

BYLCHGWYN TRAVELLER SITE Location: LL11 5UB, SJ 267 536 Planning consent APP/H6955/A/19/3221887,
Land near Graig Wen Farm

Compensation Area Management Plan

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This management plan is by E J Lomas of Camlad Ecology Ltd. He holds an MSc in Ecology and Management of the Natural Environment (University of Bristol 1997) and has over 30 years' experience of ecological survey work and landscape management in Shropshire, Montgomeryshire District, and the West Midlands. He also has extensive work experience in agriculture.

BYLCHGWYN TRAVELLER SITE**Compensation Area Management Plan****SUMMARY**

This Habitat Management Plan has been prepared to meet planning requirements relating to use of an area of land near Bwlchgwyn as a four pitch Traveller Site, at SJ 267 536. The planning authority is Wrexham County Borough Council, Application no. P/2018/0613, Appeal Reference APP/H6955/A19/3221887.

The purpose is to manage a 0.5 acre (2,024m²) area of nearby land as a compensation area to mitigate the loss of habitat in the part of the site to be occupied (the residential site), with the main objective being to provide suitable habitat for great crested newts, a European Protected Species (Conservation of Habitats and Species Regulations 2017 et seq.). Other nature conservation objectives are the provision of bat boxes and the removal of invasive non-native rhododendron shrubs from the margins of the whole site. A small area of land between the compensation area and the development site may be used for other purposes, including overflow water treatment.

Great crested newts are known to be present in a pond about 250m west of the residential site and are very likely to be present in a pond 145m to the west. A third pond 170m south east of the site also has potential to support gcn. All these ponds are surrounded by very high quality terrestrial habitat; a number of scientific studies indicate that they are unlikely to move much further than 70m from the ponds in these circumstances.

The compensation area is being provided under a Unilateral Undertaking, with a commitment to long-term management arrangements. The greatest benefit from managing this ground as great crested newt habitat may be that it provides an area under separate and alternative management, providing some GCN population security from local changes to agricultural and woodland management, which cannot be effectively controlled.

Historic maps, aerial photographs from 1999 onwards (Google Earth), vegetation survey and remnant structures all strongly indicate that this site was formerly grazed and has not been managed since around 2012. Surrounding fields are typically of grass and rush pasture at a low level of agricultural management. Rushes are replacing grasses across the compensation area, with willow shrubs spreading from a central belt to dominate other vegetation. This is clearly transitional habitat, likely to stabilise as willow carr, of limited botanical and habitat diversity.

This management plan aims to establish clear and functional boundaries and access routes, to retain the habitat diversity within the compensation area, limiting the spread of rushes, brambles and willow shrubs, and to remove rhododendron growth. New habitat features will be provided, including use of rubble to create refugia mounds for gcn, placing of bat boxes on trees or posts, and planting small clumps of native trees and shrubs along one boundary. Advice is given on managing risks to wildlife in the residential area, and on some alternative grass and rush management strategies, including very limited grazing.

To comply with the Unilateral Undertaking independent ecological managers will be employed by the owners. In the first place this is expected to be E J Lomas of Camlad Ecology in an advisory role, with some establishment work on site carried out by the owners, and regular habitat maintenance work managed and carried out by Wild Ground. Succession in these roles will be by mutual agreement and in compliance with the Unilateral Undertaking.

Bylchgwyn Traveller Site:**Compensation Area Management Plan****Part 1: Origins and site description****1.0 Origins**

- 1.1 This ecological management plan is presented to support the development of a residential Gypsy and Traveller Site on former agricultural land. It has been prepared by Camlad Ecology Ltd. in response to planning requirements.
- 1.2 The land is owned by the Evans family; in July 2018 Mr William Evans applied for planning consent to establish a residential Gypsy and Traveller Site of four pitches, on land described as former agricultural land. The application followed the preparation of plans and various surveys including a Preliminary Ecological Appraisal (PEA) and environmental DNA (eDNA) studies by Pearce Environment Ltd. The Application P/2018/0613 was refused consent by Wrexham County Borough Council in September 2018; this decision was overturned by The Planning Inspectorate in July 2019, Appeal Reference APP/H6955/A19/3221887. The Inspector allowed the appeal and granted planning consent.
- 1.3 The Inspector's Report requires planning conditions relating to the recommendations made in the PEA and comments by Natural Resources Wales. These were principally concerned with the presence of great crested newts in the locality (these are a European Protected Species under the Conservation of Habitats and Species Regulations 2017, which are being carried forward post-Brexit). Other matters of ecological concern were noted: the need to eliminate growth of a non-native invasive species, *Rhododendron ponticum*, growing along one edge of the site, and the need to provide bat boxes and other measures to compensate for a general loss of habitat.
- 1.4 A habitat creation and enhancement area (the compensation area), provided as a planning obligation, and the provision of a long term management plan covering management arrangements, funding, wardens and surveillance is intended to ensure that the development is not likely to be detrimental to the maintenance of the favourable conservation status of the local great crested newt population.
- 1.5 To secure the long-term management arrangements a Unilateral Undertaking was submitted and agreed at the hearing. This management plan sets out the proposed practical arrangements and management methods to meet the ecological concerns, for a period of 21 years. In response to the paragraphs 16, 17 and 21 of the Planning Decision this management plan is largely concerned with enhancement and management of an area of land as terrestrial habitat for great crested newts. It is not therefore a management plan intended to achieve the highest potential biodiversity, or to manage the area as a particular habitat type.
- 1.6 To comply with the Unilateral Undertaking independent ecological managers will be employed by the owners. In the first place this is expected to be E J Lomas of Camlad Ecology in an advisory role, with some establishment work on site carried out by the owners, and regular habitat maintenance work managed and carried out by Wild Ground. Succession in these roles will be by mutual agreement and in compliance with the Unilateral Undertaking.

