

Hiremade Furbs and Fifers 11 Ltd

Gatewen Colliery, Wrexham

**GREAT CRESTED NEWT MITIGATION STRATEGY –
BACKGROUND AND SUPPORTING INFORMATION**

February 2009

Background and Supporting Information

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A EXECUTIVE SUMMARY

- A1 The following mitigation strategy is to provide the baseline for a Protected Species Licence application for great crested newts *Triturus cristatus* (requested by the local Countryside Council for Wales office during discussions). The strategy provided is considered to allow the proposed development to be undertaken without significantly affecting the conservation status of great crested newt populations in the area. It outlines the proposals and potential impacts of the works and includes a proposed mitigation strategy and compensation measures.
- A2 This strategy covers site clearance and vegetation stripping, subsequent construction works and habitat creation/management of the subsequent proposed development. Mitigation will involve trapping-out (using one-way amphibian exclusion fencing with pitfall traps and refugia) followed by supervision of destructive searches. Enhanced habitat reserves will be created as will a GCN-suitable waterbody (to replace an existing GCN pond which is to be converted into a reedbed). Further enhancements on-site are to take place within proposed landscaped areas crossing the site. Areas of optimal and sub-optimal terrestrial habitat will be lost to the works.
- A3 The works proposed, together with the mitigation and compensation measures described within this strategy, should not result in a detrimental effect on the conservation status of the small (a single individual was observed, within a single pond on a single occasion) great crested newt population within the survey area, and it is considered unlikely that development will have a significant impact on the wider metapopulation. The scheme offers an improvement to existing habitats and creation of new habitats as part of the proposals.
- A4 No satisfactory alternative to the proposed works exist and the works are required for imperative reasons of overriding public (social and economic) interest. Changes in the development layout have been undertaken where feasible in order to minimise impacts on the local great crested newt population.

B INTRODUCTION

B1 Background to activity/development

B1.1 Faulks Perry Culley & Rech (FPCR) has been commissioned by Hiremade Furbs and Fifers 11 Ltd to carry out protected species work at the Gatewen Colliery site at Gatewen Road, Wrexham in response to planning conditions outlined in planning approvals BRO P/2008/1066 and BRO P/2007/0700. This report has been prepared to provide details of proposed mitigation and compensation works in relation to great crested newts (GCN) *Triturus cristatus*. Great crested newts have been recorded in one pond located within the northern section of the site (Figure C4.1).

B1.2 Following consultation with the local Countryside Council for Wales (CCW) office it was recommend that a protected species licence would be required in order to ensure the proposed development can proceed without harm or compromise to the favourable conservation status of great crested newts in the area. The strategy presented here forms the basis to the future licence application which will be determined by the Welsh Assembly Government.

B1.3 The site comprises a mosaic of habitats that have developed over former mine workings and is situated between Southsea and Stansby, approximately 1.2 km to the north west of Wrexham. Woodland and bare ground dominate the northern extent of the site, with significant areas of hardstanding associated with former colliery buildings within the central third. A grazed grassland compartment isolated at the southern extent of the site with a further open grassland compartment located within the western site area. Two waterbodies are located within the site, whilst an un-named watercourse runs along part of the eastern boundary (a dismantled railway line forms part of the western boundary).

B2 Full details of proposed works on site that are to be covered by the licence

B2.1 A single great crested newt has been recorded within one on-site pond (W2) (Figure C4.1) during surveys conducted in 2007. Proposals for the site involve a core area of built development with a large area of woodland being retained as open space along the eastern site boundary. A cycletrack with associated grassland corridor is to form the majority of the western boundary of the site. One on-site waterbody is to be turned into a reed bed whilst a new GCN-suitable pond is to be created within the northern part of the site.

