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Tyning Hill, Radstock

Update Ecological Assessment Report (2016)

Report Number:	2222_R03b_HM_SMC
Author:	Hazel Marsh MCIEEM CEnv
Checked:	Julian Arthur CEcol MCIEEM CEnv

Tyler Grange

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Summary

S1. This report has been prepared to inform an outline planning application for up to 55 dwellings at Land at Tyning Hill, Radstock, hereafter referred to as the 'site'. It updates a previous ecological assessment undertaken in 2014.

S2. The site is not covered by any statutory or non-statutory protection. There are no sites protected at a European level within 7km however there are three geological Sites of Special Scientific Interest (SSSI) and fourteen Sites of Nature Conservation Interest (SNCIs) within 2km. Owing to the scale of development proposed, and the distances involved, impacts to these sites are not considered likely.

S3. The area in the footprint of the development together with surrounding abandoned farmland under the developer's control has been assessed. The whole area, including the application area, is dominated by tall, coarse grassland with patches of tall ruderal species and scrub that are common and widespread habitats that are of **site importance**. Approximately 0.2ha of more species-rich grassland and pioneer habitat has established on the skeletal soils on the concrete bases of the former mine workers' cottages that have been cleared, are of **local to district importance**. Tree lines and a hedgerow are of **local importance**.

S4. In terms of fauna:

- The site supports four notable invertebrates and the assemblage is considered to be of county importance. At least three of these are likely to exist in similar habitats that extend beyond the application area to the west and north within the site;
- Common reptiles of local importance are also present;
- Bats would not roost at the site, and whilst the habitats are not likely to be of importance for foraging, bats could commute across the site, with as noted, the woodland edge adjacent to Tyning Tip being the most obvious commuting route;
- The site is likely to be of some importance to nesting and foraging birds, though there is an abundance of similar habitat locally. Hedgerow planting and offsite management will offset impacts. Nest sites on buildings will provide new opportunities for some priority species;
- No evidence of badgers was recorded though there are anecdotal reports of a sett, which could exist within dense scrub that could not be searched during the surveys.

S5. When assessed against the criteria for local wildlife site selection in BANES, the site would qualify and hence would be protected under saved policy LE. 9 of the BANES Local Plan 2007. However, this assessment has confirmed that, with the exception of the reptile populations, the ecological features of greatest importance are relatively restricted in distribution. Furthermore, comparison of the 2014 and 2016 surveys demonstrates that in the absence of management there is an ongoing trend towards dominance of rank vegetation at the expense of more species-rich habitats. Development therefore provides a mechanism to arrest this trend and to maintain or re-create the most important habitats both botanically and that support important fauna. It also presents an opportunity to restore the currently unmanaged and species-poor rank habitats within the site outside of the application area.

S6. In order to compensate for habitat losses in the footprint of the development a strategy to enhance and restore the 3.9ha of habitats surrounding the application area has been devised.

S7. A standalone Ecological Management Plan (EcMP) has been produced (Tyler Grange report ref. 2222_P03). This describes how approximately 3.9ha of habitats in the developer's control would be managed to:

- Recreate and safeguard in the long-term the species-rich pioneer grassland community of importance to flora, invertebrates, reptiles and birds;
- Restore species-rich grassland where it is currently unmanaged and rank;
- Restore and create hedgerows, and create a community orchard;
- Manage public access with pathways created and managed to maximise the amenity and interpretative value of the land.

S8. Measures to address impacts to protected and priority fauna during construction, and to maintain and where possible improve their conservation status are described.

S9. In the event a badger sett is present in dense scrub then there is sufficient land available under the developer's control to mitigate as required prior to construction commencing.

S10. The mitigation and enhancement summarised above and detailed within the EcMP could be controlled by appropriately worded planning conditions, with implementation of the EcMP also secured by planning condition.

S11. By adopting the mitigation and enhancement policies described, the proposed development should be in conformity with relevant planning policy and legislation, as set out at **Appendix 1**.

Section 1: Introduction

Instruction

1.1. This report has been prepared by Tyler Grange LLP on behalf of David Webb Management Ltd. It sets out the findings of an update ecological assessment at Land at Tyning Hill, Radstock (hereafter referred to as the 'site'). The site is centred on National Grid Reference ST 696 553.

Context

1.2. This report has been prepared to inform an outline planning application for up to 55 dwellings is to be submitted to Bath and North East Somerset Council (BANES).

1.3. Tyler Grange prepared an ecological assessment in January 2015 to inform previous development proposals for the site (report reference 2222_R01a_AH_SMC). This was informed by detailed surveys undertaken in 2014. This report is referred to hereafter, and where relevant, as 'the 2014 ecological assessment'.

1.4. The planning application was subsequently withdrawn (15/00855/OUT). Ecology issues with respect to that application have been discussed informally with Lucy Corner, ecologist for BANES to inform the strategy for the new application to which this report refers.

1.5. Given the time that has elapsed, and the dynamic nature of ecological features, some update surveys to inform the current application are required.

Purpose

1.6. The purpose of this report is to:

- Using available background data and results of update field surveys, describe and evaluate the ecological features present within the likely 'zone of influence' (ZoI)[1] of the proposed development;
- Assess ecological issues and opportunities as a result of development; and
- Where appropriate, describe mitigation and enhancement proposals, together with planning controls to ensure their delivery, to ensure conformity with policy and legislation.

1.7. This assessment and the terminology used are consistent with the 'Guidelines for Ecological Impact Assessment' published by the Chartered Institute for Ecology and Environmental Management (Ref. 1).

[1] Defined as the area over which ecological features may be subject to significant effects as a result of the proposed project (Ref. 1)

Section 2: Methodology

Definitions

2.1. The 'site' is defined by the blue line boundary (see **Plan 2222/P02**), however only the area within the red line boundary, the 'application area', is proposed for development.

2.2. The 'study area' extends a 1km radius for protected and priority species records (4km for bats, given there are some heavily protected roosts in the district), 2km for non-statutory site designations and nationally designated statutory sites and a 7km radius for European statutory site designations.

Scoping

2.3. The scope of the ecological assessment was determined by undertaking a desk based assessment of available records and published sources, together with an initial site survey. With this information, the ZoI of the proposed development was established, together with any further detailed work - such as detailed surveys - that might be necessary to inform the assessment. Lucy Corner, the Bath and North East Somerset Ecologist, was consulted regarding the scope of surveys.

Data Search

2.4. The aim of the data search is to collate existing ecological records for the site and adjacent areas. Obtaining existing records is an important part of the assessment process as it provides information on issues that may not be apparent during a single survey, which by its nature provides only a 'snapshot' of the ecology of a given site.

2.5. The data search covered the study area using the distances defined in paragraph 2.1. It was conducted as part of the 2014 ecological assessment in September 2014 and updated in July 2016 (although 2014 records obtained from the Bristol Regional Environmental Records Centre during the original data search were considered valid and so were not updated). The following organisations and resources were contacted and consulted:

- Bristol Regional Environmental Records Centre, for protected and priority[2] species and habitats, and locations of non-statutory sites;
- Multi-Agency Geographic Information for the Countryside (MAGIC) Interactive Maps (Ref. 2), for locations of statutory sites;
- Natural England's website (Ref. 3) for citations of nationally designated sites;
- Joint Nature Conservation Committee website (Ref. 4) for citations of internationally designated sites;

[2] UK priority species and habitats are those subject to conservation action and referred to as Species of Principal Importance (SoPIs) or Habitats of Principal Importance (HoPIs). They are listed at Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act states that local planning authorities must have regard for the conservation of both SoPIs and HoPIs.

- Wildthings BAP (LBAP) (Ref. 5) for priority habitats and species subject to conservation action, to assist with the evaluation of ecological features and to inform site enhancement strategies;

- Bath and North East Somerset Council website (Ref. 6) for details of relevant local planning policies and supplementary planning guidance; and

- The National Character Area (NCA) profile, as defined by Natural England (NE) (Ref. 7), to determine the important ecological resources at a regional level. NE recognises 159 such NCAs, the boundaries of which are derived using the distribution of geology, wildlife and natural features, and on the land use pattern and human history of each area.

2.6. Information supplied by these organisations has, where relevant, been incorporated into the following account with due acknowledgement.

Update Extended Phase I Survey

2.7. An extended Phase I habitat survey of the site was undertaken on 26 June 2014 and updated on the 27th June 2016 by Julian Arthur, an experienced ecological consultant, Chartered Ecologist, Chartered Environmentalist and full member of CIEEM. The habitat survey methodology was based on guidance set out in the 'Handbook for Phase I habitat survey' (Ref. 8). This entailed recording the main plant species and classifying and mapping broad habitat types present.

2.8. Note was taken of the more conspicuous fauna, and any evidence of, or potential for the presence of protected/notable flora and fauna.

2.9. A basic inventory of the habitats and a representative species list was produced. Where access allowed, adjacent habitats were also considered, in order to assess the site within the wider landscape and to provide information with which to assess possible impacts within the context of the site boundary.

2.10. This report documents the results of both surveys. The weather conditions during the 2014 survey were overcast with some heavy rain and during 2016 it was dry with bright sunshine.

Detailed Phase II Surveys

2.11. The scope of further detailed survey work required was determined following receipt of data and completion of the extended Phase I habitat survey in 2014 and following informal consultation with Lucy Corner, the Bath and North East Somerset Council Ecologist in 2015.

2.12. Table 2.1 below lists the surveys conducted, together with dates. The respective Appendix should be referred to for further information concerning survey methods, surveyors and rationale. All surveys were conducted in accordance with best practice.

Survey	Date	Appendix	Notes
Terrestrial Invertebrates (confined to application area)	29 July 2014	2	One visit to assess habitat potential for invertebrates and sampling of invertebrate species; not necessary for remainder of site boundary owing to the lower potential of the habitats present

Survey	Date	Appendix	Notes
Reptiles (confined to application area)	August – September 2014	3	One visit set up survey and seven surveying visits; not considered necessary to repeat for remainder of site boundary since presence can be assumed
Badger Survey (site boundary)	26th June 2014 and 27th June 2016	4	Undertaken during the Phase 1 Habitat surveys, comprising a walkover of the site to identify any potential badger signs.
Detailed botany (site boundary)	30th June 2016	5	Single visit comprising a detailed walkover of the site and the site boundary recording all species encountered and assessing their abundance using the DAFOR scale.

Table 2.1. Detailed surveys undertaken to inform the assessment

Evaluation

2.13. The evaluation of habitats and species is defined in accordance with published guidance (Ref. 1). The level of importance of specific ecological features is assigned using a geographic frame of reference, with international being most important, then national, regional, county, district, local and lastly, within the site boundary only.

2.14. Importance judgements are based on various characteristics that can be used to identify ecological features likely to be important in terms of biodiversity. These include site designations (such as SSSIs), or for undesignated features, the size, conservation status (locally, nationally or internationally), and the quality of the ecological resource. In terms of the latter, quality can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats) or species populations or assemblages.

Limitations

2.15. Although access to the whole site was provided during both the 2014 and 2016 surveys the nature of the site which includes areas of dense, impenetrable scrub meant that access was limited in parts of the site and field signs for certain species (e.g. badgers) may have been present but could not be confirmed.

Quality Control

2.16. All ecologists at Tyler Grange LLP are members of CIEEM and abide by the Institute's Code of Professional Conduct.

Section 3: Ecological Features

Site Context

3.1. The site is at the foot of a southeast facing slope, adjacent and to the north of a colliery spoil heap (Tyning Tip) that now supports mixed woodland and acid grassland. In the south west corner, the application area, was once the location of colliery workers' cottages, though these have been demolished leaving the building platforms, roads and rubble piles. F3 comprises an old orchard which has become overgrown with dense scrub and tall ruderal vegetation. The rest of the site was previously pasture/meadow but has been left unmanaged and is now dominated by coarse grasses. To the north and northeast of the site are arable fields.

3.2. The site is located on the western most edge of the Cotswolds NCA (No.107). This comprises a steep scarp supporting unimproved limestone grassland, cut by numerous wooded valleys, that provides a surround for the settlements of Cheltenham, Gloucester, Stroud and Bath. It is also immediately adjacent to the Bristol, Avon Valley and Ridges NCA (No. 118), as defined by Natural England. This NCA is approximately 21% urban and is dominated by the City of Bristol and its surrounding areas including the M4 and M5 corridors. The area is characterised by steep wooded slopes, ridges and broad valleys and large expanses of farmland.

Protected Sites

3.3. The site is not covered by or adjacent to any site which is designated on account of its nature conservation importance. However, several such sites, which are either statutorily or non-statutorily protected, are present within the stated study area.

Statutory sites

3.4. There are no European statutory sites identified within 7km of the site. There are three Sites of Special Scientific Interest (SSSIs) within 2km but all are designated for geological rather than ecological interest and are therefore not considered further in this report.

Non-statutory sites

3.5. The fourteen non-statutory sites (known in Bath and North East Somerset as Sites of Nature Conservation Importance (SNCI's) within 2km of the site are listed in Table 3.2 below and their locations are illustrated in Appendix 6.

Site Name	Designation (and reference number)	Distance and Direction from Site (km - N/S/W/E)	Description/Summary of reason for designation
Lower Wood and Pond	SNCI (BN178)	0.4 km N	Semi-natural broadleaved woodland, scrub, planted mixed woodland, standing and running water and associated marginal habitats. Records for ladies' mantel *Alchemilla filicaulis* and blunt flowered rush *Juncus subnodulosus*.

Site Name	Designation (and reference number)	Distance and Direction from Site (km - N/S/W/E)	Description/Summary of reason for designation
			Other species are poorly recorded but includes sweet flag *Acorus calamus*.
Woodborough Farm Woods	SNCI (BN130)	0.5 km E	Planted mixed and coniferous woodland with recolonising species including birch *Betula* sp., field maple *Acer campestre*, hawthorn *Crataegus monogyna*, beech *Fagus sylvatica* and ash *Fraxinus excelsior*. Ground flora species not fully known but common spotted orchid *Dactylorhiza fuchsii* present.
Wellow Brook	SNCI (BN214)	0.5 km W	Running water with associated marginal habitats, unimproved and semi-improved calcareous grassland, unimproved and semi-improved neutral grassland, semi-natural broadleaved woodland, scrub and amenity grassland. Notable species are otter *Lutra lutra*, dipper *Cinclus cinclus* and corn parsley *Petroselinum segetum*.
Council Depot Wood	SNCI (BN129)	0.7 km NE	Planted mixed and coniferous woodland containing larch *Larix* sp., Scots pine *Pinus sylvestris* and Norway spruce *Picea abies* on eastern side and ash, oak *Quercus* sp. and sycamore *Acer pseudoplatanus* to the west. Diverse ground flora under broadleaved trees includes bluebell *Hyacinthoides non-scripta*, spotted hawkweed *Hieracium spilophaeum*, squirrel tail fescue *Vulpina bromoides*, scaley male fern *Dryopteris affinis* and sanicle *Sanicula europaea*.
Radstock railway cutting and adjacent fields	SNCI (BN171)	0.7 km SW	Semi-improved neutral grassland, scrub, planted broadleaved woodland and geological interest. Species present includes wood small reed *Calamagrostis epigejos*, Bithynian vetch *Vicia bithynica*, but species inventory not fully known.
Writhlington Combe	SNCI (BN132)	0.8 km SE	Semi-natural broadleaved woodland possibly with grassland as well. Species assemblage is unknown.
Waterside and West Hill	SNCI (BN36) Ancient	0.9 km SW	Running water with associated marginal habitats, ancient woodland, unimproved calcareous grassland, semi-improved