2.0 General Habitat Description

- 2.1 The habitat area is defined on plans attached to the Unilateral Undertaking, relating to the Planning Inquiry decision, as modified in 2021. It is in places referred to as 0.5ha in area, but it is clearly 0.5 acre, 2,024m²; the whole of the ownership encloses about 0.6 hectare or about 1.5 acres. The habitat area was defined on plans attached to the Unilateral Undertaking, relating to the Planning Inquiry decision. In 2021 an agreement in principle was reached to change this area, moving it to the western end of the site; final documents are being processed. Detailed plans follow section 3.
- 2.2 The basic description of the Compensation area is as part of a former pasture field, on relatively impermeable clay soils, probably not grazed or otherwise managed for around ten years and becoming dominated by growth of soft rush, with increasing willow shrub growth. It has no definite boundary on two sides, east and west, and a post and wire fence on the north side. On the south side is an open hedge line of shrubs on a low stone and turf bank. There is no evidence of an internal drainage system. Blocked field drains may be present.



View of the compensation area, southern boundary to right

- 2.3 The development site consists of about 1,900m², land that was clear of vegetation in 2017 and is now sparsely vegetated (also referred to as area A in parts of this management plan; the traveller site). From photographic and other evidence it appears that clearance of the site began before the land came into the ownership of Mr W Evans and his family.
- 2.4 The remainder of the ownership includes the compensation area (area C) and a smaller piece of land to its north west (area B, being about 1,000m² or 0.25 acres). At present these (B & C) form a single wholly vegetated unit, with ground cover dominated by soft rush (*Juncus effusus*). There are small areas where either tufted hair-grass (*Deschampsia cespitosa*) or Yorkshire fog-grass (*Holcus lanatus*) is abundant, scattered patches of other grasses including red fescue and rough meadow-grass (*Festuca rubra* & *Poa trivialis*), and a few bramble clumps. Grey willow (*Salix cinerea*) shrubs are frequent and now form an almost continuous belt through the length of the site. The field slopes gradually from both ends towards the middle, and more steeply from south to north, across the width of the enclosure.



Grass and rush swards on south edge, willow belt to left, horse shelter rear right

- 2.5 Google Earth images from 2006 show this field as rough grassland with some patches of rush and some evidence of horse grazing, in the form of a field shelter. By 2018 the extensive rush cover and scattered shrubs are apparent. Willow cover has increased noticeably since June 2018.



North edge of compensation area, rushes and willow shrubs

- 2.6 Boundaries to the north and west are wire fences, but the southern boundary is ecologically significant, being partly as a low stone and turf bank with shrubs (willow, hawthorn and others) growing on top of this and along the far side. Similar but taller walls such as clawdd walls in Welsh coastal areas and Devon hedges in south-west England are regarded as valuable habitat features. There are no internal boundaries at present.



Raised bank, southern boundary

2.7 Plant communities: We have not carried out a formal NVC survey (National Vegetation Classification, Rodwell et al, 1991 et seq.) of the compensation area or surrounding habitats, but we have assessed the cover values for typical areas of the rush dominated sward and visually assessed the surrounding fields. Less improved wet grassland around the site appears close to typical MG10 rush pasture (a grassland community), with a high proportion of rough meadow-grass (*Poa trivialis*) as well as rush clumps and Yorkshire fog. The rush dominated area of the wider site has cover values for rushes close to M23 rush pasture (a marshland community) but some of the defining species are not evident, particularly marsh bedstraw (*Galium palustre*) and other marshland plants. This also suggests that the sward is in transition from grazed MG10 pasture.

3.0 Adjacent habitats

The following section describes the habitats adjacent to the site, including the nearest pond. These are labelled by number on the habitat plan and the descriptions follow the boundaries of the site, clockwise from the northern edge and numbered as on the plan, e.g. (2). A sequence of photographs is provided in Annex 2.

3.1 The enclosure just north of the site is in two parts; the section close to the road and adjacent to the development site (area A) has gone through several phases of clearance and agricultural construction since 2006, with wide-span buildings and pig rearing provision in two yards, but no sign of recent use for pigs (1b on the location and habitat plan, following). The section adjacent to areas B & C has remained as grassland with some sign of cultivation on GE images and a new drainage ditch running from the lowest point of the boundary with area B. It is now ungrazed or lightly grazed, with rush tussocks (1a).