- B2.2 A licence will be required to legitimise development of habitats within the site that are considered to potentially support GCN. The licensed work will involve trapping and/or hand searching, followed by destructive searches and translocation of any great crested newts found within the working area. A newt reserve/receptor site will be created in an area of secondary woodland that currently provides sub-optimal habitat for this species within the northern section of the site. Areas of optimal habitat including tussocky grassland, log piles and purpose-built hibernacula will be created within this area. Similar habitat creation measures will also take place within some retained woodland areas.
- B2.3 The reserve area will be surrounded by temporary amphibian fencing (TAF) prior to its enhancement following detailed hand searching of the area by suitably experienced ecologists. TAF fencing shall then be placed around the majority of the site within 500 m of the known GCN pond. Bucket traps will be placed every 5 – 10 m in all areas of GCN-suitable habitat to be affected by works enabling the area to be cleared prior to the commencement of works without risk of harm to GCN. All fencing will be inspected daily before 11.00 am for a 30-day trapping period (during suitable weather conditions) to be continued until 5 consecutive trappings days without finding great crested newts are achieved. Should any GCN be caught or found during the trapping/searches they will be relocated into the reserve area.
- B2.4 Once the trapping period has been completed destructive searches will be undertaken in all areas (apart from the reserve area) prior to the land being released for works. All operations will take place under the supervision of a suitably experienced ecologist. Any GCN that are caught or found during the trapping/searches will be relocated to the reserve area. Enhancement of some terrestrial habitat within the western section of the site (coppicing of trees, planting of scrub/grassland etc.) shall then take place.

- B2.5 Works within the GCN-pond on-site (W2) shall take place between mid-August and November at a time when any GCN using the pond for breeding will have left the aquatic habitat and moved to nearby terrestrial habitat. The pond will be slowly drained (during suitable weather conditions) with a fine mesh box fitted over the drain pipe/pump to prevent harm to any newts remaining within the pond. The pond bed will then be hand searched prior to de-silting with all spoil spread over a nearby GCN-free area prior to inspection by an ecologist to ensure no amphibians are present. The pond shall be converted into a reedbed. Concurrently a new pond shall be created with shallow-sloping areas where appropriate and native marginal and aquatic planting shall be introduced. This (and the provision of artificial egg-laying strips for the first year) will ensure the establishment of suitable GCN breeding habitat.
- B2.6 Semi-permanent fencing shall then be erected around the areas of site proposed for development and the majority of the TAF around the GCN reserve shall be removed. This shall give GCN access to additional enhanced terrestrial habitat and a suitable aquatic habitat in time for the following breeding season. The remaining TAF shall remain in place until all development works are complete, whereupon it shall be removed.

C SURVEY AND SITE ASSESSMENT

C1 Pre-existing information on great crested newts at the survey site

C1.1 Presence/absence surveys were undertaken by FPCR between March and June 2007. All water-holding ponds on site were surveyed. There were a number of ponds within 500 metres of the site boundary (Figure C4.1) but these were on private land and access permission for the purpose of survey could not be acquired.

C1.2 A consultation exercise was also completed. Responses from the Wrexham Biodiversity Group, the North East Wales Wildlife Trust and the National Biodiversity Network revealed the existence of great crested newt records within 2 km and data relating to the presence of additional waterbodies within 500 m of the site boundary.

C1.3 An extended Phase 1 habitat survey undertaken by FPCR during spring and summer 2007 also identified potentially suitable habitat for GCN.

C2 Status of great crested newts in the local/regional area

C2.1 Records provided by the National Biodiversity Network show numerous records of GCN within the Wrexham area.

C3 Objectives of survey

C3.1 Suitably qualified ecologists from FPCR undertook surveys with objectives to:

- Identify the majority of water bodies within 500 m of the proposed development site (where full access was available)
- Confirm presence/absence of great crested newts within these waterbodies
- Identify status of ponds (i.e. breeding or non-breeding) if possible
- Establish a population size class assessment where GCN's were identified

C4 Map of Survey Area

C4.1 Figure C4.1 Extended Phase 1 Habitat Plan

C5 Site/Habitat Description

C5.1 The survey area corresponds to the whole site area proposed for development. Site conditions comprised a mosaic of habitats that have developed over former mine workings (Figure C4.1). Woodland and bare ground dominated the northern extent of the site, with significant areas of hardstanding associated with former colliery buildings within the central third. A grazed grassland compartment was located at the southern extent of the site whilst a further open grassland compartment was located within the western site area.

C5.2 Two waterbodies were located within the site boundary, whilst an unnamed watercourse followed part of the edge of the eastern boundary. A dismantled railway line formed the western perimeter of the site.

C5.3 A total of 2 ponds (Ponds W1 & W2) were surveyed by FPCR during 2007. Additional water bodies present within 500 m could not be surveyed due to the lack of access to third party land.