Site Name	Designation (and reference number)	Distance and Direction from Site (km - N/S/W/E)	Description/Summary of reason for designation
Gardens	woodland site		grassland, scrub, improved grassland and geological interest. Haydon Wood N is oak with hazel, ash and locally alder Alnus sp. Ground flora includes wood anemone, sanicle, ramsons *Allium ursinum*, goldilocks *Ranunculus auricomus*, yellow archangel *Lamiastrum galeobdolon*, bluebell and wood speedwell *Veronica montana*. Other notables including marsh arrow grass *Triglochin palustris*, marsh ragwort *Senecio aquaticus*, bog stitchwort *Stellaria alsine*, fan-leaved water-crowfoot *Ranunculus circinatus*, reed sweetgrass *Glyceria maxima*, short-fruited willowherb Epilobium obscurum, early hair grass *Aira praecox*, cornflower *Centaurea cyanus* and crested hair grass *Koeleria macrantha*.
Norton Radstock disused railway line	SNCI (BN168)	0.9 km W	Semi-natural broadleaved woodland, scrub, unimproved calcareous grassland, neutral grassland and semi-improved neutral grassland. Notable species include spotted hawkweed, bird's foot trefoil *Lotus corniculatus*, hoary plantain *Plantago media*, black knapweed *Centaurea nigra*, woolly thistle *Cirsium vulgare*, ramsons, toad flax *Linaria vulgaris*, and musk mallow *Malva moschata*. Ramsons, bluebells and wood anemone on riverbank. Recorded butterfly species including grizzled skipper *Pyrgus malvae*, small heath *Coenonympha pamphilus,* brown argus *Aricia agestis* and Essex skipper *Thymelicus lineola*.
West Close Brake	SNCI (BN131)	1.0 km E	Semi-natural broadleaved woodland with oak, ash, hazel, hawthorn and holly Ilex aquifolium. Ground flora includes ramsons, bluebell, moschatel, goldenrod *Solidago virgaurea* and dewberry *Rubus caesius.*
Fox Hills	SNCI (BN37)	1.0 km SW	Stream with associated marginal habitats, semi-natural broadleaved woodland and semi-improved neutral grassland. Woodland species include oak and ash, hazel *Corylus avellana*, hawthorn, elder, field maple, ransoms, dog's mercury *Mercurialis perennis*, yellow archangel *Galeobdolon luteum*, violets. Grassland notable

Site Name	Designation (and reference number)	Distance and Direction from Site (km - N/S/W/E)	Description/Summary of reason for designation
			species include knapweed *Centaurea* sp., bird's foot trefoil *Lotus corniculatus*. Springs in west of site considered of high conservation value.
Camerton Wood	SNCI (BN40) Ancient woodland register	1.4 km N	Semi-natural broadleaved woodland and semi-improved neutral grassland. Mostly planted Norway spruce but with parts beech, ash, yew Taxus baccata and sycamore. Interesting ground flora including sanicle, twayblade *Neottia ovata*, Bath asparagus *Ornithogalum pyrenaicum*, bluebell *Hyacinthoides non-scripta*, wood speedwell *Veronica montana*, wood anemone *Anemone nemorosa*, and common spotted orchid. Known feeding ground for bats including lesser *Rhinolophus hipposideros* and greater horseshoe bats *Rhinolophus ferrumequinum*.
West Clandown Field	SNCI (BN32)	1.6 km NW	Unimproved calcareous grassland, part of an improved field, supporting wild clarey *Salvia verbenaca*, spiny restharrow *Ononis spinosa*, black nightshade *Solanum nigrum*, small-flowered cranesbill *Geranium pusillum*, and lady's bedstraw *Galium verum*.
New building fields	SNCI (BN39)	1.8 km N	Unimproved calcareous grassland with dominant species upright brome *Bromus erectus* on slopes, cock's foot *Dactylis glomerata* on flat areas. Notable species include bee orchid *Ophrys apifera*, small scabious *Scabiosa columbaria* and wild thyme *Thymus drucei.*
Lower Plantation	SNCI (BN38)	1.9 km N	Planted broadleaf woodland. Oak and Ash woodland with occasional beech and hazel understorey. Possible green field speedwell *Veronica agrestis* on site. Other ground flora species include bluebell, ramsons and moschatel *Adoxa moschatellina*. Known feeding ground for lesser and greater horseshoe bats

Table 3.1: Non-statutory sites within the study area

Habitats and Flora

3.6. Habitat features are illustrated on **Plan 2222/P02**. The Application Area and the remainder of the Site are described separately below, followed by offsite habitats on adjacent land. The change in the habitats since the 2014 surveys is also described.

3.7. A full botanical species list from the 2016 survey is provided in **Appendix 5**.

Application Area

3.8. As in 2014, the application area continues to support predominantly rank grassland and scrub, though with some pioneer habitats on hardstanding which have established since the colliery workers' cottages have been demolished.

3.9. During the 2014 survey, concrete and tarmac hardstanding in the south western corner of the application area was colonising with typical brownfield pioneer communities (Photograph 1). Species recorded included a mix of grasses such as: Yorkshire fog *Holcus lanatus*; cock's foot; false oat-grass *Arrhenatherum elatius*; barren brome *Anisantha sterilis*; red fescue *Festuca rubra*; perennial rye-grass *Lolium perenne* and annual meadow grass *Poa annua*; and forbs such as: greater plantain *Plantago major*; black medick *Medicago lupulina*; creeping buttercup *Ranunculus repens*; bittercress *Cardamine sp.*; wild carrot *Daucus carota ssp. carota* ; wild parsnip *Pastinaca sativa*; creeping thistle *Cirsium arvense*; groundsel *Senecio vulgaris*; field bindweed *Convolvulus arvensis*; ribbed melilot *Melilotus officinalis*; mugwort *Artemisia vulgaris*; creeping cinquefoil *Potentilla* sp.; bird's-foot trefoil *Lotus corniculatus;* common toadflax *Linaria purpurea*; blue fleabane *Erigeron acer*; ploughman's spikenard *Inula conyzae*; and red clover *Trifolium pratense*. Woolly thistle *Cirsium eriophorum* was also recorded in this area.

3.10. The 2016 survey, which was undertaken in the same month as in 2014, confirmed that the application area supports predominantly tall, coarse grassland (Photograph 2) which is dominated by false oat-grass, with abundant Yorkshire-fog, cock's-foot with locally abundant perennial rye-grass. Tall, ruderal herbaceous species are also a prominent feature of this community with stands of species such as goldenrod *Solidago virgaurea*, hemp-agrimony *Eupatorium cannabinum*, mugwort and ribbed melilot.

Photographs 1 (2014) and 2 (2016): Looking southwest across the site showing the old tarmac road. Both photos taken in late June. As can be seen, the pioneer and grassland community is better established and more mature in 2016.

3.11. Stands of bramble *Rubus fruticosus* agg. are also present, dominating areas of the site, though their maturity is reduced from what might be expected since it is understood that the whole application area was the subject of a cut to a low level in autumn 2014.

3.12. Finer, species-rich grassland was present in discrete areas on skeletal soils around the peripheries of the concrete bases (Photograph 3). This community was better developed when compared with that recorded in 2014, with locally abundant species such as oxeye daisy *Leucanthemum vulgare*, mouse-ear hawkweed *Pilosella officinarum*, locally frequent pyramidal orchid *Anacamptis pyramidalis* (TN2 & TN3, **Plan 2222/02**), occasional common spotted orchid (TN2, **Plan 2222/02**), wild parsnip *Pastinaca sativa*, yellow oat-grass *Trisetum flavescens*, wild carrot *Daucus carota* and woolly thistle (a red list species but of 'least concern'; TN5, **Plan 2222/02**).

Photograph 3 (2016): Species rich grassland around peripheries of concrete bases.

3.13. There are occasional mature fruit trees (apple) *Malus domestica* and cherry *Prunus* sp., with blackthorn and hawthorn *Crataegus monogyna* interspersed within the dense scrub and grassland.

3.14. There are two small buildings at the southern boundary. One is a small electricity substation and the second is a small timber shed with a mono pitch roof.

3.15. The south west boundary comprises of an earth bank that supports bramble and blackthorn scrub, rank grassland and tall ruderal vegetation.

Remainder of Site

3.16. The remainder of the site (F1, F2 and F3, **Plan 2222/02**) is neglected farmland that does not appear to have been managed recently. It is as a consequence dominated by coarse, competitive grassland species, with the species complement being the same as that recorded in the application area (Photograph 4).

Photograph 4 (2016): Looking south east towards the application area from F3.

3.17. The fields are bounded by unmanaged hedgerow and trees lines. A mature, broad-leaved treeline and hedgerow (Photograph 5) follows the north western and north eastern boundaries of the site, extending into an area of more extensive woodland to the north-west of the site (Tyning Tip). An outgrown hedgerow dominated by trees exists to the north of the application area; this sits on a shallow earth bank.

Photograph 5 and 4: Looking south west along unmanaged intact hedgerow on the north eastern site boundary.

3.18. No one species of tree was recorded as being dominant within the hedgerow and tree lines, with frequent ash, grey willow *Salix cinerea*, oak *Quercus robur*, hazel *Corylus avellana* and rarely whitebeam *Sorbus aria*. Ground flora was sparse and mainly comprised fern species such as locally frequent hart's-tongue *Phytillis scolopendrium*, male fern *Dryopteris filix-mas*, scaly male-fern *Dryopteris affinis* and broad buckler-fern *Dryopteris dilatata*. Scrub / understorey species were dense and encroaching around the field margins, and in areas where mature trees were absent, particularly in the east of the site. The most abundant species were field maple, blackthorn *Prunus spinosa* and hazel. A stand of the Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), variagated yellow archangel *Lamiastrum galeobdolon ssp. argentatum* was present beneath the tree canopy in the north-western corner of the site (TN1, **Plan 2222/02**).

3.19. Fruit trees (apple) *Malus domestica* and cherry *Prunus* sp. are abundant in F3, an area which may have historically been managed as an orchard.

3.20. Within F1 there are patches of dense scrub dominated by bramble with occasional dog rose *Rosa canina*, goat willow *Salix capraea*, and some coarse grasses and tall ruderals such as nettle *Urtica dioica*, great willowherb, hogweed *Heracleum sphondylium* and hedge bindweed *Calystegia sepium*. The patches of scrub include a mixture of native tree species including ash, elm *Ulmus procera* and sycamore.

Offsite Habitats

3.21. The tree canopy adjacent to the western site boundary on Tyning Tip is dominated by Scots pine *Pinus sylvestris*, pedunculate oak, and ash with an understorey of hawthorn (Photograph 6). Acid grassland also exists on the steep slopes, though this area was not surveyed in detail.

Photograph 6: The mixed woodland established on the banks of the colliery spoil heap of Tyning Tip.

3.22. To the north and east of the site are arable fields and to the south there is a combination of residential housing and associated gardens, rough grassland and woodland along the Wellow Brook corridor.

Botanical Records

3.23. BRERC holds records for the hawkweed *Hieracium maculatum* and wych elm *Ulmus glabra* (both local BAP species) for the same 1km grid square as the site. As the records for these species are only available to an accuracy of 1km more precise distances cannot be calculated. A record for the fine-leaved sandwort *Minuartia hybrid,* a priority and local BAP species, is also available 0.9km from the site.

3.24. None of these species were recorded on the site during the 2014 or 2016 surveys.

Protected and Priority Fauna

Amphibians

3.25. BRERC holds no records of great crested newts *Triturus cristatus* (GCN) within 1km of the site. Records common toad *Bufo bufo*, a Species of Principal Importance (SoPI), were returned.

3.26. No ponds were identified within the application area or the site boundary during either of the surveys. Review of OS mapping and aerial photography indicates that there are no ponds present within 250m of the site. The closest pond identified on the mapping is approximately 465m north east of the site and is separated from the site by a watercourse and is also part of a series of stocked recreational fishing ponds at White Wicket Farm. Given these ponds are stocked with fish the likelihood of GCN being present is considered extremely low.

3.27. In the response to the 2014 ecological assessment, Cam Valley Wildlife Group stated that there are ponds within 200m of the development site which support GCN (BRERC did not return records of these). It is not known where the ponds referred to are located, or the size of the reported GCN population. It is, however, known that there are optimal terrestrial habitats for GCN in the broad location stated, along the Wellow Brook corridor, with woodland and rough grassland between here and the application area. Furthermore, as there are no ponds north of the application area, strong migration pathways between GCN ponds to the south across the application area would not be expected. Overall, whilst the application area does itself support optimal terrestrial habitat for GCN, in light of the above it is considered unlikely it would support GCN. This conclusion is supported to a degree by the fact that no GCN or other amphibians were recorded during the reptile survey in 2014 (GCN can use the refugia used for reptile survey).

3.28. Common toad is more wide ranging from its breeding ponds, and whilst they too were not recorded during reptile surveys, the presence of this species could not be ruled out.

Badger

3.29. BRERC holds several records for badger with the closest record to the site being 50m to the east in 2007.

3.30. No evidence of badgers was recorded during the 2014 surveys. Comments from Cam Valley Wildlife Group on the 2014 ecological assessment suggest that an active badger sett is present on the site. During the 2016 survey, a number of mammal paths were recorded in the south east corner of the site though no dung pits, latrines, setts, snuffle holes or other clear evidence of badger were identified. That said, given the dense, impenetrable scrub in the south east corner of the site and the presence of mammal paths, presence of a sett could not be ruled out.

Bats

3.31. BRERC holds numerous records for bats with common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, serotine *Eptesicus serotinus*, whiskered *Myotis mystacinus*, noctule *Nyctalus noctula*, brown long-eared *Plecotus auritus* and both greater and lesser horseshoe bats all recorded within 4km of the site. Within the same 1km grid square as the site roost records of serotine, common pipistrelle, brown long-eared, lesser and greater horseshoe bats exist (the exact location of the greater horseshoe roost was not provided owing to the sensitive nature of this data).

3.32. No features suitable for roosting exist within the site as both buildings offer nothing more than negligible potential and none of the onsite trees are mature enough to offer anything more than

negligible potential. Houses nearby to the south are likely to support roosts. With the exception of the southwestern boundary that is adjacent to woodland at Tyning Tip, it is unlikely that there are important bat commuting routes across the site (most bat species prefer to commute from roosts to foraging grounds along linear features such as hedgerows and ditches).

3.33. Bats could forage over the site, though based on the habitats that exist currently, the site and adjacent habitats would not be expected to be of importance in maintaining local populations. Of the rare horseshoe species known locally, the predominantly rank grass and scrub communities are unlikely to be of importance to greater horseshoe bats, these species preferring to forage in deciduous woodland and over pasture (Ref. 10).

3.34. On this basis, as dark corridors will be retained within the development (refer to Section 5), it was agreed with the Bath and North East Somerset Ecologist Lucy Corner that detailed surveys of bats were not necessary (refer to **Appendix 7**).

Birds

3.35. BRERC returned several records of species of Birds of Conservation Concern (Ref. 11) within 1km of the site. Those of relevance to the site were limited to barn owl *Tyto alba* (also a local BAP species protected under Schedule 1 of the Wildlife and Countryside Act 1981) and dunnock *Prunella modularis* (a local BAP species and SoPI).

3.36. The two buildings on site are well sealed and considered unlikely to support breeding birds. The dense scrub would be expected to support breeding passerines. During the surveys, incidental records of singing linnet *Carduelis cannabina* (red status[3], SOPI and local BAP), whitethroat *Sylvia communis* (green list[4]) and dunnock (amber list[5]) were recorded singing and presumably nesting within scrub to the east. Common species such as magpie *Pica pica* were also recorded, with chiffchaff *Phylloscopus collybita* heard outside of the site.

3.37. There is anecdotal evidence that barn owl uses the site (Gary Kinman, Cam Valley Wildlife Group *pers comm.*). Whilst there are no suitable roosting opportunities for barn owl (they prefer traditional farm buildings and old mature trees) the rough grassland, which is likely to support abundant small mammals, could well be used by foraging barn owl as part of a wider home range (which can extend circa 1 - 6 km from their nest site sites depending on season; Ref. 12).

3.38. The pioneer habitats and scrub would be expected to also support foraging birds, with plentiful insects, seeds and fruit available. Birds of prey could forage at the site on small mammals and reptiles (see below), though given the abundance of similar habitats adjacent to it, they would not be dependent on it.

Brown Hare

3.39. No records for brown hare *Lepus europaeus* were provided by BRERC however anecdotal evidence indicated that they may be using the site (Gary Kinman, Cam Valley Wildlife Group *pers comm.*). Although this is a possibility, the arable fields and associated margins located immediately to the north and east of the site provide optimal habitat for hare compared to the dense scrub, tall ruderal and rough grassland within the Site. If hares are using the site it is not considered likely that they would be dependent upon it.

[3] Red listed bird species are those identified as having suffered major population declines over the last 25 years
[4] Species that occur regularly in the UK but do not qualify under any of the amber or red list criteria.
[5] Amber listed bird species are those identified as having suffered moderate population declines over the last 25 years

Invertebrates

3.40. BRERC holds several records for small heath *Coenonympha pamphilus,* dingy skipper *Erynnis tages* and grizzled skipper *Pyrgus malvae* butterflies (all SOPIs) within 1km of the site. Records are also available for cinnabar *Tyria jacobaeae* within the western site boundary but outside the application area.

3.41. There are also several records for the small garden bumble bee *Bombus (megabombus) hortorum* (Local BAP) just over 100m to the southeast of the site.

3.42. No notable butterfly species were recorded during the detailed entomological survey despite the presence of larval host plants for skippers, and a diverse fauna which included populations of brown argus *Aricia agestis* and marbled white *Melanargia galathea*.