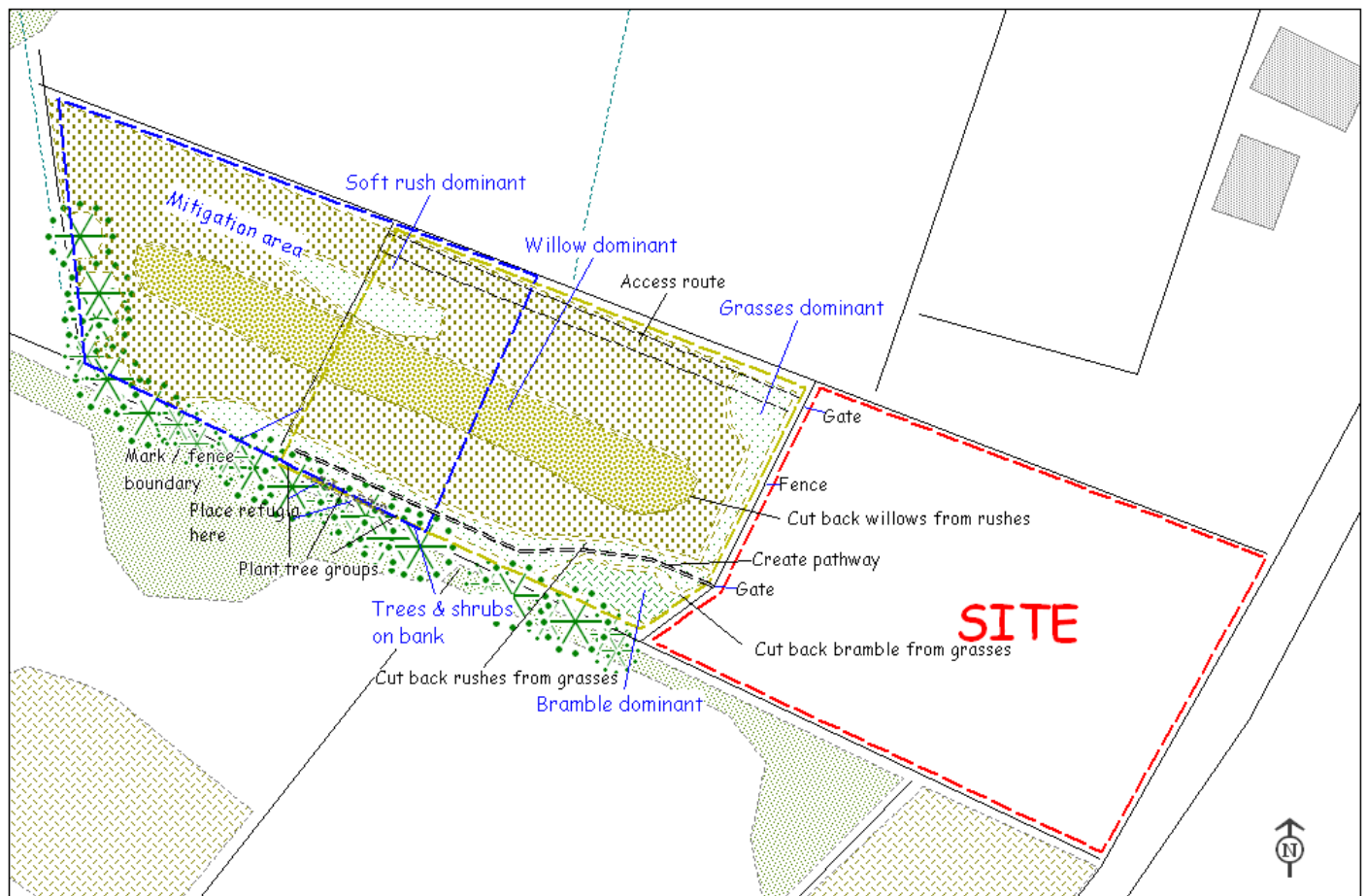
Adjacent enclosure 1a, site to left, 1b buildings to rear

- 3.2 This field is shown together with the development site and compensation area as one single enclosure on all historic large scale OS maps, up to and including 1987. There are no internal boundaries or drainage ditches shown on these maps, but on the 1876 map a large part is shown as marshy pasture; there is some map evidence that the stream was partly re-routed in two stages before 1899.
- 3.3 Continuing clockwise around the site boundary, the roadway past the site is surfaced with compacted stone, with narrow verges and a post and wire fence on the far side. There is horse pasture beyond the fence, sloping away from the site to a tree lined drainage ditch with a steady flow of water (2).
- 3.4 South of area A there is a small block of mature woodland, mainly birch with some oak, holly and rowan, with rhododendron in the understorey (3). This woodland is not shown on 1876 OS maps, but is shown as conifer woodland on an 1899 map. A public footpath runs along the side of the wood between it and the site; the rhododendron growth mentioned above and in the PEA is in the margins of this path and extends slightly into the site. Adjacent to this woodland and area B there is a small grazing field; Google Earth images show increasing shrub and tree growth in this field (4). There are a few mature birch trees within the enclosure and a line of shrubs and small trees along the boundary with area B.
- 3.5 The next enclosure to the west is also grazed, but more heavily wooded, and Google Earth images again show the woodland cover increasing. On all images from 2006 onwards this field appears to be rough grazing with rushes, and on modern maps it is actually shown as woodland (5). This enclosure runs alongside part of area B and the whole of area C.
- 3.6 The pond identified as WB1 in the Pearce report is in the north west corner of this field, about 75m from the start of area B, the compensation area, and 145m from the start of the cleared development site. This is significant in terms of the likely risk to great crested newts, and thus to site management. See Annex 1. The pond does not appear on historic maps, and three public footpath routes meet next to the pond; the line of at least one appears to pass through it. The two fields described above and a small field further west, adjacent to Graig Wen Farm, appear to be grazed as one continuous pasture area by several horses.



