5 Hazel Dormouse

Given the applicant's withdrawal of the proposal to damage the Bradiford Scarp CWS woodland and the stated intention to retain intact all hedges the direct threat to local Hazel Dormouse habitat is resolved.

Despite DCC's ecologist raising the issue, the applicant still fails to address the fact that their survey was inadequate in failing to reach the required score of 20 by virtue of the restricted length of time the boxes were left on site.

However, this could be considered irrelevant as Hazel Dormouse is known to occur within Bradiford Valley SSSI (NE 2017), which adjoins the development site. Therefore, the significant, outstanding planning issue is whether the level of disturbance to the local Hazel Dormouse population, in particular that associated with the adjacent SSSI, resulting from this development would be compatible with the provisions incorporated within The Conservation of Habitats and Species Regulations 2010.

All parties agree that predator pressure would increase as result of this development and cumulatively as a result of all nearby developments. The issue therefore is whether or not the increased level of predator pressure is compatible with the retention of the favourable status of the local Hazel Dormouse population. However, there is a dearth of quality data on which to base an informed opinion. In the absence of such data, it is usual in the case of European Protected Species to adopt a cautious approach to be certain of retaining favourable status. It is for the applicant to prove no negative impact, which the submitted documents fail to achieve. The Ecological Addendum's acceptance of increased predator pressure should provide sufficient grounds for the rejection of this planning application.

3.6 Invertebrates

An assessment of invertebrate interest and impacts was requested by the Local Authority and recommended by DCC's ecologist. This is dealt with by the applicant in part 6 of the Ecological Addendum. The account demonstrates an exceptionally poor attempt at an invertebrate survey. It fails to follow recommended guidelines and is unfit for purpose. Its conclusions are wholly unreliable. Noting a few macro-invertebrates during a botanical walkover does not constitute an assessment of invertebrate interest. There was no attempt to sample the grassland or the hedgerow habitats threatened by this development by any approved or recognised method such as netting or trapping. Indeed there appears to be no sampling undertaken whatsoever.

One of the principal reasons an invertebrate survey was requested was due to the potential importance of the grassland habitats for foraging bats. Most of the prey taken by bats is not large day flying invertebrates, such as butterflies or dragonflies. Most grassland prey items either originate as members of the soil invertebrate community or utilise the matt of the sward as a daytime refugia. The only way of assessing invertebrate potential is to sample the sward by netting and/or trapping techniques and the soil community by sampling. Neither technique was

employed here. There is no attempt to either quantify invertebrate abundance or provide qualitative data on species composition.

Specialist foragers of grassland invertebrates, including Noctule and Greater Horseshoe Bat, are known to frequent the site so prey availability should be assumed. However, the relative importance of the site as invertebrate habitat and the grassland's significance as a bat foraging resource remains wholly unresolved.

3.7 Bradiford Scarp County Wildlife Site

The abandonment of the proposal to build a footway through the woodland of the CWS and the intention to leave that section undisturbed is helpful.

DCC's ecologist makes the following observations: *detailed information needs to be provided prior to determination. This information should also clarify impacts and mitigation at the western end (the Weir) where the development seems to be much closer than 80m to the CWS*

It is therefore surprising that neither the Ecological Addendum nor the Environmental Statement make any reference to the loss of a part, albeit small, of the County Wildlife Site to development. The Ecological Addendum, *Figure 8 Ecological Mitigation*, clearly shows one building (no.4 Proposed Foul Water Pumping Station) as impinging across the boundary of the CWS. Close to and southwest of this there is a note of *Garden buffer against CWS*. However the Masterplan appears to show the latter as a built structure, probably a house, adjacent to the CWS. There is no effective buffering here and to suggest "garden buffer" is misleading.

So there is a clear but unstated intention to build within the CWS. Although the footprint of the foul water plant within the CWS is small, construction here would necessitate damage to a much greater area of the CWS. There is no ecological assessment of the construction phase impact or of the loss of habitat in perpetuity.

Similarly, construction of a house immediately adjacent to the CWS may also require access through the CWS. There is no construction phase impact assessment.

My March 2017 report raised the issue of land stability in association with new construction here bearing in mind that a former quarry, Manning's Pit occupies a section of the CWS. Is construction of at least two buildings above the quarry feasible without land stabilisation work within the CWS? This question remains unresolved. No impact assessment of the construction phase or operational phases is offered.

Damage to a County Wildlife Site would occur and there is no mitigation. These are further grounds to refuse planning permission.

3.8 North Devon Biodiversity Network / Corridor Functionality

The applicant appears to argue that there would be no impact on corridor functionality or that there would even be an improvement (e.g. ES 5.5.16 and 5.6.15). This is wishful thinking, it is irrational. It is not possible to increase the urban envelope with its direct loss of habitat and increase disturbances from human activity and their domestic pets without the diminishment of biodiversity in the long term within the green network around this part of Barnstaple. The only sensible question concerns the extent and significance of the negative impact.