3.43. However, several key invertebrates were recorded during the detailed survey:

- the red data book blue carpenter bee *Ceratina cyanea* was recorded on bramble;
- the nationally scarce seed beetle *Bruchus atomarius* was recorded on melilot;
- the nationally scarce weevil *Zacladus exiguous* was recorded on the ruderal vegetation; this is the first time this species has been recorded in Somerset;
- the picture-winged fly *Terellia longicauda* was recorded on woolly thistle; whilst this species currently has no formal conservation status it is considered likely to be upgraded to nationally scarce upon review.

3.44. These findings are not surprising given the nature of the habitats that exist. Most if not all of these species would be expected outside of the site in similar habitats.

3.45. To the north of the site, the areas of scrub habitat to the north contain several young elms *Ulmus procera* growing in the open. This species is the larval host plant of the SoPI butterfly species white-letter hairstreak *Satyrium w-album* and whilst this species was not recorded during the survey visit the habitat here appears to be highly suitable for this species.

3.46. Detailed information and a species list resulting from the entomological survey are provided in **Appendix 2**.

3.47. Whilst the habitats have matured, those host plants upon which the key species listed above were found continue to be present. It is therefore likely that a similar invertebrate assemblage to that identified during the 2014 persists.

Dormouse

3.48. BRERC does not hold any records of dormouse within 1km of the site.

3.49. The majority of habitat on the site in the form of tall ruderal vegetation and coarse grassland are considered to be sub-optimal for dormice. There is potential for dormouse to be using the treeline and hedgerow on the north and east site boundaries as well as the tree line in the north western quadrant of the site as they comprise dense scrub habitats and fruit bearing species including hazel and hawthorn as well as linking to the woodland to the north west of the site.

Reptiles

3.50. BRERC holds no recent records (within 10 years) for reptiles within 1km of the site.

3.51. The detailed survey in 2014 confirmed a 'good' population (as defined in Ref 13) of common reptiles in the pioneer and rank grassland, including slow worm *Anguis fragilis* (peak adult count 11) and common lizard *Zootoca vivipara* (peak adult count 7) within the application area. Reptile survey results are provided at **Appendix 3**. The rubble piles and concrete bases are likely to be highly suitable hibernacula for reptiles in winter, with bare ground and hardstanding providing excellent basking sites, albeit they are discrete in area.

3.52. Although the nature of the onsite habitats has altered slightly with grasses and tall ruderal becoming more dominant, it is anticipated that the reptile population recorded in 2014 will still be present therefore further surveys were not considered necessary in 2016.

3.53. No reptile surveys were conducted in F1 – F3 however based on the results from the 2014 survey in the application area, and the suitable, predominantly rough grassland, habitats identified in F1 – F3, these fields would be expected to support reptiles of the same population as recorded in the application area.

3.54. Given the nature of the application area and site habitats, there is also potential for adder *Vipera berus* to be present, though this species was not recorded.

Section 4: Evaluation

Designated Sites

4.1. SNCIs are selected based on criteria used by BANES that identify ecological features of importance at a district level. They are therefore of **district importance**.

Habitats and Flora

4.2. The site, including the application area, supports predominantly common and widespread habitats, with those within the application area including pioneer, more species-rich habitats typical of brownfield land.

4.3. The grassland is on the whole tall and coarse with patches of tall ruderal species. It is typical of unmanaged grassland in Southern England, and most closely resembles an MG1 *Arrhenatherum elatius* grassland according to the NVC classification (Ref 17). In its current condition, this common and widespread habitat is of **site importance**. However, as there are some discrete species-rich areas, it is likely the grassland could be increased in species-richness and hence importance through appropriate management, though presumably there is currently little incentive for the landowner to do so.

4.4. The tree lines and hedgerow are generally in good condition, and comprise a good mixture of mature trees and shrubs, and the canopy and shrub layers are relatively species-rich. However, they are not managed and blackthorn scrub in particular is encroaching into the grassland. These are of **local importance.**

4.5. Within the application area there is approximately 0.2ha of more species-rich grassland and pioneer habitats associated with the skeletal soils on the concrete bases of the former houses, and a frequent distribution exists of species such as oxeye daisy, common knapweed *Centaurea nigra* and common bird's-foot trefoil *Lotus corniculatua* which are associated with lowland meadow communities. Species more commonly associated with calcareous grassland communities such as pyramidal orchid, yellow oat-grass and downy oat-grass *Avenula pubescens* are also present. In isolation, these habitats are of **local to district importance**.

4.6. As is evident when comparing data from 2014 with 2016, and trends within the site, in the absence of management, as a result of natural succession, in the short to medium term the more important and species-rich habitats are likely to develop into less important communities dominated by coarse grasses, scrub and tall ruderal habitats. The tree line and hedgerow have also become more mature and blackthorn scrub is encroaching into the grassland.

Protected and Priority Species

Badger

4.7. No conclusive evidence of badgers being present on the site was identified during either survey although mammal paths were present and dense scrub could obscure a sett. The species would be expected to be present locally and may forage at the site, though the rank grass over much of the site is relatively sub-optimal foraging habitat.

4.8. Badger is not a species of conservation concern and their legal status is primarily to protect them from persecution. As such the badger population is of **negligible importance**, though if a sett is present and could be affected, mitigation would be necessary owing to their legal protection.

Bats

4.9. Whilst the records confirm the area is important for bats, the site itself is not likely to be of importance in maintaining their conservation status. Bats would be expected to forage over the site, with the woodland adjacent to the southwestern boundary being the most likely foraging area and commuting route. Overall, the site is not likely to be of greater than **local importance** for bats.

Breeding Birds

4.10. There are no roosting opportunities for barn owl on the site though they could forage. Whilst three birds of conservation concern were recorded, these are all common or abundant breeders in the Avon area (Ref. 13). The local area supports an abundance of similar scrub and rank vegetation and so the local populations would not be dependent on the site. The bird assemblage would not be expected to be of greater than **local importance**.

Brown Hare

4.11. Brown hare would only be expected to be using the site as part of a much wider foraging resource. As such the site is considered to be of no more than **site importance** to brown hare, if present.

Dormouse

4.12. Although the site does offer some potential habitats for dormouse there is optimal dormouse habitat present off site in the wider area in the form of woodland blocks to the west of south of the site. As such the site is considered to be of no more than **site importance** to dormouse, if present.

Invertebrates

4.13. On the basis of the habitats upon which they depend, three of the key invertebrates recorded within the application area would be expected to be present elsewhere in contiguous habitats and are unlikely to be isolated to this location.

4.14. Nests of the red data book species *Ceratina cyanea* are built in the hollow stems of woody herbaceous plants with bramble the most frequent in very warm sheltered locations.

4.15. The two nationally scarce beetle species *Zacladus exiguus* and *Bruchus atomarius* are both found in ruderal vegetation. *Zacladus exiguus* feeds on small-leaved cranesbills, such as herb Robert *Geranium robertianum* and dove's-foot cranesbill *Geranium molle*, with the larvae feeding in the rootstocks of these plants. *Bruchus atomarius* larvae develop seed pods of various vetches *Vicia* spp, though adults may be found on a wide range of plants.

4.16. The habitat with which these species, and others, are associated is characteristic of early successional stages (such as those associated with the former cottage bases) and without management these are likely to be lost over time. Continuous management or the creation of new habitats within the dispersal range would be required to retain this species assemblage.

4.17. The other notable species recorded on site is *Terellia longicauda* the larvae of which feed exclusively on flower heads of woolly thistle. Patches of this thistle species in the rank grassland areas are therefore important with maintenance and enhancement of this species desirable.

4.18. Given the nature of the habitats present and the species identified the invertebrate fauna supported by the site and the similar adjacent habitats is considered, overall, to be of **county importance**. In the absence of intervention those species found in the pioneer habitats would not be expected to persist.

Reptiles

4.19. Good sized populations of slow worm (peak count 11) and a good sized population of common lizard (peak count 7) were found within the application area during the 2014 surveys. The application area habitats would be expected to continue to support these species populations and F1 – F3 would also be expected to support reptiles.

4.20. All common reptiles are SoPIs, but they are very common and widespread in the county. All common species are however protected under UK legislation. The good assemblage of reptiles on this site is considered to be of **local importance**.

Evaluation using the BANES SNCI Selection Criteria

4.21. In BANES, criteria for SNCI selection (Appendix 1 of BANES Cabinet Report 13th June 2012) have been devised to identify those sites of biodiversity importance within the district (these are reproduced in **Appendix 8** of this report). SNCIs, or sites that meet the selection criteria, are offered some protection under BANES Local Plan 2007 saved policy NE9. The site has therefore been evaluated against these criteria to inform the proposed development strategy.

4.22. The vast majority of the site supports MG1 grassland, which would not be classed a UK Priority Habitat (formerly UK BAP Habitat). The small area (circa 0.2 ha) of more species-rich grassland that has established on the concrete bases of the former mine workers' cottages could be classed as 'Open Mosaic Habitats on Previously Developed Land', another UK Priority Habitat, however, guidance states that such habitats should occupy at least 0.25ha[6], and that within the site falls just short. Overall therefore the site would not be considered to score as 'strong' under criterion 4b or 10b (BAP habitats), though it would score as 'moderate' for locally rare habitats (the small area of species-rich grassland).

4.23. The presence of an invertebrate assemblage of county importance (including a Red Data Book species) and common reptile populations (UK priority species), means it would score 'strong' under criterion 4a (rare species) and criterion 10a (BAP species).

4.24. The site is likely to score 'strong' under criterion 13 (physical access; there is a public footpath through the site) and 14 (visual access; the site is on sloping ground facing nearby housing).

4.25. Only two 'strong' scores and three 'moderate' scores are required to meet the SNCI selection criteria. It is therefore concluded that as a whole the site would meet the SNCI selection criteria, and hence is of at least **district importance**, though clearly the ecological importance of the site is patchy, with the majority of it being of relatively low, **site to local importance**.

[6] http://jncc.defra.gov.uk/pdf/UKBAP_BAPHabitats-40-OMH-2010.pdf

Section 5: Potential Impacts and Requirement for Mitigation

Site Proposals

5.1. The proposals for the application area include residential development of up to 55 dwellings with associated access roads and landscaping. A community orchard will also be created within the site.

5.2. This would result in the loss of the existing habitats and opportunities for fauna within the footprint of the development.

Potential Impacts and Requirement for Mitigation

5.3. Both the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006 give the importance of conserving biodiversity a statutory basis, requiring government departments (which includes Local Planning Authorities) to have regard for biodiversity in carrying out their obligations (which includes determination of planning applications) and to take positive steps to further the conservation of listed species and habitats. These articles of legislation require BANES to take measures to protect species or habitats from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result, unless the need for, and benefits of, the development clearly outweigh the harm.

5.4. Where there are potential impacts in the construction and operational phases of the development to the ecological features described and evaluated in Section 4, these are described below. Where impacts would trigger legislation or planning policy (as set out in **Appendix 1**), the requirement for mitigation is noted.

Designated Sites

5.5. Given the nature and size of the proposals and lack of connectivity, no adverse effects on the fourteen SNCIs within 2km are anticipated therefore no specific mitigation is proposed.

Habitats

5.6. The habitats located within the application area (approximately 1.8ha) will be lost. These comprise grassland, tall ruderal and dense scrub of site importance, and species rich grassland of local to district importance.

5.7. As noted above, in combination with the important fauna that has been recorded, the site would meet the criteria for SNCI selection, albeit the interest is, with the exception of the reptile population, relatively localised. Saved policy LE.9 in the BANES Local Plan 2007 would therefore be triggered. This states that where sites of equivalent value to, in this case, SNCIs, are to be affected by development then this will only be permitted where:

"*i. material factors are sufficient to override the local biological geological / geomorphological and community/amenity value of the site; and*

ii. any harm to the nature conservation value of the site is minimised; and

iii. compensatory provision of at least equal nature conservation value is made." (See **Appendix 1**).

5.8. When considering impacts of development it is important to note the ongoing successional trends that in the absence of intervention will result in reduction of the site's current ecological importance in the short to medium term. As is evident over much of the site, competitive coarse grasses, ruderal and scrub species are likely to dominate.

5.9. The boundary treelines and hedgerow will be retained, as will the fruit trees within F3. They could however be affected during construction if not protected from accidental incursion by machinery, storage of materials or dust.

Protected and Priority Species

Amphibians

5.10. As noted, GCN are unlikely to be present and hence impacts to this species are not anticipated.

5.11. If present, common toad would be harmed during clearance of habitats in the development footprint though given the abundance of suitable habitat locally this is not likely to affect the conservation status of the local population.

Badger

5.12. No badger setts have been identified at the site however anecdotal information indicates that one could well be present within F3 within the dense vegetation in this field. If present, a badger sett and badgers themselves could be affected during the construction phase, if it is within or close to the construction area. Badgers could also become entrapped within excavations in the construction area if left open overnight. Once built, badgers could be disturbed by people using the development.

5.13. Such effects are likely to trigger the legislation protecting them.

5.14. Badger movements would be unaffected by development, with habitat corridors retained. Loss of some foraging habitat in the footprint of the development is not likely to affect badgers given the abundance of suitable forage in the locality.

Bats

5.15. No bat roosts, or features that could support roosts, would be impacted by the proposed development.

5.16. Horseshoe bats, that have been recorded locally, are particularly sensitive to ambient night-time light levels. Like many bats species, they also commute along linear habitat features. In order to avoid effects to bats, all linear boundary habitats are retained, and a dark linear corridor along the southwestern boundary adjacent to Tyning Tip linking to offsite suitable foraging habitat to the south is provided within the development's design.

5.17. Loss of 1.8ha of habitats within the footprint of the development is not likely to reduce significantly the local foraging resource and impacts to bats are unlikely.

Birds

5.18. There is a potential loss of foraging habitat for barn owl as a result of the loss of 1.8ha of rough grassland that is likely to support small mammals within the application area, though given the abundance of suitable habitat locally and the large home range of this species this is unlikely to be significant.

5.19. For the same reasons, whilst the proposed application area supports abundant seed and invertebrate sources for foraging birds, as well as nesting sites within scrub and trees, the three species of conservation concern recorded during the surveys are unlikely to be significantly affected.

5.20. In the absence of mitigation there is potential to trigger the legislation protecting nesting birds if the removal of vegetation needed to facilitate construction is not undertaken sensitively.

Dormouse

5.21. Habitats suitable for dormouse including treelines and the hedgerow will be retained within the development. Furthermore, no fragmentation of linear habitat features will occur as a result of the development. Consequently, no impacts on dormouse are anticipated and no specific mitigation is considered necessary.

Brown Hare

5.22. The loss of approximately 1.8ha of sub-optimal habitat for brown hare is not considered likely to affect the conservation status of this species and no specific mitigation is considered necessary.

Invertebrates

5.23. In the absence of mitigation, the loss of habitats supporting woolly thistle would impact upon the (likely to be confirmed as) nationally scarce *Terellia longicauda* that depends on this species. The larval host plants of other notable invertebrates recorded outside of the area proposed to be affected by development and hence these species are likely to persist even after habitat loss in the footprint of the development.

5.24. The concrete bases and hardstanding provide bare ground, which creates warm microclimates for thermophilic invertebrates. The early successional nectar-rich, stress tolerant annuals, providing an abundance of forage[7]. Whilst this habitat is relatively discrete, it is likely to promote invertebrate diversity at the site. In the absence of mitigation, the loss of these habitats would be expected to reduce the overall invertebrate diversity at the site.

Reptiles

5.25. The proposals would result in the loss of 1.8ha of optimal reptile habitat, which would reduce the carrying capacity of the site as a whole. Whilst the site is contiguous with suitable reptile habitat on the Tyning Tip, adjacent farmland habitats are not suitable and hence the loss of habitats in the footprint of the development could result in a reduction in the local population size of slow-worm and common lizard, which is of local importance.

[7] https://www.buglife.org.uk/sites/default/files/Identifying%20open%20mosaic%20habitat.pdf

5.26. In the absence of mitigation, the clearance of habitats in the footprint of the development has potential to harm the reptiles here, which would trigger the legislation protecting them.

Section 6: Mitigation and Enhancement

Overview of Mitigation and Enhancement Strategy

6.1. This assessment has confirmed that, with the exception of the reptile populations, the ecological features of greatest importance are relatively restricted in distribution. The most important botanical communities, and those either supporting, or having greatest potential to support key invertebrates are within the application area. These features are dependent on the relatively early successional processes and edaphic (soil) conditions that have developed on the hardstandings that once supported the mine workers' cottages.