Enclosure 5, the site is to the right and the pond WB1 lies beyond the shrubs in the centre

- 3.7 There is a small stream running roughly south west to north east along the edge of this field; the pond WB1 overflows into it through a steep trench. A ditch runs part way from area C of the site to the stream. The stream and this ditch form two sides of a small triangular enclosure, of pasture with rushes and shrubs (6), which opens to the land north of the site (1b). This field completes the circuit of ground around the site, as described.
- 3.8 The wider area around the site is largely under permanent pasture, as small fields with hedgerows, some sheep grazed but with shrubs and bushes within the fields, others open and cut for hay. Many of the fields that are not cut have some tussocky rush growth, but appear to provide good grazing for normal numbers of sheep; they are likely to be semi-improved grassland. There are small blocks of deciduous woodland, the largest about 2ha, north of the site.
- 3.9 There are two further ponds in the wider landscape; WB2 in the Pearce report is a narrow canal like pond set among trees in a large naturalistic garden, with another small pond immediately adjacent, about 250m from the development site, while WB4 is a small pond at the far end of a narrow belt of woodland on the south side of the access track, about 170m south west from the development site and further away than it appears to be on plans in the Pearce report. WB2 does not appear on maps before 1964 and WB4 does not appear on any maps. WB3 is a small temporary pond associated with drainage ditches that are normally dry.
- 3.10 These ponds were viewed by the author in early July 2020 after a lengthy dry period; WB1 and WB4 contained a good level of water and had extensive macrophyte growth, while WB2 was virtually dry. From our survey in summer and some corrected data, it seems that the HSI values quoted in the Pearce report are a little low; these three ponds would range from average (WB4) to upper good values. Only WB2 was subject to eDNA survey, after a gcn sighting in the pond. The presence of gcn was confirmed. They are also very likely to be present in WB1; subjectively, we would rate this pond as excellent.