Both the Environmental Statement and the Ecological Addendum (e.g. ES 5.7.3, EA 9) appear to only consider network function in relation to the movements of animals and in particular larger vertebrates and mainly by night. Ecological networking and functionality extends far beyond vertebrate movement. It applies to all species of wildlife and is just as important for plants and invertebrates. Most wildlife dispersals are short distance and probably the greater proportion is random. The stepping stone provision, as indicated in NPPF, is recognition of this ecological principle. The need for both space and corridors is vital to species with a low dispersal capacity. Any barrier may be significant and all habitat loss within a corridor is potentially significant.

Other than bat movements, which are dealt with elsewhere, probably the worst feature of this development in terms of corridor functioning is the proposal to build above the part of the site known as Manning's Pit. Increasing the urban envelope at this specific point severely reduces dispersal ability by creating a pinch point, within the green infrastructure. It severely restricts dispersal to all species, other than those associated with riparian habitats. Loss of corridor integrity should be avoided. Removal of development north of the access gate off Windsor Road would be essential to ameliorate this impact.

The Environmental Statement 5.7.3 claims that the proposal includes the creation of an ecological corridor along the northern side of the site, which would provide increased feeding for bats and birds, and basking opportunities for reptiles, and would maintain the connectivity between Windsor Road and Shearford Lane to the east. This is nonsense. There already exists a wholly adequate and functioning corridor here currently utilised by bats and birds. The development proposals could only diminish the value of the existing corridor for these and other wildlife. The development proposes the construction of houses and a foul water pumping plant within and at the western end of this corridor. This would be a significant diminishment. The only other stated intention here is to construct two attenuation ponds on land which currently has a greater ecological value. This would be a further diminishment in corridor functioning. In addition, the proposed development due to increases in disturbances could only have a negative impact on the existing corridor. These include greater light spill, more human activity, increased predator pressure from cats, more dog activity and higher noise levels. There would not be a creation of a novel ecological corridor but a diminishment of an existing one.

3.9 Cumulative Impacts

From a planning perspective the issue of cumulative impact is most relevant in relation to matters affecting European Protected Species. Hazel Dormouse and Horseshoe Bats are the most likely to suffer significant negative cumulative impact (specific arguments in relation to these

species is dealt with in the relevant sections above). The applicant's offering on these matters is confused and unreliable. For instance, it recognises increased predator pressure but then dismisses it as not significant on the basis of a subjective opinion without supporting evidence. This whole section within the Ecological Addendum is unscientific and appears for the most part the product of wishful thinking.

The LPA is reminded that it is for the applicant to clearly demonstrate through survey and objective supported reasoning the lack of negative impacts. This is absent within the submitted documents. Therefore it appears impossible for the LPA to be assured that the favourable status of European Protected Species can be maintained as defined in The Conservation of Habitats and Species Regulations 2010. It would appear unreasonable for any outcome other than a refusal of planning consent.

4. Concluding remarks

The Environmental Statement and Ecological Addendum appear to suggest that the proposed development would be beneficial overall for biodiversity. This seems to be a window dressing exercise. It has no substance and is not evidence based. The potential negative ecological impacts on protected and priority species (bats, birds, mammals and invertebrates) and habitats (meadow and wetland) plus the net loss in biodiversity, direct damage to a County Wildlife Site, disturbance to a SSSI and a reduction in green infrastructure functionality remain sufficient to refuse planning permission.

The favourable continued status of local populations of several European Protected Species is threatened. The risks are at least moderate for Hazel Dormouse and Greater Horseshoe Bat and very high for Lesser Horseshoe Bat.

Under the current proposals it seems impossible to achieve an acceptable level of negative ecological impact and net loss of biodiversity. For an acceptable level of negative impact on biodiversity to be attained, substantial alterations to the Masterplan would be necessary. Most important would be a considerable reduction in the footprint of the development. This to include:-

- A buffer zone between built environment and south-eastern boundary hedge (common boundary with Westaway Park) of at least 30m – this to protect Lesser Horseshoe Bat interests.
- Restriction of development to south of the access gate off Windsor Road. This in order to protect: grassland (Priority Habitat) interests, Bradiford Scarp CWS interests (from construction work), wetland (Priority Habitat) interests, corridor/network functioning, reptile and bat interests.
- Less land take on the scarp slopes – in order to protect grassland and bat interests.

If undertaken these measures would also reduce direct and cumulative impacts on SSSI, CWS and European Protected Species interests.

Other issues which also need to be addressed are:-

- A full and proper lighting plan submitted and agreed in advance of any consent.
- A full impact assessment of the proposed attenuation ponds to include a plan of precise location, construction and landscaping.
- A full ecological management plan in respect of all habitats and features of ecological interest for the post construction phase, which should be agreed prior to any consent. This should, most importantly, aim to maintain the current management regime within remaining areas of grassland, provide measures to protect Bradiford Scarp CWS and Bradiford Water SSSI from disturbance and provide a plan to protect and enhance hedges, trees and veterans.

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