6.2. As has been noted already above, comparison of the 2014 and 2016 surveys demonstrates that in the absence of management there is an ongoing trend towards dominance of rank vegetation at the expense of more species-rich habitats. Development therefore provides a mechanism to arrest this trend and to maintain or re-create the most important habitats both botanically and that support important fauna. It also presents an opportunity to restore the currently unmanaged and species-poor rank habitats within the site outside of the application area.

Habitats

6.3. In order to compensate for loss of habitats, anand Ecological Management Plan (EcMP; report ref. 2222_R04) has been devised and this is summarised below. Plan 2222/P03 illustrates the proposals:

- **Translocation of substrates supporting species-rich grassland and pioneer community (Open Mosaic Habitats on Previously Developed Land)**: The existing c. 0.2ha of substrates and soils, including seed bank will be translocated into a newly created 'butterfly garden' in F1. The existing vegetation in F1 will first be mown, cut back and scraped to bare ground to remove tall ruderal and dense scrub vegetation (habitat of site importance). The hardstanding and soils would be lifted by machine and spread evenly over the area, with some small mounds created under supervision of an ecological clerk of works (ECoW) to create reptile hibernacula and varied microclimates for flora and invertebrates. If possible, woolly thistle plants would be moved individually and/or seed collected for later sowing. Whilst the botanical community is likely to be modified as a result of translocation, this will maintain a similar community that, in the absence of intervention, would otherwise be reduced in importance. Subsequent management would be controlled by the EcMP in the form of cutting and weed removal to ensure the pioneer community is retained and does not succeed to less species-rich, rank habitats;

- **Increasing species-richness of existing rank grassland sward in F2**: this would be achieved by the introduction of a biannual hay cut to the coarse grassland of site importance in F2 (approximately 1.7ha) and the incorporation of yellow rattle *Rhinanthus minor* into the sward as its hemi-parasitic nature will help to weaken grasses and encourage greater grassland species diversity. Removal of variagated yellow archangel, a Schedule 9 species from the site, would also be undertaken. In the medium term (10 years or so) a sward of district importance should be achievable;

- **Creation of a woodland ecotone (transitional habitat between grassland and woodland)**: Relaxed management with no grassland cuts at the margins of F2 and adjacent to the woodland on the south west boundary at Tyning Tip, to create woodland ecotones

(approximately 0.4ha) that will be encourage butterflies, small mammals, reptiles and birds. Creation of scalloped margins to the ecotone will provide sheltered areas that will encourage butterflies and basking reptiles;

- **Mitigation for loss of scrub and tall ruderal habitats**: Provision of native hedgerow planting surrounding the development footprint (approximately 230m) would compensate for loss of scrub and tall ruderal vegetation. The community orchard would augment retained fruit trees in F3 and would create an important habitat;

- **Provision of increased cover and foraging resources for fauna**: Management of tree line and hedgerow habitat to maximise density, fruiting and flowering;

- **Access and Interpretation**: The existing desire lines within the site will be retained and formalised, though they will not be surfaced, to retain a more natural feel to the areas subject to the EcMP. Interpretation material in the homebuyers packs and on an interpretation board would state why this area is managed as it is. This will help promote ownership of these wildlife and amenity areas.

6.4. In order to avoid disturbance and/or degradation of retained habitats during the construction phase, protective fencing alongside trees and hedgerows would be installed prior to works. Usual best practice during construction would be applied to minimise effects of dust, run off and noise.

Protected and Priority Species

Amphibians and Reptiles

6.5. In order to avoid triggering the legislation protecting common reptiles and to maintain their conservation status on the site it will be necessary to translocate them from harm's way into a suitable receptor area. It would be logical to move them into the adjacent similar habitats within the site (approximately 4ha) outside the application area, though this could result in density dependent effects as it is assumed these habitats are already at carrying capacity.

6.6. Therefore, prior to translocation, the carrying capacity of the site outside the application area would be increased to accommodate the additional animals. This would involve creation of reptile hibernacula and management to create tussocky ecotone habitat at the margins of F2. F1 is currently tall ruderal and rank grassland; the proposed translocation of the concrete hardstandings will provide improved habitats for reptiles. Grass cuttings will be stockpiled in a designated area to provide egg-laying opportunities for grass snake *Natrix natrix* if present.

6.7. A detailed mitigation strategy would need to be implemented to include the following:

- Timing of the works within the active season for reptiles, namely March to October;

- Details of the receptor site within the retained site habitats and information on how carrying capacity will be increased;

- Details of exclusion methods, trapping and translocation methods, likely to involve a translocation of 30 days or more.

- Details of site clearance methodologies and habitat manipulation;

- Details of ecological supervision requirements; and

- Details of proposed habitat enhancements and future management for reptiles.

6.8. This mitigation strategy would ensure site works avoid killing and injuring reptiles present on the site, and maintain the existing conservation status of reptiles on site and therefore allow the proposed development to proceed lawfully, with respect to common reptiles.

6.9. These measures would also protect common toad, if present.

Badgers

6.10. In advance of the commencement of development a check for the presence of any setts within dense scrub within the site boundary would be undertaken. This would be facilitated by selective scrub clearance to allow full access to the application area and F1 within which clearance will be required.

6.11. If any setts are identified that will be destroyed or disturbed as a result of the development a badger mitigation strategy will be required prior to construction which is likely to require a development licence from Natural England. If the sett to be impacted is a main or an annex sett, this will include the provision of an artificial sett to ensure the existing badger population can be retained on site. There is ample scope to create such a sett within the site. The mitigation strategy will also include provision for the protection of badgers on site from human interference.

6.12. During construction it will be necessary to include a means of escape from excavations in the event badgers fall in at night.

Bats

6.13. As stated, dark corridors for bats will ensure bats can commute through the site. On the western site boundary in particular a sensitive lighting strategy will be designed to minimise light spill on to the dark corridor alongside Tyning Tip. There will be no additional lighting on site outside the application area.

6.14. Management of habitats via the EcMP will ensure foraging opportunities are maintained.

6.15. Some bat species are likely to roost in the new housing. The likelihood of this can will be increased by the inclusion of proprietary roost features in the buildings and in retained mature trees around the site. Further details are included within the EcMP (refer to **Appendix 8**).

Birds

6.16. The incorporation of scalloped margins in F2 through leaving field margins uncut as well as limiting cutting to no more than twice a year will ensure that the site continues to offer suitable habitat for barn owls to forage. The works to F1, and management of F2 and F3 will maintain seed and insect sources for other birds.

6.17. Provision of proprietary nest sites on buildings and within retained mature trees will improve opportunities for some species of conservation concern, which are also local BAP priorities. Further details are included within the EcMP (refer to **Appendix 8**)

6.18. All wild birds, their nests and eggs are afforded protection under the WCA 1981 (as amended). To avoid triggering the legislation removal of woody vegetation should be timed for outside the nesting bird season (March to August inclusive) or be preceded by a check for active nests by an ecologist. If a nest is found an appropriate buffer will need to be left undisturbed until the chicks have fledged, as confirmed by an ecologist.

Invertebrates

6.19. The translocation and subsequent management via the EcMP of the substrates from the application area to F1 will maintain opportunities for invertebrates, including notable species, in the long-term.

6.20. The management of grassland and creation of woodland ecotones in F2 will also improve opportunities and encourage a more diverse invertebrate assemblage than is currently present in this part of the site.

Mechanism for Control

6.21. The mitigation and enhancement described above could be controlled by appropriately worded planning conditions.

6.22. Commitment to a EcMP for site habitats would provide the planning authority with the required certainty that proposed habitat creation and enhancement to compensate for losses and provide replacement opportunities for fauna would be successful. Implementation of the EcMP would also be secured by planning condition.

Section 7: Conclusion

7.1. By adopting the mitigation and enhancement principles described the land outside of the proposed development could be enhanced to more than compensate for loss of those habitats in the footprint of the development. Such compensation would be achieved in the short-medium term once the habitats have established.

7.2. In the absence of intervention, some of the interest within the application area is likely to be reduced owing to natural successional processes. Development therefore provides a mechanism for ensuring the land controlled by the developer is managed to maximise its biodiversity importance in the long term.

7.3. In conclusion, with the strategy proposed the development should be in conformity with relevant planning policy and legislation (see **Appendix 1**). A mechanism for controlling the implementation of the strategy is described.

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Appendix 1: Legislation and Planning Policy Context

Appendix 1: Legislation and Planning Policy Context

Legislative Context

A1.1. Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2010 (as amended);
- The Countryside and Rights of Way (CRoW) Act 2000;
- The Hedgerows Regulations 1997;
- The Protection of Badgers Act 1992; and
- The Natural Environment and Rural Communities Act (NERC) 2006.

A1.2. The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance. Annexes II and IV of the Directive list all species considered of community interest. The legal framework to protect the species covered by the Habitats Directive has been enacted under UK law through The Conservation of Habitats and Species Regulations 2010 (as amended).

A1.3. In Britain, the WCA 1981 (as amended) is the primary legislation protecting habitats and species. SSSIs, representing the best examples of our natural heritage, are notified under the WCA 1981 (as amended) by reason of their flora, fauna, geology or other features. All breeding birds, their nests, eggs and young are protected under the Act, which makes it illegal to knowingly destroy or disturb the nest site during nesting season. Schedules 1, 5 and 8 afford protection to individual birds, other animals and plants.

A1.4. The CRoW Act 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' disturb a protected animal whilst it is using a place of rest or shelter or breeding/nest site.

Species and Habitats of Principal Importance and the UK Biodiversity Action Plan

A1.5. The UK Post-2010 Biodiversity Framework succeeded the UK BAP partnership in 2011 and covers the period 2011 to 2020. However, the lists of Priority Species and Habitats agreed under the UKBAP still form the basis of much biodiversity work in the UK. The current strategy for England is 'Biodiversity 2020: A Strategy for England's wildlife and ecosystem services' published under the UK Post-2010 UK Biodiversity Framework. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed for the UK BAP remain valuable resources for background information on priority species under the UK Post-2010 Biodiversity Framework.

A1.6. Priority Species and Habitats identified under the UKBAP are also referred to as Species and Habitats of Principal Importance for the conservation of biodiversity in England and Wales within

Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006. The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

National Planning Policy

National Planning Policy Framework (NPPF), March 2012

A1.7. The National Planning Policy Framework (NPPF) was published on 27th March 2012 and sets out the Government's planning policies for England and how these are expected to be applied. It replaces all the Planning Policy Statements and Guidance (PPSs and PPGs) (of relevance PPS9: Biodiversity and Geological Conservation).

A1.8. Paragraph 14 states that:

"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking."

A1.9. Under the 12 'Core Planning Principles' within the NPPF, those of relevance to nature conservation state that planning should:

"contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this Framework;

encourage the effective use of land by reusing land that has been previously developed (brownfield land), provided that it is not of high environmental value; and

promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage, or food production)"

A1.10. Section 11 of the NPPF (paragraphs 109 to 125) considers the conservation and enhancement of the natural environment.

A1.11. Paragraph 109 states that the planning system should contribute to and enhance the natural and local environment through inter alia recognising the wider benefits of ecosystem services; minimising impacts on biodiversity; and providing net gains in biodiversity (including provision of coherent ecological networks that are more resilient to current and future pressures).

A1.12. Paragraph 113 states that Local Plans should set criteria based policies against which proposals for development on or affecting wildlife sites should be judged and that distinctions should be made between the hierarchy of international, national and local sites and the weight of their importance.

A1.13. Paragraph 114 states that Local Authorities should plan positively for creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

A1.14. To minimise impacts on biodiversity and geodiversity, Paragraph 117 states that planning policies should:

"plan for biodiversity at a landscape-scale across local authority boundaries;

identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;

promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;

aim to prevent harm to geological conservation interests; and

where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas"

A1.15. When determining planning applications, Paragraph 118 states that local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

"if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;

development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;

opportunities to incorporate biodiversity in and around developments should be encouraged;

planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and

the following wildlife sites should be given the same protection as European sites:

potential Special Protection Areas and possible Special Areas of Conservation;

listed or proposed Ramsar sites; and

sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites."

A1.16. Paragraph 119 states that the presumption in favour of sustainable development in Paragraph 14 does not apply in relation development requiring appropriate assessment under the Birds or Habitats Directives.

A1.17. Paragraph 125 states that planning policies and decisions should limit the impact of light pollution from artificial light on nature conservation by encouraging good design.

Office of the Deputy Prime Minister (ODPM) Circular 06/2005: Biodiversity and Geological Conservation - Statutory Obligations and their Impact within the Planning System

A1.18. ODPM Circular 06/05 was prepared to accompany PPS9, however continues to be valid, and material in the consideration of planning applications since PPS9's replacement by the NPPF.

A1.19. ODPM Circular 06/05 provides guidance on applying legislation in relation to nature conservation and planning in England. Part I considers the legal protection and conservation of internationally designated sites (namely candidate Special Areas of Conservation (cSACs), SACs, potential Special Protection Areas (pSPAs), SPAs and Ramsar sites) and Part II considers the legal protection and conservation of nationally designated sites, namely Sites of Special Scientific Interest (SSSIs).

A1.20. Part III considers the protection of habitats and species outside of designated areas (particularly UK Biodiversity Action Plan species and habitats, which it states are capable of being a material consideration in the preparation of local development documents and the making of planning decisions.

A1.21. Part IV considers species protected by law and states that the presence of a protected species is a material consideration in the consideration of a development proposal that, if carried out, would be likely to result in harm to the species or its habitat and that it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted.

Local Planning Policy

Bath and North East Somerset Core Strategy (Part 1 of Local Plan – Adopted July 2014)

POLICY CP6 Environmental quality

4. Nature Conservation

A1.22. *The quality, extent and robustness of protected sites and valued habitats will be enhanced, and networks of valued habitat will be restored or created, by measures which:*

a: Improve the quality and/or increase the size of current sites and valued habitat.

b: Enhance connections between, or join up, sites and valued habitats.

c: Create new sites and valued habitats.

d: Reduce the pressures on wildlife by improving the wider environment.

New Development will protect and enhance international, national and local sites and existing networks of valued habitats; facilitate migration and dispersal though the natural and built environment; and seek to reduce fragmentation of existing habitats.

The Council will promote the management, conservation, enhancement or restoration of environmental assets. Sustainable opportunities for improved access to and enjoyment of these assets will be promoted where it does not compromise the integrity of the asset.

Bath and North-East Somerset Local Plan 2007 (superseded by Local Plan 2014, except for the following saved policies)

POLICY NE.4 Trees and Woodland Conservation

A1.23. *Development will only be permitted where:*

i. it does not have an adverse impact on trees and woodlands of wildlife, landscape, historic, amenity, productive or cultural value; and

ii. it includes the appropriate retention and new planting of trees and woodlands; and

iii. it does not have an adverse impact on a veteran tree.

In the case of an unavoidably adverse impact on trees and woodlands of wildlife, landscape, amenity, productive or cultural value, compensatory provision is made.

POLICY NE.8

A1.24. *Development which would adversely affect SSSIs, either directly or indirectly, will not be permitted unless;*

i. there are imperative reasons of national importance for the development; and

ii. any harm to the nature conservation value of the site is minimised; and

iii. compensatory provision of at least equal nature conservation value is made.

POLICY NE.9

A1.25. *Development which would adversely affect, either directly or indirectly the nature conservation value of, Sites of Nature Conservation Importance, Local Nature Reserves or Regionally Important Geological and Geomorphological Sites, as shown on the Proposals Map, or any other sites of equivalent nature conservation value, will not be permitted unless:*

i. material factors are sufficient to override the local biological geological / geomorphological and community/amenity value of the site; and

ii. any harm to the nature conservation value of the site is minimised; and

iii. compensatory provision of at least equal nature conservation value is made.

POLICY NE.10 Nationally protected species and habitats

A1.26. *Development that would adversely affect, directly or indirectly, species which are internationally or nationally protected or the habitat of such species will not be permitted.*

POLICY NE.11 Locally important species and habitats

A1.27. *Development which would adversely affect a species of importance to Bath & North East Somerset or the habitat of such species, directly or indirectly, will not be permitted unless:*

i. the importance of the development and its need for that particular location is sufficient to override the local value of the species; and

ii.any harm to the species and their habitats is minimised; and

iii. compensatory provision of at least equivalent nature conservation value is made.

POLICY NE.12 Natural features, retention, new provision and management

A1.28. *Development will only be permitted where it:*

i. retains features of the landscape such as trees, copses, woodlands, grasslands, batches, ponds, roadside verges, veteran trees, hedgerows, walls, orchards, and watercourses and their corridors if they are of amenity, wildlife, or landscape value, or if they contribute to a wider network of habitats;

ii. provides, where appropriate, for the creation of new features and habitats; and

iii. makes appropriate provision for the management of such features and habitats where they are of major importance for wild flora and fauna.