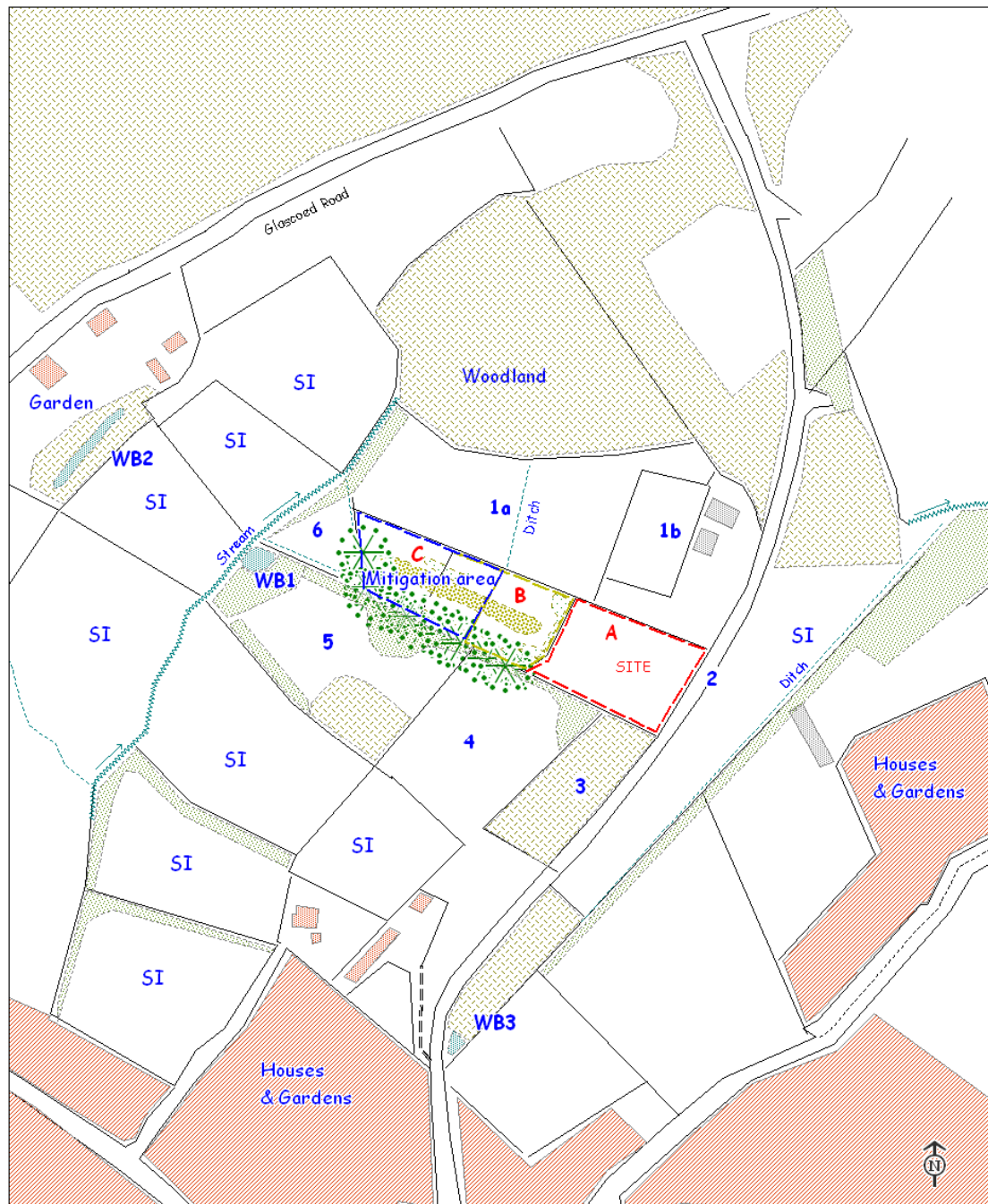


Traveller site, Bwlchgwyn Habitat and management

Scale approx. 1:1,000 @ 18cm frame width

Boundaries and habitat layout approximate, representative only

This shows the layout as modified by agreed changes in 2021.



Scale approx. 1:2,500 at 18cm frame width

Traveller Site, Bwlchgwyn Location & Habitats

Boundaries & features as shown are representative only

- | | | | |
|----------|---|--|---------------------------------------|
| 1a ... 6 | Habitat around site (see ecology text) | | Residential areas (Bwlchgwyn village) |
| SI | Semi-improved grassland | | Separate houses, barns, traditional |
| | Scrub, scattered trees, dense hedgerows | | Widespan buildings, sheet clad |
| | Woodland (mixed & deciduous) | | |

Part 2: Management operations and constraints

4.0 Management procedures, compensation area and site boundaries

Before starting any work on the compensation area and area B, the owners and other workers will be briefed by the monitoring ecologist on the legal protection given to great crested newts, bats, and nesting birds, risks to the newts and other species, and other environmental risks.

4.1 The following procedures or tasks are in a general sequence. Some operations may be carried out by the site owners, others by nominated ecological managers, in accordance with the Unilateral Undertaking. See also Annex 1, Schedule of work.

1. Construct a strong fence on the boundary between area B and area C, leaving suitable gateway openings at either end. Close these with strong frame gates or hung gates. Posts and other timber should be treated for durability, but any chemically treated timber must thoroughly dried out before use.
2. Create an access path by strimming a pathway 1 to 1.3m along the upper edge, from area A into area C, about 4 to 6m in from the hedge line on the south side of the site. Begin this at start up, and then annually starting in late April, with a first cut about 125mm above ground level, then make at least 2 further cuts through spring and summer, gradually bringing the height down to 75mm. Cuts to be at least 7 days apart.
3. Place at least three strong and durable fence posts (as in task 1 above) to mark the boundary between area A and area B, or construct a strong fence with gated openings along the boundary.
4. Using rubble from the site, create at least two GCN refugia against the bank of the hedgeline, towards the eastern end of area C, of a form and construction based on the GCN Mitigation Guidelines (English Nature 2001) modified to meet the bank.
5. Select suitable mature trees of at least 200mm stem diameter ('dbh', diameter at about 1.2m) that are within the wider site or clearly growing on the site boundary and place three bat boxes on these, 2.5m or more above ground, as directed. Bat boxes to be of two or more types, including 'Kent' type boxes and chamber boxes, in durable materials, such as Schwegler 2f, Eco Kent box, Vivara Pro Harlech or Vivara Pro LargeWoodstone. If there are no suitable trees, durable posts of at least 150mm diameter and at least 2.7m high may be set up next to the hedgeline and used to support bat boxes.
6. Maintain or slowly increase the area of grass sward by strimming growth down to 125mm height in late April along the south side, for about 8m inward from the hedgeline, except in areas of tree planting and bramble clumps. When doing this, cut into the margins of dense bramble and rush growth to limit or reduce their extent. Similarly, trim other areas of grass growth.
7. Cut down willow shrubs around the edges of the willow belt and pull saplings, to limit its extent. If necessary cut through the bases of established shrubs and apply a herbicide stump treatment. Herbicide use must only be carried out by qualified and suitably experienced workers, with appropriate PA certification.

8. Arisings or cuttings from all strimming and cutting operations are to be gathered up and removed from site, or stacked as a single compost pile in a specified location, in a low part of the site but not where it will drain quickly to a watercourse.
 9. Cut through rhododendron roots along the whole site boundary and uproot all growth within the site. Alternatively, make arrangements with the neighbouring landowner and treat by cutting through bases and applying herbicide stump treatment, as for willows. Appropriate PA certification is necessary.
 10. Plant small groups of trees as whips in tubes or small fenced enclosures, at about 3m by 3m spacing, using oak, downy birch and rowan, using 5 – 7 trees, three groups in total, in the western half of area B and the eastern part of area C. Trees of strictly native origin from specialist nurseries must be used if purchased, or locally gathered seed may be used.
 11. Check and replace any failed trees, and maintain tubes and supports. Remove tubes and supports when the trees are no more than 60mm stem diameter, or earlier if judged safe.
 12. Check site twice annually for invasive species, ideally late spring and early autumn, treat if necessary (see separate biosecurity plan)
- 4.2 Operations 2, 6, 7, 8, 11, 12 will require annual work to maintain the condition of the compensation area. Operation 9 may require work every two years, depending on inspection. Operations 1, 3, 4, 5 and 10 should only require annual inspection and remedial work if needed. See Annex 3.
- 4.3 Progress should be reviewed in late summer in years 2, 5, 10, 15 & 20, following a survey by the monitoring organisation.

5.0 Grazing, drainage and access options

- 5.1 Very limited grazing would benefit the compensation area, particularly combined with more extensive strimming of rushes. However, this cannot be long term, or with supplementary feeding within the compensation area, or at a density of more than two horses, ponies or cattle. Planted trees would require additional protection, such as tall tree guards.
- 5.2 It is possible that more manageable grazing might be provided by arrangement with a neighbouring landholder; in this case good fencing and gateway arrangements would be needed to keep livestock off the compensation site most of the time. Any grazing in the compensation area must be in compliance with advice from ecological managers, otherwise it risks breaching the Unilateral Undertaking.
- 5.3 Similarly, increased drainage would benefit the compensation area, but this presents direct risks to GCN. Very limited excavation of a short gathering ditch connected to the ditch running north across the adjacent field might be possible, but this would require discussion and agreement with the neighbouring landowner and with the ecological managers. Alternatively, perforated land drain piping could be run in a trench close to the northern boundary; this would require progressive strimming down of the sward beforehand, as in 6.1.2 above, and specialised trenching machinery.

- 5.4 The plans in the Unilateral Undertaking (original and as modified 2021) show a 4m wide access track along the northern boundary of the compensation area. Unfortunately this is the lowest and wettest part of the area. Creation of a firm-surfaced track here would involve use of heavy machinery, excavation, drainage and other risky procedures. To comply, the access route should be left open, accessible from area A, and without any new obstruction.
- 5.5 If at any time this route needs to be made fully functional, the access track footprint should be strimmed as for procedure 4.1.2 above and then reinforced with a suitable geotextile mesh. Drainage could be improved as suggested above, 5.3.
- 5.6 The habitat maintenance measures that are needed to comply with the undertaking are best carried out with hand held tools, and this also has less risk to newts and other wildlife, so access along a pathway on the southern edge is preferable. If compact tractors are used, these do not normally need more than a 1.3m wide access.

6.0 Residential Site risk avoidance

Before starting work on the residential site, the owners and any other workers will be briefed on the legal protection given to great crested newts, risks to the newts and other environmental risks.

- 6.1 The principal risks to great crested newts from the development of the residential site (area A) will come from the unintentional creation and then movement or destruction of shelter habitat, and from pollution. Shelter habitat could mean any sort of coarse or bulky material placed loose on the ground near the margins of the residential area, or any sheds, containers, pallets or similar resting on or very close to the ground.
- 6.2 Ground around the residential areas and within 3m of the site boundary should be kept clear of all loose material, and all vegetation should be kept very short. If temporary or lightweight structures are placed in this zone they should be either with an exposed earth floor, or fully bedded on sand or very fine aggregate (all less than 10mm), or placed on solid foundations with at least a 75mm air gap under the floor; these measures avoid the creation of crevices.
- 6.3 When moving bulky material all pieces should be lifted directly or raised onto one edge then lifted, to avoid skidding, slewing or sliding, while maintaining a watch for newts and other wildlife.
- 6.4 Care should be taken to avoid all chemical or fuel spillage. No surface or buried drainage channels should be created that lead directly to the compensation area or to watercourses in the wider area around the site. As the soils and sub-soils are clayey, blind interceptor ditches or drainage to deeper strata may be needed.
- 6.5 If any great crested newts are found during work on site work in that area (as defined on the plan, A, B or C) must stop and the ecologist monitoring the site, or the succeeding ecological managers, must be informed straight away. This may not lead to long-term restrictions, but the need for licensing has to be assessed.

- 6.6 It could be possible to use part of area B to create a natural filter bed for water from the development. This would require drainage piping as in 7.3 above, strimming down of the rush and grass sward along a working corridor as in 6.1.2 above, and careful design and construction to avoid direct discharge to open watercourses or 'channelling' through the filter area. (This is the gradual formation of narrow channels that pass through the filter area). Small scale low ground pressure trenching equipment should be used to place drainage pipes.