Where the loss of such features is unavoidable because the reasons for the development outweigh the need to retain the features:

a. any harm to the features is minimised, and

b. compensatory provision of at least equal value will be required.

Bath and North-East Somerset Local Plan 2014 - Part II, Placemaking Plan, District-wide strategy and policies (Draft version)

POLICY NE5: Ecological Networks

A1.29. *Development proposals will be expected to demonstrate what contribution will be made to ecological networks as shown on the Policies Map through habitat creation, protection, enhancement, restoration and/or management.*

POLICY NE6: Trees and Woodland Conservation

1. Development will only be permitted where:

a. it seeks to avoid any adverse impact on trees and woodlands of wildlife, landscape, historic, amenity, productive or cultural value; and

b. it includes the appropriate retention and new planting of trees and woodlands; and

2. If it is demonstrated that an adverse impact on trees is unavoidable to allow for appropriate development, compensatory provision will be made in accordance with guidance in the Planning Obligations SPD (or successor publication) on replacement tree planting.

3. Development proposals directly or indirectly affecting ancient woodland or ancient trees will not be permitted.

Appendix 2: Invertebrate Survey Methodology and Results

Appendix 2: Invertebrate Survey Methodology and Results

Methodology

A2.1. An initial invertebrate appraisal was carried out on 29th July 2014 by David Boyce, an experienced entomologist, to assess the potential importance of habitats for invertebrates, including any notable or priority species recorded locally.

A2.2. The sampling techniques employed for invertebrate surveying involved shaking out grass tussocks and beating tall herbaceous plants over a white plastic tray with some sweeping of vegetation with a heavy-duty entomological sweep net also being undertaken. The main invertebrate taxon sampled was beetles (Coleoptera), but a range of other groups with which the contractor is familiar, such as terrestrial molluscs and hoverflies (Syrphidae), were also determined to species level. In addition, readily identified groups such as the Orthoptera and butterflies were recorded.

Results

Key Invertebrates

A2.3. A total of four key invertebrates was recorded from this site. *C. ceratina* currently has Red Data Book status, but is probably sufficiently widely recorded to be down-graded to Nationally Scarce in the forthcoming status review. The two beetles *Bruchus atomarius* and *Zacladus exiguus* are Nationally Scarce species and the picture-winged fly *Terellia longicauda* has no status, but probably should be classified as Nationally Scarce. An explanation of the status categories given in emboldened print after the species name is included below. The species accounts in this section of the report include brief notes on the occurrence of these here, plus comments on their ecology and national/regional distribution. The approximate location of the areas referred to in the following accounts is shown on Map 2.1 as is the location of records of key species.

A2.4. The emboldened status categories given after the species names below are defined as follows:

- **RDB3** – Red Data Book Category 3 - Rare. Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk.
- **Nb.** – Nationally Scarce Category B. Taxa thought to occur in between 31 and 100 10 km squares of the National Grid.
- **NS?** - Nationally Scarce? Taxa which are estimated to occur within the range of 16 to 100 10km squares. This category replaces the 'Na' and 'Nb' sub-divisions into which nationally scarce species were often assigned in earlier reviews. The question mark indicates that nationally scarce status has not yet been formally assigned, but is believed to be merited.

Bruchus atomarius ***Nb.***

A2.5. *B. atomarius* is a relatively small seed beetle with sparse patches of white hairs on the otherwise black upper surface. Males have two well-separated spines on the inner face of the mid-tibia. It has quite a wide distribution across southern England and south-east Wales, but is absent from

much of the south-west peninsula. It is quite widely, but locally distributed across Somerset, only being absent from the acid, upland soils of Exmoor and the Quantocks. Larvae develop on the seed pods of various vetches *Vicia* spp, though adults may be found on a wide range of plants. A single male was beaten from melilot in survey unit 1a during the current study.

Zacladus exiguus ***Nb.***

A2.6. This is a small black weevil with very prominent setose tubercles on the elytra and the thorax sharply turned up along its front edge. *Z. exiguuus* is an extremely scarce species nationally, with just a thin scatter of sites across south-eastern and south-central England. It is found in a variety of open habitats and feeds on various small-leaved cranesbills, such as herb Robert *Geranium robertianum* and dove's-foot cranesbill *Geranium molle*, with the larvae feeding in the rootstocks of these plants. It has never been recorded before in Somerset, which makes the sweeping of a single adult from low, ruderal vegetation the most important record to come out of this survey.

Ceratina cyanea ***RDB3.***

A2.7. The combination of its blue metallic body colouration, wing venation and the white face of the male make this small bee easy to identify. It is relatively frequent across a narrow band in the extreme south-east of England encompassing parts of Sussex, Hampshire, Surrey and Kent. Elsewhere in Britain, it is a great rarity, though there is one small cluster of recent records based on the limestone of north Somerset. It is likely that the status of the species will be downgraded to 'NS' in the next Aculeate Hymenoptera conservation status review, but it is nevertheless a very scarce species of high conservation importance. Nests are built in the hollow dead stems of a range of relatively woody herbaceous plants, with bramble being the most frequent choice. Very warm, sheltered sites are required for nesting. Within a stem, a series of cells are constructed, each of which is provisioned with pollen from a range of flowers before an egg is laid and the cell is sealed. At Tyning Hill, a single male was found at rest on a bramble leaf an area of rank grassland and scrun in survey unit 1a (see Map 3.1 for the exact location of the record).

Terellia longicauda ***NS?***

A2.8. Within the large picture-winged fly genus *Terellia*, *T. longicauda* is quite easily recognised by dint of its unmarked wings and large size. The larvae of this species feed exclusively in the flowerheads of woolly thistle and the distribution of this insect broadly follows that of its host, being found on chalk and limestone in southern England. However, *T. longicauda* is more local within this range and its main stronghold is on a band of limestone country running across central southern England from Warwickshire southwards through Gloucestershire to north Somerset. Elsewhere it is extremely local and reaches its range limits to the north in south-west Yorkshire and to the west in Glamorgan. Although it currently has no formal conservation status, it is likely that it will be upgraded to 'NS' in the forthcoming Diptera review. At Tyning Hill, good numbers of adult males and females, including pairs in cop, were found on woolly thistle flowerheads in survey unit 1a.

Other Invertebrates

A2.9. In addition to the two key species, a number of other local species of grassland and ruderal habitats were also recorded in 2014. One example was the Brassica bug *Eurydema oleracea*, which was beaten from hedge mustard *Sisymbrium officinale* growing amongst tall ruderal vegetation in survey unit 1a. It is a local species of the south-east, which is very scarce in western England, with just a handful of Somerset records. Others include the weevils *Tychius meliloti* and *Sitona ambiguus*. Though no important species were noted this year, the butterfly fauna was quite diverse and included populations of brown argus and marbled white. The six spot burnet moth *Zygaena filipendulae* was recorded on site during the 2016 Phase I Habitat Survey.

Important invertebrate habitat features at Tyning Hill

Key Invertebrate Habitat Features

A2.10. The assessment of the site has identified four habitat features that are thought likely to be of special importance for invertebrates. Key species associated with each of the key habitat features are given in brackets after the heading.

Species-rich ruderal vegetation (Bruchus atomarius, Zacladus exiguus, Ceratina cyanea).

A2.11. The species-rich vegetation that occurs on the area of tracks and hard-standings in survey unit 1a is the most important invertebrate habitat feature present at Tyning Hill. Despite its small size, and the very limited time for survey, a number of interesting invertebrates were recorded here, including two key species, the seed beetle *Bruchus atomarius* and the weevil *Zacladus exiguus*. The latter is particularly noteworthy, as it is very scarce throughout its limited British range and this is the first occasion on which it has been recorded in Somerset. It is also probable that these flower-rich stands are of importance for another key species, *Ceratina cyanea*, which requires abundant sources of nectar and pollen for feeding and nest provision. It may be possible to create other patches of suitable habitat for this invertebrate assemblage elsewhere on the site by ground disturbance and soil stripping etc. However, this may only be effective in the short term given the requirement of many of the important invertebrates of this habitat feature for early-successional habitats that may quickly be lost from an area without further management intervention and/or the creation of a continuous supply of other habitats within dispersal range. The species-rich ruderal vegetation at Tyning Hill is thought to be of county importance for invertebrates.

Bramble growth in warm, sheltered micro-sites

A2.12. Areas of bramble growing in sunny, sheltered areas are likely to be the preferred nest sites for the rare metallic blue carpenter bee *Ceratina cyanea*. This species also requires nectar- and pollen-rich foraging habitat near at hand, so stands of brambles growing in survey unit 1a are likely to be of particular importance (see sub-section 3.1.1. above). Management of this habitat feature for invertebrates should aim to maintain bramble patches growing in warm, sheltered situations whilst preventing its encroachment into species-rich open ruderal habitats. The presence of *C. cyanea* here suggests that, this habitat feature should be rated as of local to county importance for invertebrates.

Woolly thistle growing in rank grassland

A2.13. Though the extensive stands of rank grassland that cover much of survey unit 1b as well as the eastern half of 1a are generally of rather low invertebrate interest (see sub-section 3.2.1 below), there are a few places where stands of woolly thistle are present, with this plant being the host of the very local picture-winged fly *Terellia longicauda*. Maintenance and enhancement of the small population of this plant is therefore desirable. Stands of woolly thistle are assessed as being of local importance for invertebrates.

Scrub

A2.14. No important butterflies were recorded at Tyning Hill during the July visit. However, the scrub in survey unit 1b includes a good number of young elms. These are open-grown and appear very suitable for breeding white-letter hairstreak *Satyrium w-album*, this being a SOPI. The site lies within the breeding range of the butterfly and though it was not recorded here during the July visit, there is thought to be a very good chance that it could prove to be a breeding site. It is a notoriously elusive insect that often occurs in low-density, dispersed populations and requires

intensive and specialised survey effort (such as winter egg searches) that was beyond the scope of the current exercise.

Other Invertebrate Habitat Features

Rank grassland.

A2.15. Aside from the key habitat features discussed above, most of the rest of the site is swathed in tall species-poor grassland. This is much the most extensive habitat feature and is thought to be of no more than local importance for invertebrates.

Conclusions

A2.16. Overall the invertebrate fauna of Tyning Hill is diverse and includes some important species these primarily being associated with the species-rich ruderal vegetation and bramble patches in survey unit 1a. Overall the invertebrate fauna here is assessed as being of county importance.

APPENDIX 2.1: CHECKLIST OF INVERTEBRATES RECORDED FROM TYNING HILL, RADSTOCK - 2014									
Group	**Status**	**Species scientific name**	**Species common name**	**Survey unit**	**Habitat**	**Dy**	**Mo**	**Year**	**Sampling method**
Mollusca		*Candidula intersecta*		1a	Ruderal grassland	29	7	2014	On bare ground
Mollusca		*Hygromia cinctella*		1a,1b	Rank and ruderal grassland	29	7	2014	Swept
Mollusca		*Monacha cantiana*		1a,1b	Rank and ruderal grassland	29	7	2014	Swept
Mollusca		*Cepaea hortensis*		1a,1b	Rank and ruderal grassland	29	7	2014	Swept
Odonata		*Aeshna mixta*	Migrant hawker	1b	Scrub edge	29	7	2014	In flight
Orthoptera		*Pholidoptera griseoaptera*	Dark bush-cricket	1a,1b	Bramble and scrub	29	7	2014	Singing males
Orthoptera		*Metrioptera roeselii*	Roesel's bush-cricket	1a, 1b	Rank grassland	29	7	2014	Singing males
Orthoptera		*Chorthippus brunneus*	Commonfield grasshopper	1a	Ruderal grassland	29	7	2014	Singing males
Orthoptera		*Chorthippus parallelus*	Meadow grasshopper	1a.1b	Rank and ruderal grassland	29	7	2014	Singing males
Hemiptera		*Coreus marginatus*	Dock bug	1a	Bramble scrub and rank grassland	29	7	2014	Resting on foliage

Hemiptera		*Dolycoris baccarum*	Sloe bug	1a	Rank and ruderal grassland	29	7	2014	Swept
Hemiptera		*Eurydema oleracea*	Brassica bug	1a	Ruderal grassland	29	7	2014	Beaten, Sisymbrium *officnale*
Hemiptera		*Palomena prasina*	Green shieldbug	1a	Bramble scrub and rank grassland	29	7	2014	Resting on foliage
Hemiptera		*Rhopalus subrufus*		1b	Rank grassland	29	7	2014	Swept
Coleoptera		*Bembidion quadrimaculatum*		1a	Ruderal grassland	29	7	2014	Running on ground
Coleoptera		*Rhagonycha fulva*		1a,1b	Rank and ruderal grassland	29	7	2014	On Daucus, *Pastinaca* flowers etc.
Coleoptera		*Olibrus aeneus*		1a	Ruderal grassland	29	7	2014	Swept
Coleoptera		*Coccinella septempunctata*	7-spot ladybird	1a,1b	Rank and ruderal grassland	29	7	2014	Swept
Coleoptera		*Oedemera lurida*		1a	Ruderal grassland	29	7	2014	On *Daucus*
Coleoptera	**Nb.**	*Bruchus atomarius*		1a	Ruderal grassland	29	7	2014	Beaten, *Melilotus*
Coleoptera		*Neocrepidodera ferruginea*		1a	Rank grassland	29	7	2014	Swept
Coleoptera		*Cassida rubiginosa*		1a	Rank grassland	29	7	2014	Swept

Coleoptera		*Stenopterapion tenue*		1a	Ruderal grassland	29	7	2014	Beaten, Medicago *lupulina*
Coleoptera		*Eutrichapion ervi*		1a	Ruderal grassland	29	7	2014	Beaten Lathyrus *pratensis*
Coleoptera		*Ischnopterapion loti*		1a	Rank grassland	29	7	2014	Beaten, Lotus *corniculatus*
Coleoptera		*Anthonomus rubi*		1a	Rank grassland	29	7	2014	Beaten, Achillea *millefolium*
Coleoptera		*Tychius meliloti*		1a	Ruderal grassland	29	7	2014	Beaten, *Melilotus*
Coleoptera		*Tychius picirostris*		1a	Ruderal grassland	29	7	2014	Swept
Coleoptera		*Ceutorhynchus obstrictus*		1a	Ruderal grassland	29	7	2014	Beaten, *Sisymbrium officnale*
Coleoptera		*Ceutorhynchus pallidactylus*		1a	Ruderal grassland	29	7	2014	Beaten, *Sisymbrium officnale*
Coleoptera		*Ceutorhynchus obstrictus*		1b	Rank grassland	29	7	2014	Beaten, Armoracia *rusticana*
Coleoptera		*Ceutorhynchus pallidactylus*		1b	Rank grassland	29	7	2014	Beaten, Armoracia *rusticana*
Coleoptera	**Nb.**	*Zacladus exiguus*		1a	Ruderal grassland	29	7	2014	Swept
Coleoptera		*Sitona ambiguus*		1a	Ruderal grassland	29	7	2014	Beaten *Vicia sepium*

Coleoptera		*Sitona lineatus*		1a	Ruderal grassland	29	7	2014	Beaten, *Medicago lupulina* and *Melilotus*
Coleoptera		*Sitona suturalis*		1a	Ruderal grassland	29	7	2014	Beaten *Lathyrus pratensis*
Lepidoptera		*Pleroptya ruralis*	Mother of pearl moth	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Thymelicus sylvestris*	Small skipper	1a,1b	Rank and ruderal grassland	29	7	2014	In flight and on flowers
Lepidoptera		*Colias croceus*	Clouded yellow	1a	Ruderal grassland	29	7	2014	In flight
Lepidoptera		*Pieris brassicae*	Large white	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Pieris napi*	Green-veined white	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Lycaena phlaeas*	Small copper	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Lysandra icarus*	Common blue	1a,1b	Rank and ruderal grassland	29	7	2014	In flight and on flowers
Lepidoptera		*Aricia agestis*	Brown argus	1a,1b	Rank and ruderal grassland	29	7	2014	In flight
Lepidoptera		*Aglais urticae*	Small tortoiseshell	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Inachis io*	Peacock	1a,1b	Rank and ruderal grassland	29	7	2014	In flight