Annex 1

Habitat Management Issues

A1.0 Probable distribution of great crested newts

- A1.1 Great crested newts are clearly hard to study in their terrestrial phase: they leave no recognisable droppings or footprints, unlike mammals, don't bask like reptiles, and don't fly about and sing from perches like birds. They are small, stay in cover and mostly move about at night. All of which is obvious, but it still leads to generalisations and assumptions.
- A1.2 The standard question asked by planning officers and their ecologists is 'are there any ponds within 250m of the site?' If so, great crested newts may be present and the client's ecologist should survey and assess. This is a very valid start, but it leads to a view of the landscape from the development site, rather than from the ponds, and most unfortunately can lead to an unstated and unrecognised assumption that the newts are distributed with equal probability everywhere within 250m of the pond. This view is challenged by a little critical thinking and by many studies, including the findings of Cresswell and Whitworth (2004) and Jehle (2000), and by an assessment model provided by Natural England, which uses radii of 100m, 250m and over 250m to set levels of potential risk from various values for the area affected (Form A14, Method Statement spreadsheet, sheet 2 'instructions' updated Feb 2020).
- A1.3 Cresswell and Whitworth (English Nature technical report 576, 2004) found that most almost all captures of gcn in reported mitigation projects that enclosed breeding ponds were made within 50m of the pond, and there were few captures at over 100m from the pond. This study was effectively a metadata study of mitigation licence returns. The findings of this study supported the finding by radiotracking (Jehle, 2000) that 95% of summer refuges were located within 63m of the breeding ponds.
- A1.5 Cresswell and Whitworth (2004) also found a strong correlation between captures and particular habitats: hedgerows most strongly, but woodland, wet habitats and rough grassland also showed a positive correlation. Two other habitats also showed positive correlations, arable and post-industrial, but these may have been the result of self-selection, being the predominant habitats in and close to some mitigation projects. Apart from these factors, there is close agreement with the descriptions of suitable habitat given in Oldham et al. (2000), the original paper for the Habitat Suitability Index (HSI) methodology. If the element of habitat diversity provided by hedgerows and unmanaged areas is separated, improved and poor semi-improved pasture appear poor as habitat; this may be due to low plant diversity, a lack of cover, and ground compaction.
- A1.6 The most important statement in Cresswell & Whitworth (2004), in relation to this management plan is:

'The capture data revealed relatively clear associations between numbers caught (both total captures and totals excluding larvae) and certain habitat variables. There was also a significant correlation between captures and proximity to breeding ponds, and when habitat and proximity variables were combined the relationships were much stronger.' (our underlining)
- A1.7 When there is extensive favourable habitat close to a breeding pond, great crested newts are therefore unlikely to be found further than 70m from the pond, as a working approximation, and very unlikely to be found more than 100m from the pond. The development site (residential area) is 145m from the nearest

pond, WB1, and does not lie across any evident habitat link between that pond and any others. WB1 is very close to scrub, rough grassland, woodland and hedgerows, as are WB2 and WB4.

- A1.8 Natural Resources Wales (NRW) consider that the proposal (the development) is not likely to be detrimental to the maintenance of favourable conservation status of the local population of GCN (see paragraph 17 of the Planning Inspector's report).
- A1.9 The compensation area is being provided under a Unilateral Undertaking, which includes a commitment to long-term management arrangements. The greatest benefit from managing this ground as great crested newt habitat may be that it provides an area under separate and alternative management, providing some GCN population security from local changes to agricultural and woodland management, which cannot be effectively controlled.
- A1.10 However and whenever the initial clearance of the development site (area A) occurred, there has been an evident loss of semi-natural habitat. It is unlikely that this had a significant impact on the local GCN population. Considering the above and the practical difficulties that are present, it would be an unnecessary and disproportionate burden on the site owners to propose a management plan that sought to bring about extensive change to the distribution of plant communities on site.
- A1.11 The main objectives of this management plan are to preserve the favourable habitat mix for GCN, by stopping the further spread of rushes, willow shrubs or brambles, retaining some areas of grass cover and enhancing the value of habitat features along the southern boundary.

A2.0 Managing rushes in the compensation area

- A2.1 The Google Earth images of the site and the nature of the rush cover strongly indicate that there was a cessation of grazing at least eight years ago and that rush cover was increasing before 2009. Dense rush cover with a thick litter layer may be suitable habitat for gcn, but it will result in increasing loss of structural and species diversity, which is likely to make the main part of the compensation area sub-optimal as foraging habitat. However, there would be serious practical difficulties in trying to achieve a major overall reduction in rush cover. Limited rush management combined with some other habitat improvement is likely to be the most effective, economic and proportionate basis for management.
- A2.2 Soft rush, *Juncus effusus*, is a widespread species globally and although a native species is recognised as an invasive in the UK, Denmark, Norway and parts of North America because of its impact on poorly drained grazing land and the difficulty of managing it once it becomes abundant. These matters are discussed as a global issue in a Wikipedia article (search '*Juncus effusus*'), and of particular relevance to the UK in Ashby, Wyatt et al. (2020), which provides a valuable overview and many references, in relation to a study of 300 sample plots in the West Pennine Moors SSSI, 91 of which were further studied using the time series of Google Earth images, and by ground truthing for 45 of these 91 plots. The plots are about 75km north east of the Bwlchgwyn site, situated within marginal grazing land generally between 200m and 330m altitude; the site is at 296m altitude. The appendices of the WPM report give OS co-ordinates for the plots that were studied. These can be located on the MAGIC website and then viewed on Google Earth; we believe the habitats in and around the site are very comparable to the WPM land.