Lepidoptera		*Polygonia c-album*	Comma	1b	Scrub edge	29	7	2014	In flight
Lepidoptera		*Pararge aegeria*	Speckled wood	1b	Scrub	29	7	2014	In flight
Lepidoptera		*Melanargia galathea*	Marbled white	1a	Ruderal grassland	29	7	2014	In flight
Lepidoptera		*Pyronia tithonus*	Gatekeeper	1a,1b	Rank and ruderal grassland	29	7	2014	In flight and on flowers
Lepidoptera		*Maniola jurtina*	Meadow brown	1a,1b	Rank and ruderal grassland	29	7	2014	In flight
Lepidoptera		*Aphantopus hyperantus*	Ringlet	1b	Rank grassland	29	7	2014	In flight
Lepidoptera		*Abraxas grossulariata*	Magpie moth	1b	Rank grassland	29	7	2014	Scrub
Lepidoptera		*Tyria jacobaeae*	Cinnabar moth	1a	Ruderal grassland	29	7	2014	In flight
Diptera		*Chrysotoxum festivum*		1a	Ruderal grassland	29	7	2014	Resting on foliage
Diptera		*Eristalis horticola*		1a	Ruderal grassland	29	7	2014	On flowers
Diptera		*Eristalis interruptus*		1a,1b	Rank and ruderal grassland	29	7	2014	In flight and on flowers
Diptera		*Eristalis pertinax*		1a	Ruderal grassland	29	7	2014	On flowers
Diptera		*Eristalis tenax*		1a,1b	Rank and ruderal grassland	29	7	2014	In flight and on flowers

Diptera		*Syritta pipiens*		1a	Ruderal grassland	29	7	2014	On flowers
Diptera		*Terellia longicauda*		1b	Rank grassland	29	7	2014	On *Cirsium eriophorum*
Diptera		*Graphomya maculata*		1a	Ruderal grassland	29	7	2014	On *Daucus*
Hymenoptera		*Formica fusca*		1a	Ruderal grassland	29	7	2014	Running ground
Hymenoptera		*Lasius flavus*	Yellow meadow ant	1a	Ruderal grassland	29	7	2014	Running ground
Hymenoptera		*Lasius niger*		1a	Ruderal grassland	29	7	2014	Running ground
Hymenoptera		*Myrmica rubra*		1a	Ruderal grassland	29	7	2014	Running ground
Hymenoptera	**RDB3.**	*Ceratina cyanea*		1a	Bramble scrub and rank grassland	29	7	2014	Resting on foliage
Hymenoptera		*Bombus terrestris*	Buff-tailed bumblebee	1a,1b	Rank and ruderal grassland	29	7	2014	On flowers
Hymenoptera		*Bombus hortorum*	Garden bumblebee	1a	Ruderal grassland	29	7	2014	On flowers
Hymenoptera		*Bombus lapidarius*	Red-tailed bumblebee	1a	Ruderal grassland	29	7	2014	On flowers
Hymenoptera		*Bombus hypnorum*	Tree bumblebee	1a	Ruderal grassland	29	7	2014	On flowers

Hymenoptera		*Bombus pascuorum*	Common carder bee	1a,1b	Rank and ruderal grassland	29	7	2014	On flowers
Hymenoptera		*Apis mellifera*	Honeybee	1a,1b	Rank and ruderal grassland	29	7	2014	On flowers
Araneae		*Araneus diadematus*		1a	Bramble scrub and rank grassland	29	7	2014	Webs on foliage
Araneae		*Pisaura mirabilis*		1b	Rank grassland	29	7	2014	Nursery web on grass stems

Appendix 3: Reptile Survey Methodology and Results

Appendix 3: Reptile Survey Methodology and Results

Methodology

A3.1. Reptile surveys of the site were conducted in areas of suitable habitat, rough grassland and scrub in accordance with Froglife Guidance (Ref. 10). Artificial reptile refugia, comprising heavy duty roofing felt material, measuring approximately 0.5m were positioned around the site at a density of approximately 20 per hectare. The refugia were spread across the site in areas of low tussocky vegetation and on the fringes of the areas of hard standing which characterise the site. Refugia were placed in areas where the vegetation structure was sufficiently open to enable access during future visits.

A3.2. A total of 42 mats were placed across the site on the 30 July 2014 and left for eight days to 'bed in' before seven surveys visits were undertaken between the 8 August and the 9 September 2014. The dates of the surveys visits are shown in table A3.1 along with weather conditions for each visit, which are considered optimal for conducted reptile surveys.

Visit	Time	Weather Conditions	Temperature (˚C)
08.08.14 V1	09:55	30% Cloud cover, Light air, dry	18.5
13.08.14 V2	10:40	75% Cloud cover, Gentle breeze, dry but rain earlier in the day	17.0
15.08.14 V3	09:30	50% Cloud cover, Gentle breeze, dry	15.2
27.08.14 V4	17:00	80% Cloud cover, Light breeze, dry but rain earlier in the day	16.8
29.08.14 V5	09:50	90% Cloud cover, Light breeze, dry but rain earlier in the day	16.0
03.09.14 V6	09:45	100% Cloud cover, Light breeze, dry	17.1
09.09.14 V7	11:24	10% Cloud cover, Light air, dry	17.4

Table A3.1: Meta data for reptile surveys conducted in 2014

Results

Visit	Date	Start time	Species	Common name	Adult male	Adult female	Adult sex unknown	Juvenile
V1	08.08.14	09:55	Anguis fragilis	Slow worm	2	9	-	6
			Zootoca vivipara	Common Lizard	-	-	1	-
V2	13.08.14	10:40	Anguis fragilis	Slow worm	2	5	-	6
			Zootoca vivipara	Common Lizard	1	2	4	7
V3	15.08.14	09:30	Anguis fragilis	Slow worm	2	2	-	2
			Zootoca vivipara	Common Lizard	-	-	-	1
V4	27.08.14	17:00	Anguis fragilis	Slow worm	-	4	-	1
			Zootoca vivipara	Common Lizard	1	-	-	6
V5	29.08.14	09:50	Anguis fragilis	Slow worm	1	2	-	3
			Zootoca vivipara	Common Lizard	-	-	-	5
V6	03.09.14	09:45	Anguis fragilis	Slow worm	-	1	-	-
			Zootoca vivipara	Common Lizard	-	2	-	-
V7	09.09.14	11:24	Anguis fragilis	Slow worm	1	1	-	2
			Zootoca vivipara	Common Lizard	-	-	-	-

Table A3.2: Results for reptile surveys conducted in summer 2014

Appendix 4: Badger Survey Methodology and Results

Appendix 4: Badger Survey Methodology and Results

Methodology

A4.1. A badger survey was conducted in combination with both the Phase I habitat surveys on 26th June 2014 and 27th June 2016. All field boundaries and habitats likely to be of value were searched for evidence of badgers and signs badger activity (such as setts, latrines, badger paths, foraging sign and tree scratching) were mapped. A note of the general habitat suitability for badgers was also made.

A4.2. Where setts were found they were classified in line with published methods (Refs 14 and 15) as being either active or disused (see Table 2). Setts classed as active showed obvious signs of current use by badgers such as bedding, footprints, guard hairs or fresh spoil. Setts classed as disused showed no signs of recent use by badger. The latter in reality, could be easily opened up and re-used, however, given badgers can rapidly excavate new setts, disused setts are not considered to be a constraint to development.

A4.3. Well used or partially used setts were also classed as either main, annexe, subsidiary or outlier setts (see Table 3). A main sett is the most important within a social badger group's territory. It is used throughout the year and is the main breeding sett. It can comprise of as few as two holes.

A4.4. An annexe sett normally lies close to the main sett. It is connected to it by obvious paths. This may be used by immature or sub-dominant individuals or as alternative breeding dens when more than one female is breeding at the same time. Subsidiary setts are not connected to the main sett by paths but may be used in a similar way to annexe setts. Outlier setts are simple structures with just one or two entrances and normally lie in the group's territory at some distance from the main sett. These are generally used as temporary refuges, often by just one or two badgers. However, the distinction between these categories is often blurred.

Classification of Use	Description
Well-Used	Clear of debris and vegetation, obviously in regular use
Partially-Used	Not in regular use, with leaves or twigs in entrance or moss and other plants growing around the entrance
Disused	Partially or completely blocked entrances, unable to be used without a considerable amount of clearance

Table A4.1: Indicators of Use of Badger Setts

Main Setts
These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. There will be well-used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continuous use, it is possible to find a main sett that has become disused due to excessive digging or some other reason; it should be recorded as a disused main sett. The average size of an active main sett is twelve holes (including all categories of use).

Annexe Setts They are often close to a main sett, usually less than 150m away, and are usually connected to the main sett by one or more obvious well-worn paths. They usually have several holes, but may not be in use all the time even if the main sett is very active. The average size is five holes (including all categories of use).
Subsidiary Setts These often only have a few holes; four (including all categories of use) being the average number. They are usually at least 50m from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active.
Outlying Setts These usually have only one or two holes, often have little spoil outside the hole, have no obvious path connecting with another sett and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not the actual entrance hole), which is usually at least 250mm in diameter, and is rounded or a flattened oval shape. Fox and rabbit tunnels are smaller and often taller than broad.

Table A4.2: Classification of Badger Setts

Results

A4.5. No evidence of badgers was identified during either the 2014 or 2016 surveys.

Appendix 5: Botany Survey Methodology and Results

Appendix 5: Botany Survey Methodology and Results

Methodology

A5.1. A full National Vegetation Classification (NVC) (Ref 16) was not considered appropriate due to the coarse nature of the grassland on the site, and it therefore being unlikely to show any strong affinities to any semi-natural grassland communities other than an MG1 false oat-grass *Arrhenatherum elatius* community. A detailed walkover survey of the site was therefore conducted by Lindsay Carrington Ecological Services on the 30th June 2016, recording all species encountered and assessing their abundance using the DAFOR scale as follows:

- D Dominant;
- A Abundant;
- F Frequent;
- O Occasional;
- R Rare;
- L Local (used as a prefix to any of the above).

A5.2. The locations of any species or areas of particular interest, and any invasive species were also noted and marked on the plan provided (Figure 1).

Results

A5.3. Tables A5.1 and A5.2 show the full lists of species recorded onsite and within the immediate area in the blue line boundary.

Common name	Latin name	Abundance	Status
Grasses, ferns and mosses			
Meadow foxtail	*Alopecurus pratensis*	F	Common & widespread
False oat-grass	*Arrhenatherum elatius*	D	Common & widespread
Downy oat-grass	*Avenula pubescens*	LF	Locally common in dry calcareous grasslands and meadows
Hairy sedge	*Carex hirta*	R	Common & widespread
Cock's-foot	*Dactylis glomerata*	LA / F	Common & widespread
Bearded couch	*Elytrigia caninus*	LA	Locally common. Can dominate grasslands
Red fescue	*Festuca rubra*	O / LA	Common & widespread
Yorkshire fog	*Holcus lanatus*	A	Common & widespread
Perennial rye-grass	*Lolium perenne*	LA	Common & widespread
Annual meadow-grass	*Poa annua*	O	Common & widespread
Rough meadow-grass	*Poa trivialis*	LA	Common & widespread

Common name	Latin name	Abundance	Status
Tall fescue	*Schedonorus arundinaceus*	LF	Locally common in rough grassland both inland & on cliffs near the sea
Yellow oat-grass	*Trisetum flavenscens*	LF	Common in meadows and calcareous grasslands
Herbaceous plants			
Yarrow	*Achillea millefolium*	O	Common & widespread
Pyramidal orchid	*Anacamptis pyramidalis*	LF	Locally common in Southern England, particularly on calcareous grasslands and free-draining dunes
Wild angelica	*Angelica sylvestris*	LF	Common on damp habitats
Cow parsely	*Anthriscus sylvestris*	F	Common & widespread
Lesser burdock	*Arctium minus*	O	Common & widespread
Horse-radish	*Armoracia rusticana*	R	Introduced. Locally common on wastelands and roadsides
Mugwort	*Artemesia vulgaris*	LA	Common & widespread
Daisy	*Bellis perennis*	LF	Common & widespread
Common knapweed	*Centaurea nigra*	O	Common & widespread
Common mouse-ear	*Cerastium fontanum*	O	Common & widespread
Woolly thistle	*Cirsium eriophorum*	LO	Locally common in Southern England
Spear thistle	*Cirsium vulgare*	LF	Common & widespread
Field bindweed	*Convulvulus arvensis*	LA / F	Common & widespread
Wild carrot	*Daucus carota*	O	Common & widespread
Teasel	*Dipsacus fullonum*	F	Common & widespread
Greater willowherb	*Epilobium hirsutum*	LA	Common & widespread
Field horsetail	*Equisetum arvensis*	LF	Common & widespread
Hemp-agrimony	*Eupatorium cannabinum*	LA	Common in southern England, particularly in wet habitats
Cleavers	*Galium aperine*	LA	Common & widespread
Hedgerow crane's-bill	*Geranium pyrenaicum*	O	Common in SE England
Herb-Robert	*Geranium robertianum*	LF	Common & widespread
Ground-ivy	*Glechoma hederacea*	O	Common & widespread
Hogweed	*Heracleum sphondylium*	F	Common & widespread
Imperforate St. John's-wort	*Hypericum maculatum*	R	Common on heavier soils
Perforate St. John's-wort	*Hypericum perforatum*	LO	Common & widespread
Cat's-ear	*Hypochaeris radicata*	O	Common & widespread
Meadow vetchling	*Lathyrus pratensis*	LA	Common in grasslands and scrub
Oxeye daisy	*Leucanthemum vulgare*	LA	Common, particularly on fertile soils

Common name	Latin name	Abundance	Status
Common bird's-foot trefoil	*Lotus corniculatus*	LA	Common & widespread
Black medick	*Medicago lupulina*	LA	Common & widespread
Ribbed melilot	*Melilotus officinalis*	LA	Widely introduced. Frequent in Southern England.
Garden mint	*Metha sp.*	LF	Introduction.
Wild parsnip	*Pastinaca sativa*	LF	Locally frequent, particularly on dry calcareous soils
Fox-and-cubs	*Pilosella aurantiaca*	LO	Introduced species. Locally common.
Mouse-ear hawkweed	*Pillosella officinarum*	LO	Common in grassland habitats
Ribwort plantain	*Plantago lanceolata*	F	Common & widespread
Greater plantain	*Plantago major*	LA	Common & widespread
Creeping cinquefoil	*Potentilla reptans*	LA	Common & widespread
Self-heal	*Prunella vulgaris*	LA	Common & widespread
Blackthorn	*Prunus spinosa*	LD / F	Common & widespread
Creeping buttercup	*Ranunculus repens*	F	Common & widespread
Common sorrel	*Rumex acetosa*	O	Common & widespread
Bramble	*Rubus fruticosus*	A / LD	Common & widespread
Clustered dock	*Rumex conglomeratus*	LF	Common & widespread
Curled dock	*Rumex crispus*	LF	Common & widespread
Broad-leaved dock	*Rumex obtusifolius*	O	Common & widespread
Dog-rose	*Rosa canina*	O	Common & widespread
Red campion	*Silene dioica*	LF	Common & widespread
Goldenrod	*Solidago virgaurea*	LD	Common in dry habitats
Hedge woundwort	*Stachys sylvatica*	LF	Common & widespread
Dandelion	*Taraxacum* agg.	O	Common & widespread
Hop trefoil	*Trifolium campestre*	LA	Common on dry grasslands, particularly calcareous soils
Red clover	*Trifolium pratense*	F	Common & widespread
White clover	*Trifolium repens*	LA	Common & widespread
Goat's-beard	*Tragopogon pratensis*	LF	Occasional on grasslands and roadsides
Colt's-foot	*Tussilago farfara*	LF	Common on disturbed habitats
Common nettle	*Urtica dioica*	F	Common & widespread
Common vetch	*Vicia sativa*	F	Common & widespread

Table A5.1: Species encountered in the grassland community

Common name	Latin name	Abundance	Status
Canopy			
Field maple	*Acer campestre*	A	Common & widespread
Hazel	*Corylus avellana*	A	Common & widespread
Beech	*Fagus sylvatica*	LF	Common & widespread
Ash	*Fraxinus excelsior*	F	Common & widespread
Oak	*Quercus robur*	F	Common & widespread
Understorey / woodland edges			
Apple	*Malus domestica*	LF	Introduction / garden escape
Blackthorn	*Prunus spinosa*	A	Common & widespread
Goat willow	*Salix caprea*	LO	Common in damp

Common name	Latin name	Abundance	Status
			habitats
Grey willow	*Salix cinerea*	F	Common in damp habitats
Elder	*Sambucus nigra*	F	Common & widespread
English elm	*Ulmus procera*	R	Frequent in lowlands of Britain
Wayfaring tree	*Viburnum lantana*	O	Common in central and southern England, on calcareous soils
Ground flora			
Cow parsley	*Anthriscus sylvestris*	LF	Common & widespread
Enchanter's nightshade	*Circaea lutetiana*	LA / F	Common & widespread
Scaly male-fern	*Dryopteris affinis*	LF	Locally frequent in Southern England on damp soils
Broad bucker-fern	*Dryopteris dilatata*	LF	Common & widespread
Male fern	*Dryopteris filix-mas*	LF	Common & widespread
Ivy	*Hedera helix*	F	Common & widespread
Hogweed	*Heracleum sphondylium*	F	Common & widespread
Common feather-moss	*Kindbergia praelonga*	LA	Common & widespread
Variagated yellow archangel	*Lamiastrum galeobdolon ssp. argentatum*	LD	Invasive. Schedule 9 WCA species.
Hart-s tongue	*Phytillis scolopendrium*	LO	Common, particularly in Southern England
Bramble	*Rubus fruticosus*	O / LD	Common & widespread
Wood dock	*Rumex sanguineus*	LF	Common in woodlands
Common figwort	*Scrophularia nodosa*	LO	Common & widespread

Table A5.2: Species encountered in the woodland and scrub community

Appendix 6: Plan showing locations of SNCIs within 2km

Enq 2538

Tyning's Hill

SNCIs

2km buffer

Compiled by BRERC on 16/06/2014

BRERC
Third Floor
Bristol Central Library
College Green
Bristol, BS15TL

Bristol Regional Environmental Records Centre
Sorbus bristolensis

Appendix 7: Email to Lucy Corner at BANES (12 June 2015) documenting agreed further ecology work required

——— Forwarded message ———
From: **Julian Arthur** <j.arthur@tylergrange.co.uk>
Date: 12 June 2015 at 11:41
Subject: Tynings Hill, Radstock
To: Lucy Corner <lucy_corner@bathnes.gov.uk>

Hi Lucy
Many thanks for your time just now to discuss the ecology issues at the above site. As you know, I am keen to resolve your concerns in respect of ecology, and to ensure a future application would be in conformity with policy protecting ecological resources.

To summarise the points discussed:

- based on the information in the Tyler Grange ecology report submitted with the now withdrawn planning application, you feel that more work is needed to demonstrate any new application would be in conformity with policy;
- you feel the baseline data in the report was sufficient for an application. I do intend to undertake an update phase I of the site, and to provide more data in respect of the land the client controls adjacent to the site;
- provided we assume bats are active locally and we ensure a development retains protected, dark flight-lines then bat surveys should not be needed;
- the ecology strategy should seek to quantify as much as possible the likely impacts and compensatory habitat provision. I mentioned the adjacent land the client owns, and which could be enhanced to compensate for habitat losses by means of a commitment to a management plan. You felt this might be acceptable if it can be demonstrated that the impacts would indeed be mitigated (or more than mitigated). A management plan should be submitted with a new application to provided certainty.
- the brownfield habitats were discussed. It is difficult to retain these within development, but this would be explored. So too would the potential to recreate them in the surrounding land owned by the client. Failing that, you would consider other offsite options (for instance, enhancement of other nearby brownfield local wildlife sites), provided there was a management commitment controlled through planning
- you would be happy to be involved in pre planning discussions to discuss options and our approach. This should be arranged through the BANES planning department.

I neglected to ask whether it would be possible to have a copy of the BRERC survey of the site that you mnetioned last time we spoke. Could you confirm?

Kind regards

Julian Arthur
Partner

On behalf of

m. 07540 725 260
t. 01453 765 500
e. j.arthur@tylergrange.co.uk
www.tylergrange.co.uk

Appendix 8: Criteria for selection of SNCIs (reproduced from Appendix 1 of BANES Cabinet Report 13th June 2012)

APPENDIX 1 of Cabinet Report (13th June 2012)

Procedure for designation of Local Sites in Bath & North East Somerset

LOCAL SITES PROCEDURE (ECOLOGY AND GEOLOGY)

Procedure and Criteria for the Designation and Review of Local Sites in the West of England (former County of Avon)

Version 2012.1

INTRODUCTION AND POLICY BACKGROUND

A "Local Sites System" has been used in the West of England (formerly the county of Avon) since the 1980s. Its purpose is to highlight and help to conserve and enhance land with significant wildlife and geological value. "Local Sites" is the generic term for Sites of Nature Conservation Interest (SNCIs, or Wildlife Sites in North Somerset) and Regionally Important Geological Sites (RIGS). Their conservation is key to safeguarding the biodiversity of Bath & North-East Somerset, Bristol, North Somerset and South Gloucestershire Districts. There are policies in the Local Plans and Local Development Frameworks of the four unitary authorities, and in the Adopted Joint Replacement Structure Plan, for the protection of Local Sites.

This procedure sets out how Local Sites are identified, assessed and designated. It has been agreed between the nature conservation staff of the four unitary authorities in consultation with the voluntary and statutory nature and geological conservation sectors. Together these representatives form the "Local Sites Partnership" (LSP). The procedure is in line with national guidance "Local Sites Guidance on their Identification, Selection and Management" (DEFRA 2006).

The criteria for determining Local Sites including SNCIs and RIGS are listed in Appendices 1 and 4 respectively. These may be modified from time to time by agreement of the Local Sites Partnership; for example when addition of a new criterion referring to the presence of key species and habitats as highlighted in the UK, regional or local biodiversity action plans, was proposed.

The application of these criteria are guided by "Natural Assets - Non-statutory sites of importance for nature conservation (Collis and Tyldesley 1993) and the document, "Natural Assets in Avon - A policy guide and criteria for the selection of non-statutory sites of nature conservation importance", which was produced by Avon County Council in 1995. This contains guidance as to the threshold levels to be applied to the criteria.

It is essential that all criteria are applied rigorously and that sites are found to be of substantive nature conservation interest, in line with national guidance, before they are designated. All land that meets Local Sites criteria should be determined as such. Any sites that fail to meet the criteria should not be designated. The criteria should be applied as objectively as possible using scientific data and the professional judgement of suitably qualified or experienced personnel. For this reason, the Unitary Authority Ecologists, in liaison with the Bristol Regional Environmental Records Centre (BRERC) where appropriate, should usually carry out the initial assessment of a site against Local Site criteria using objective survey information or other relevant data. Recommendations on

RIGS sites are made by the Avon RIGS Group using their specialist geological expertise to assess sites against the RIGS criteria. Recommendations are then brought to the Local Sites Partnership by the Local Authority Ecologist, BRERC, or an Avon RIGS Group representative member. The Local Sites Partnership, whose membership includes professionals within the field from a range of organisations, and other specialists or interested parties where appropriate, should make the final assessment on whether a site meets the criteria.

Local Authorities will use best endeavours to consult with owners of land before designating their land as a Local Site or making modifications to an existing Local Site; and will notify owners of their final decision. Local Authorities will also liaise generally with owners of Local Sites about the status of their land. Apart from providing an opportunity for land owners to participate in the process and make their views known, liaison with owners is beneficial in highlighting the value of the site to those that look after it and in promoting appropriate management, and sources of support for management. It also provides scope for any issues to be addressed. Where the identity of the site owners cannot be ascertained, opportunities for representations may instead be provided through Local Development Framework and Supplementary Planning Document public consultation processes, and through the Planning Application process where applicable.

The Local Sites Partnership is the determining body for decisions on new Local Sites, and amendments or deletions to Local Sites, in accordance with the agreed criteria and procedure. All decisions by the Partnership should be subject to Local Sites policies in the relevant Local Development Framework and other relevant documents.

National and Local Policy and Guidance

- The National Planning Policy Framework (March 2012) requires Local Authorities to set policies against which proposals for development affecting protected wildlife or geodiversity sites (known collectively as “Local Sites”) will be judged, giving appropriate weight to locally designated sites within the hierarchy of international, national and local designations.

- The National Planning Policy Framework includes Locally Designated Sites (Local Sites) among the components of local ecological networks that should be identified and mapped. The aim of preventing harm to geological interests is also stated.

- Local Sites identified through this procedure come under the protection of the relevant policies of the relevant Local Plan.

- The Local Sites procedure and the criteria are in accord with government guidance as set out in *“Local Sites. Guidance on their Identification, Selection and Management” (DEFRA, 2006).*

PROCEDURE FOR THE DESIGNATION AND AMENDMENT OF LOCAL SITES

The standard procedure for the designation of Local Sites is as follows.

1. IDENTIFICATION

New ecological survey of an existing or potential Local Site, or other relevant information, becomes available to the Local Authority ecologist (or RIGS group, for potential RIGS sites), highlighting the potential need to amend or delete an existing Local Site, or to define a new Local Site.
This information may come from the Bristol Regional Environmental Records Centre (BRERC); the Avon Wildlife Trust; Avon Regionally Important Geological Sites (RIGS) Group; Local Authority surveys or site visits; consultants' reports and ecological surveys for planning applications; Natural England; members of the public or other sources and wherever possible should then be provided to BRERC.

2. DATA EVALUATION

Unitary Authority Nature Conservation Officer/Ecologist ensures, in liaison with BRERC, the RIGS Group, and other specialists where necessary, that there is adequate data on which to evaluate the site**.** If there is insufficient data further data may need to be obtained, or new surveys carried out, before evaluation of the site against Local Sites criteria is carried out.

3. TESTING AGAINST CRITERIA

Unitary Authority Nature Conservation Officer/Ecologist evaluates the site data against the SNCI / Wildlife Site designation criteria and makes a recommendation eg for a proposed new site, deletion of a site, or amendment to an existing site. RIGS Group evaluates RIGS site data against RIGS criteria and make their recommendation, in consultation with the Unitary Authority Nature Conservation Officer/Ecologist.

4. DETERMINATION BY LOCAL SITES PARTNERSHIP

All proposed new Local Sites, or significant changes or extensions to a Local Site boundary are brought to the Partnership. Minor and uncontentious boundary changes such as mapping errors and removal of anomalies can be made by the Unitary Authority Ecologist without requiring Partnership approval.
Unitary Authority Ecologists make recommendations to the Partnership for new Local Sites or extensions to existing Local Sites. This can be in writing or by meetings. The Local Sites Partnership will meet at least once a year. A Partnership member (to be agreed at each meeting) will take notes of the decisions made at the meeting. The role of the Partnership is to

a) determine designations and changes to existing or proposed Local Sites, providing as objective an assessment process as possible, and to add rigour to the application of criteria using professional judgement from a range of personnel with

relevant expertise.

b) The Partnership also have a role in agreeing the Local Sites criteria, and any changes to the criteria.

All sites that meet Local Sites criteria are determined as Local Sites. Any sites failing to meet the criteria will not be designated as Local Sites.

Membership of the Partnership includes:

- Unitary Authority Ecologists
- Bristol Regional Environmental Records Centre
- Natural England
- Avon Wildlife Trust
- The Environment Agency
- Forestry Commission
- RIGS Group representative (where appropriate)
- Other interested groups, relevant to that site or particular ecological interest, where appropriate

If the Partnership is in agreement with the proposed Local Sites change, the details of that change should be taken as formal designation.

5. COLLATING RESULTS OF PARTNERSHIP

Notes of partnership meetings and all decisions taken by the partnership are circulated. For decisions made by the Partnership in writing or by email, details and written confirmations of the decision will be collated by the Ecologist who initially requested the decision, and provided to BRERC.

A copy of the details agreed at meetings, or in writing or by email by the Partnership for each site (as detailed in Appendix 5), including accurate site boundary and completed criteria sheet (Appendix 3), are provided by each Unitary Authority Ecologist to BRERC immediately after the meeting / decision.

The minutes of the meeting are circulated with an opportunity to comment on the accuracy of decisions.

BRERC then create a “changes” GIS data layer for each Authority, containing new sites, amended sites, and de-designated sites . Each ecologist may then use this information to report the changes to the relevant Council Members, Committees or departments, and to notify changes to all consultees. Notify site owners, if possible.

6. NOTIFICATION AND AMENDMENT OF RECORDS

BRERC will make any necessary changes to the definitive GIS data layers held at BRERC (also updating the SNCI / Wildlife Site & RIGS register database, and species database where appropriate). A copy of the new definitive layer will be given to the ecologists. This will take place once a year (or more frequently if agreed).

Ecologists are to ensure that records held at the Unitary Authorities are up-dated. All data users within the Authority should be in receipt of and using the correct and most recent up-to-date version of the SNCI data, as supplied by BRERC.

APPENDIX 1

CRITERIA FOR THE DESIGNATION OF SITES OF NATURE CONSERVATION INTEREST/ WILDLIFE SITES

These criteria are based on "Natural Assets - Non-statutory sites of importance for nature conservation (Collis and Tyldesley 1993) and the draft document, "Natural Assets in Avon - A policy guide and criteria for the selection of non-statutory sites of nature conservation importance", which was produced by Avon County Council in 1995.

Site characteristics relate to a site's intrinsic value for nature conservation. The community factors consider the social context of a site.

Site Characteristics

(I) Naturalness: Areas of semi-natural habitat are often the most important for nature conservation because they support the highest number of native British species.

(ii) Size: Larger sites are usually more important than smaller sites and likely to accommodate more habitat variation. In the absence of large sites, small sites increase in value.

(iii) Diversity: This refers to the range and diversity of wildlife species, habitat and/or geological features present on a site. Some habitats are naturally of low species diversity, e.g. reedbeds.

(iv) Rarity: This considers how common or uncommon the species, habitats or geological features present on the site are, for example, the features of interest may be rare on an international, national, county or local scale, and a species rare in Avon may be common elsewhere in Britain.

(V) Fragility: Some sites are more vulnerable to change and damage by external influences. Particularly fragile areas require careful conservation to remain viable in the long term. For example, the quality and quantity of water passing into and out of a wetland area are important in the conservation of the wetland habitat.

(vi) Irreplaceable: Some areas, such as ancient woodland once lost or damaged cannot be re-created in hundreds of years, if at all. Many sites cannot be re-created elsewhere on account of technical difficulties, land availability, cost, community values and other ecological or social reasons.

(vii) Typical or Representative: It is desirable to safeguard a sequence and range of habitat types and geological features. Particularly good examples of "typical" or "representative" features should be conserved, including those of a typically urban character e.g. canals, abandoned wharves and disused railway lines colonised by nature.

(viii) Geographical Position: The geographical position of a site may enhance its value; for example because of its location in or adjacent to a wildlife corridor

or its proximity to other habitats of wildlife value. The interest of a geological site may be as part of a sequence of geological features across Avon.

(ix) Important Populations of Species: Some sites are important because they hold a large proportion of the Avon population of a species.

(x) Age or Continuity of Land Use: Some sites have ecological characteristics derived from their long standing such as ancient woodland and traditionally managed meadows. Old, relatively undisturbed environments tend to be rare and usually contain a large range and diversity of species.

(xi) Presence of key species and habitats: The site is important for key species and habitats highlighted in the UK Biodiversity Action Plan and in regional and local biodiversity action plans.

Community Factors

(I) Community or Amenity Value: Sites are assessed in terms of their value to local people. For example, some sites are valued by the local community on account of their attractive flowers or their rural atmosphere away from the hubbub of urban life. Others are of particular significance to the local community because of their links with community history, such as canals, disused railway lines and old cemeteries.

(ii) Physical Access: Physical access to sites is a valuable asset in urban areas. Sites with access for disabled people are particularly important.

(iii) Visual Access: Visual access to sites is also an important consideration in urban areas. For example, although there may be no physical access to a site, the local community may be able to observe and enjoy wildlife there from outside the site's boundaries. Some sites can be seen by a large proportion of the urban population, e.g. on a prominent hillside.

(iv) Educational Value: Some sites may be of particular value for formal and/or informal education by virtue of their proximity to educational establishments and/or having a range of robust habitats or facilities to aid study and interpretation.

(v) Landscape or Aesthetic Appeal: This is difficult to assess objectively, but is often indicated by the number of people using or appreciating the site, and is therefore closely linked to (I) and (ii) above.

(vi) Situated in Area Lacking Natural Habitats: The location of a site within an ecologically impoverished part of the conurbation may enhance its special conservation value.

(vii) Recorded History: Some sites have been studied by amateurs and professionals for many years, or may be the location at which a specific discovery was made. These add to the conservation value of the site.

APPENDIX 2 - GUIDANCE ON APPLYING CRITERIA FOR SNCIs / WILDLIFE SITES

Application of criteria – guidelines for scoring

To qualify as an SNCI / Wildlife Site, a site must demonstrate clearly that it is of substantive biodiversity interest, using the listed criteria. Each site must be of significant importance for biodiversity in the context of the individual unitary area. Evaluation must be done in a standardised manner.