A2.3 A number of publications, such as Cairns (2013) make recommendations over managing rush infestation, from an agricultural productivity viewpoint. There are also publications dealing with managing rush pasture for ground nesting birds, by conservation organisations such as RSPB (2017) We have not found any sources dealing with rush pasture management as habitat for great crested newts, but there are references to wetland habitat and related dense vegetation cover as favourable to them in Cresswell & Whitworth (2006) and Oldham et al. (2000). A summary of suggested rush management methods and the problems particular to this site follows:

- Mowing or topping works best when combined with grazing or spraying. Cutting through rush tussocks puts newts at risk, since they use tussocks for shelter. Similarly, the recommended close mowing, to 1cm height, would be very risky. Repeated mowing could result in soil compaction, improving conditions for rush growth.
- Spraying with Glyphosate reduces biodiversity and the adjutants in commercial mixes are likely to be harmful to amphibians; they are strong detergents. Using weed wipers rather than spraying is only effective in conserving diversity where other herbs are grazed down beforehand.
- Improving drainage together with well managed grazing is the most habitat friendly management, but this would involve excavation of ditches or drains, again a potential risk to gcn. The site is simply too small to provide more than about 20% of one cow's or 25% of one horse's requirement as continuous grazing without supplementary feed, and only certain hardy breeds are able to graze rushes effectively (from DEFRA upland grazing advice). Supplementary feeding at the necessary level in areas B or C would impact the biodiversity of the site, through much higher levels of dunging and poaching.

Annex 2, Additional Photographs – Adjacent Habitat

Views of site, plus adjacent habitat clockwise around the site and mitigation area.



Site viewed from Glascoed road, looking east
Compensation area is in centre of frame, horse shelter and willow belt are visible



Proposed residential caravan site, compensation area to rear

ANNEX 3: Schedule of work, Compensation area, Bwlchgwyn Traveller Site

PROCEDURE (Section 6.1)	YEAR	SEASON	ACTION	Action by	Monitoring and advice	Target
1 & 3	1	Start up	Fencing	Evans family	Camlad	Secure fence with gates between B & C Secure marker posts or fence between A & B
2	1	Start up	Pathway strim	Evans family	Camlad	Grass to 1m or 1.3m width strimmed to 125mm high, 4 to 6m in from southern boundary
4	1	Start up	Construct refugia	Evans family	Camlad	Two refugia, as 'GCN Mitigation Guidelines' design but against bank
5	1	Year 1 spring - summer	Place bat boxes	Habitat team	Camlad	Three durable bat boxes along South boundary, on trees or poles at least 2.5m above ground
6	1, then annually	Spring	Strim grassy areas & their margins	Habitat team	Camlad then Habitat team	Decrease in the proportion of rushes in grass swards, decrease or limit to rush and bramble dominated area.
2	1, then annually	Late spring through summer	Pathway strim	Evans family	Camlad	Grass to 1m or 1.3m width progressively strimmed to 75mm high, along pathway
7	1, then annually	Spring, autumn	Cut back or pull willow growth	Habitat team	Camlad then Habitat team	Prevent increase in willow dominated area.
8	Repeated, soon after procedures 2, 6 & 7	Spring / summer	Remove or stack arisings	Evans family & Habitat team	Camlad then Habitat team	Grass cuttings and shrub brash removed or stacked in ine location at lower end of site
9	1, then every 2 years	Spring, autumn	Cut out rhododendron growth, kill roots	Habitat team	Camlad then Habitat team	No active rhododendron growth within the whole site, roots treated if possible
10 & 11	1, then annual check	Early spring, or autumn	Tree planting and replacement if needed	Habitat team	Camlad then Habitat team	Small groups of trees spaced along southern boundary, including oak, rowan & birch
Review	Year 2, Year 5, 10, 15, 20	Late summer	Review progress and outcomes	Camlad then Habitat team	Camlad then Habitat team	Outcomes of all actions reviewed, plan revised for next two or five years

NOTES: see over

Schedule of work, Compensation area, Bwlchgwyn Traveller Site

Notes on procedures & teams

- Timing Start up - Actions to be taken before or as soon as possible after the site is occupied. These are non-seasonal operations.
Year 1 & annually or every two years: seasonal operations, starting in spring. Year 1 begins when the site is first occupied, unless that is after September, when it begins the following January.
- Teams Evans family: any of the intended permanent residents or any contractor employed by them, provided that they are advised by the nominated ecologist
Habitat team: Contactors such as Wild Ground, who are mainly and regularly employed in nature conservation work. Teams and companies mainly employed in conventional landscape work would not be suitable.
Camlad: Camlad Ecology Ltd. or E J Lomas, or another suitably qualified and experienced ecological consultant agreed by the Evans family and Wrexham council. The habitat team may take on the monitoring and advice role after two years, provided that they include a qualified ecologist.
- Actions Actions are as fully described in section 6 of the Habitat Management Plan, the table is a summary.

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