Whilst it is not appropriate to have absolute cut-off points for these criteria, as a guide, to qualify as an SNCI/ Wildlife Site a site should have:

- at least one 'strong' score in criteria 1 – 11 (scientific criteria)

plus:

- 2 or more other 'strong' scores from any criteria

or

- 1 other 'strong' and 3 or more 'moderate' scores from any criteria

or

- 5 or more other 'moderate' scores from any criteria

No.	Criteria	Strong	Moderate	Weak	Nil
1	**Naturalness**	Absence of inappropriate human disturbance	Some disturbance, but natural regeneration has occurred.	Inappropriate recent human disturbance	Dominated by recent human disturbance
2	**Size**	Large ecological unit for type of habitat	Well above minimum mappable units	Minimum mappable unit	Too small to maintain ecological integrity
3a	**Diversity - Species**	High number of species for this habitat	Moderate number of species for this habitat	Low number of species for this habitat	Minimal diversity i.e. dominated by one species
3b	**Diversity - Habitats**	3 or more semi-natural habitats	2 semi-natural habitats	1 semi-natural habitat	No semi-natural habitat
4a	**Rarity – species**	One or more RDB or equivalent nationally rare or scarce species; or two or more locally rare or scarce species	At least one locally rare or scarce species	No rare or scarce species recorded	Only common species
4b	**Rarity – habitats**	Nationally rare semi-natural habitats	Locally rare habitats	No rare habitats recorded	Only common habitats
5	**Fragility**	Habitat or species populations under severe threat of removal	Habitat or species populations under threat of removal	Slight threat to habitat or species populations	No known threat
6	**Irreplacability / lack of recreatabiltiy**	Not possible to recreate in a reasonable timescale e.g. ancient woodland	Naturally regenerated sites	Recreatable within a short time period	Immediately recreatable or replaceable
7	**Typicalness/ Representative example**	Very good/best/ classic/only example of this habitat in district and/or UK BAP priority habitat	Reasonable example, degraded semi-natural BAP priority habitat	Poor example of semi-natural habitat type, better examples elsewhere	Common habitat type but very poor example

APPENDIX 1 **Procedure for designation of Local Sites in Bath & North East Somerset**

No.	Criteria	Strong	Moderate	Weak	Nil
8	**Geographical position**	The site is linked to more than one area of semi-natural habitat; is part of a concentration of SNCIs / Wildlife sites; or it is within a Strategic Nature Area	Linked to one other area of semi-natural habitat	Weakly linked to other semi-natural habitat or wildlife corridor	Completely isolated from other semi-natural habitat
9	**Important populations**	Holds a significant population of a notable or BAP species (what is significant will vary by species)	Holds an important population of a notable or BAP species	Does not hold an important population of a notable or BAP species	No notable or BAP species recorded
10a	**BAP species**	Species recorded subject of a UK BAP Action Plan	LBAP priority short list species recorded	LBAP long list species recorded	No BAP species recorded
10b	**BAP habitats**	Regional/UK BAP habitat is present	LBAP habitat is present	LBAP long list habitat or degraded BAP habitat present	No BAP habitat
11	**Age/continuity**	Long established habitat	Established habitat	Recently established habitat	Newly established habitat
12	**Community or amenity value**	Site or features of the site are strongly valued by the local community	Site or features of the site are moderately valued by the local community	Site features are weakly valued by the local community	Site features not known to be valued by the local community
13	**Physical access**	Appropriate, good quality public access including some disabled access	Public access provided, but not good quality	Difficult to access	Not physically accessible
14	**Visual access**	Most of site is visible from outside – score more highly when visible to high numbers of people	Some restricted views	Very restricted views	Cannot be seen at all
15	**Educational value**	Appropriate educational features and/or facilities available	Some educational potential or close proximity to educational establishment	Difficult to use for formal education Distant from educational establishments	No formal educational access
16	**Landscape or aesthetic value**	Highly valued for its landscape and aesthetic character	Moderately valued for landscape and aesthetic character	Little value for landscape or aesthetic character	No known value in landscape or aesthetic character
17	**Area lacking in natural habitats**	Only significant semi-natural area in vicinity	One of only a few semi-natural habitats in area	In an area with other natural habitats	In a large block with other natural habitats
18	**Recorded history**	Important historical or survey records	Good continuity of historical or survey records	Only recent or very old records	No known records

This table is a summary.

Refer to “Natural Assets in Avon 1995” where relevant for more detail. The UK priority habitats are listed at http://www.ukbap.org.uk/habitats.aspx

APPENDIX 3
BLANK CRITERIA FORM FOR THE EVALUATION OF SNCIs / WILDLIFE SITES

Application of criteria – guidelines for scoring

To qualify as an SNCI/Wildlife Site, a site must demonstrate clearly that it is of substantive biodiversity interest, using the above criteria. Each site must be of significant importance for biodiversity in the context of the individual unitary area. Evaluation must be done in a standardised manner.

Whilst it is not appropriate to have absolute cut-off points for these criteria, as a guide, to qualify as an SNCI/ Wildlife Site:

- All SNCI/Wildlife Sites must score strongly on at least one of criteria 1 – 11 (scientific criteria).
- Any site with 2 or more strong criteria
- Any site with 1 strong and 3 or more other criteria
- Any site with 5 or more moderate or strong criteria

Site Name and Number:						
	Criteria	**Strong**	**Moderate**	**Weak**	**Nil**	**NOTES**
1	**Naturalness**					
2	**Size**					
3a	**Diversity – species**					
3b	**Diversity – habitats**					
4a	**Rarity – species**					
4b	**Rarity – habitats**					
5	**Fragility**					
6	**Irreplaceability**					
7	**Typicalness**					
8	**Geographical position**					
9	**Important populations**					
10a	**BAP species**					
10b	**BAP habitats**					
11	**Age / continuity**					
12	**Community/amenity value**					
13	**Physical access**					
14	**Visual access**					
15	**Educational value**					
16	**Landscape or aesthetic value**					
17	**Area lacking in natural habitats**					
18	**Recorded history**					

APPENDIX 4

Avon RIGS Group

Criteria for Proposing RIGS Sites

The Avon RIGS Group has modified its assessment method for proposing RIGS sites to take account of the English Nature criteria published in *Earth Science Conservation in Britain: A Strategy*. These are:

1. the value of a site for educational fieldwork in primary and secondary schools, at undergraduate level and in adult education courses;

2. the value of a site for study by both professional and amateur earth scientists; such sites demonstrate, alone or as part of a network, the geology or geomorphology of the area;

3. the historical value of the site in terms of important advances in earth science knowledge;

4 the aesthetic value of a site in the landscape, particularly in relation to promoting public awareness and appreciation of the earth sciences.

The Avon RIGS Assessment Form lists a selection of geomorphological and geological topics set against these four criteria. There is also a catch-all. Other feature/s line for other interests relevant to some sites, e.g. the historic use of stone from the site.

When proposing a site for possible RIGS designation please circle an appropriate code and use a line in the Notes on Assessment box below to explain how this is of regional importance. For example, for the road cutting leading to the Suspension Bridge in Bristol, you think that the fossils exposed are of educational value, so write PE in the first column on a line in the box below, and then on the same line explain what is of particular importance (e.g. many fossil corals and brachiopods very well exposed, useful at all levels of education).

This site also has a number of other important features of interest, including:

ME: several massive calcite and barite/quartz veins well exposed, useful at all levels of education

CCH: the most westerly fissure was investigated and described by Charles Moore (1881, Quart Journ eol Soc, 27, p.75)

OA: the bridge and the gorge make the site a major tourist attraction

Please write in the name and grid reference of the site at the top of the form, and add the date of your visit and your name.

Avon RIGS Group - RIGS Assessment Form

Site name

Site number Grid reference District

Current site status Date

Date of last visit Name of surveyor

	Education Value	Research Value	History Value	Aesthetics Value
Static geomorphology	SGE	SGR	SGH	SGA
Active geomorphology	AGE	AGR	AGH	AGA
Caves and karst	CKE	CKR	CKH	CKA
Cross-cutting relationships (e.g. unconformities, fissures)	CCE	CCR	CCH	CCA
Lithology	LE	LR	LH	LA
Mineralogy	ME	MR	MH	MA
Palaeontology	PE	PR	PH	PA
Stratigraphy	SE	SR	SH	SA
Tectonic structures	TSE	TSR	TSH	TSA
Other feature/s	OFE	OFR	OFH	OFA

Notes on Assessment (please refer to the codes above for each line, e.g. PE)

Further information required Yes No Site visit required Yes No

Expert Advice: Name Date

Proposed as RIGS by Date

Reviewed as RIGS by Date

Proposed re-designation/de-designation by Date

Accepted by Designation Group: Yes No Date

Accepted by RIGS Committee: Yes No Date

Planning authority informed of recommendation Date

Recommended status accepted: Yes No Date

APPENDIX 5

INFORMATION FOR PARTNERSHIP MEETINGS ON CHANGES TO SNCIs / WILDLIFE SITES

The sheet in Appendix 3 should be completed for each site proposed, together with the following information for the Partnership meeting:

GRID REF
NAME OF SITE
PROPOSED SITE BOUNDARY
FEATURES FOR WHICH THE SITE IS BEING DESIGNATED
DATE OF SURVEY
SURVEYORS

The following information should be added at the partnership meeting:

PARTNERSHIP COMMENTS
DECISION
DATE OF DECISION
REASON FOR DESIGNATION

APPENDIX 6: Definitions

BAP: Biodiversity Action Plans were drawn up nationally in 1994 to deal with biodiversity conservation listing species and habitat types of conservation concern. In recognition that biodiversity is ultimately lost at a local level there is an Avonwide BAP and individual local authority BAPs.

UK BAP www.ukbap.org.uk
Biodiversity South West www.biodiversitysouthwest.org.uk/
Avon BAP www.avonwildlifetrust.org.uk/ABAP/introduction.htm
Bath & NE Somerset BAP www.wildthingsbap.org.uk
South Gloucestershire BAP www.southglos.gov.uk/Environment/CountrysideandNature/Biodiversity/
North Somerset BAP www.n-somerset.gov.uk/Environment/Conservation/Wildlife/

Notable Species: Notable species are those in the former county of Avon meeting criteria based on legal status or protection or limited number and distribution.

Strategic Nature Areas: The best places for action across the region to conserve, create and connect large scale wildlife habitats identified on the South West Nature Map and the Regional Spatial Strategy.

Plans

Habitat Features
(2222/P02 July 2016 PW)

Landscape and Ecological Management Plan
(2222/P03 July 2016 PW)

- Site Boundary
- Application Boundary
- Rank Grassland
- Species Rich Semi-Improved Grassland
- Dense Scrub
- Mixed Scattered Trees
- Scattered Trees/Treeline
- Woodland
- Tall Ruderal Vegetation
- Species Poor Hedgerow
- Dry Ditch
- Earth Bank
- Fence
- Running Water
- Buildings
- Residential Gardens
- Tarmac and Hardstanding
- Target Note TN1 - TN5

TN1: Location of variagated yellow archangel *Lamium galeobdolo.*

TN2+TN3: Approximate location of pyramid orchid *Anacamptis pyramidalis*

TN4: Approximate location of common spotted orchid *Dactylorhiza fuchsii.*

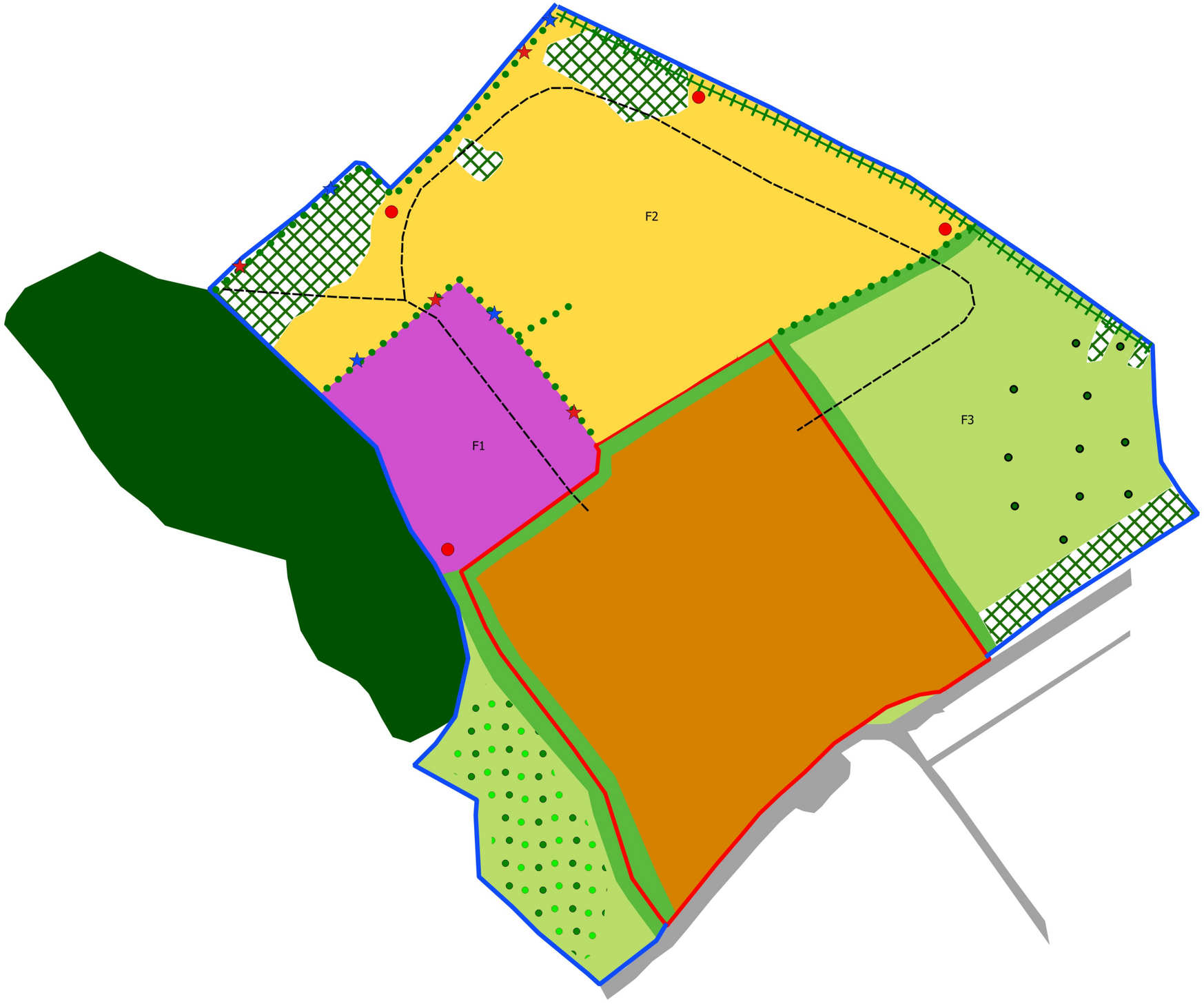
TN5: Approximate location of woolly thistle *Cirsium eriophorum.*

N

0 40 m

Project	Tyning Hill, Radstock
Drawing Title	**Habitat Features Plan 2016**
Scale	As Shown (Approximate)
Drawing No.	2222/P02
Date	July 2016
Checked	PW/HM

Tyler Grange
Lion House, Rowcroft, Stroud, Gloucestershire GL5 3BY
T: 01453 765 500 E: info@tylergrange.co.uk W: www.tylergrange.co.uk



Application Boundary

Site Boundary

Existing and Retained Elements

Rank Grassland

Mixed Scattered Trees

Scattered Trees/Tree Line

Dense Scrub

Species-poor Hedgerow

Offsite Woodland

New Landscape Elements/Ecological Habitat

Area of Translocated Concrete Substrate

Creation of Species Rich Neutral Grassland with Scalloped Edges

Proposed Native Hedgerow Planting

Residential Development (Refer to Plan xxx for Full Layout)

Existing Desire Lines to be Formalised

Proposed Hibernacula Locations

Proposed Bat Box Locations (Approximate)

Proposed Bird Box Locations (Approximate)

N

0 30m

Project	Tyning Hill, Radstock
Drawing Title	Indicative Landscape & Ecological Management Plan
Scale	As Shown (Approximate)
Drawing No.	2222/P03
Date	July 2016
Checked	PW/HM

Tyler Grange

Lion House, Rowcroft, Stroud, Gloucestershire, GL5 3BY
T: 01453 765 500 E: info@tylergrange.co.uk W: www.tylergrange.co.uk