Aquatic Habitat

C5.4 *Waterbodies*

C5.4.1 W1 was a temporary water feature (water was only observed during a single survey in December 2008), approximately 6 m in diameter, located within the western grassland compartment. Much of the pond was over-shaded by adjacent hawthorn *Crataegus monogyna* scrub, restricting the presence of aquatic and marginal vegetation to localised patches of creeping bent *Agrostis stolonifera* and creeping buttercup *Ranunculus repens* within shallow embankments.

C5.4.2 W2 was a pond, measuring approximately 30 x 12 m, situated within woodland located at the northeastern corner of the site. This was heavily-shaded by the surrounding woodland canopy and was devoid of marginal and aquatic vegetation, with only large quantities of leaf debris and fallen branches present. It was susceptible to flood during periods of increased flow of the adjacent watercourse (W3) and periods of increased surface run-off.

C5.4.3 Habitat Suitability Index scores for the two ponds were calculated following the methodology of Oldham *et al.* (2000). The results are shown below.

Pond reference	W1	W2
SI1 - Location	1	1
SI2 - Pond area	0.01	0.4
SI3 - Pond drying	0.1	0.9
SI4 - Water quality	0.01	0.33
SI4 - Shade	0.2	0.2
SI6 - Fowl	1	1
SI7 - Fish	1	1
SI8 - Ponds	0.8	0.8
SI9 - Terrestrial habitat	1	1
SI10 - Macrophytes	0.35	0.4
HSI	0.24 (poor)	0.61 (average)

C5.5 *Stream*

C5.5.1 W3 was a stream flowing southwards along part of the eastern boundary of the survey area. The channel profile was shallow, ranging in width from 2 to 5 m with a depth no greater than 0.25 m. Channel and banks were formed from shale/spoil material and were generally devoid of vegetation, with the exception of the presence of mosses on exposed rocks and fallen deadwood. The highly eroded nature of the margins, with flood debris suggests that the stream was subjected to frequent periods of increased flow.

C5.6 *Off-site waterbodies*

C5.6.1 Additional waterbodies located within 500 m of the site include a number of ponds located within Moss Valley CWS adjacent to the northern site boundary and wetland habitats within Gatewen Marsh SSSI located adjacent to the south-eastern boundary of the proposed development site. A further waterbody was located approximately 200 m to the east of the site. Access to these additional waterbodies could not be gained.

Terrestrial habitat

C5.7 *Artificial (Hardstanding/Spoil)*

- C5.7.1 Large areas of hardstanding and bare ground occupied the majority of the site where former workings existed. Concrete slab and spoil had been encroached in numerous places by patches of vegetation. These consisted of ephemeral/short perennial herbs, species-poor semi-improved grassland, ruderal species and scattered scrub.

C5.8 *Short Perennial/Ephemeral Vegetation*

- C5.8.1 Short ephemeral/perennial vegetation communities had established over areas of hardstanding and bare ground throughout the site. These communities lacked a dominant species, comprising of a diversity of low-growing herbs, grasses and moss species. Species commonly recorded included annual meadow-grass *Poa annua*, common centaury *Centaureum erythraea*, common bird's-foot trefoil *Lotus corniculatus*, creeping buttercup, rough hawkbit *Leontodon hispidus*, mouse-ear-hawkweed *Pilosella officinarum* and red fescue *Festuca rubra*.

C5.9 *Ruderal Vegetation*

- C5.9.1 Areas of ruderal vegetation were scattered throughout the site, particularly in association with the margins of the disused railway embankment. Typically these contained an abundance of tall herb species, including common nettle *Urtica dioica*, creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare* and rosebay willowherb *Chamerion angustifolium* intermixed with broad-leaved grasses, common forbs and locally dominant common ivy *Hedera helix*. Species recorded included broad-leaved dock *Rumex obtusifolius*, cock's-foot *Dactylis glomerata*, Yorkshire-fog *Holcus lanatus*, creeping bent, cow parsley *Anthriscus sylvestris*, cleavers *Galium aparine* and dandelion *Taraxacum agg.*

C5.10 *Broad-Leaved Woodland (Secondary)*

- C5.10.1 The majority of the woodland covering the northern extent of the site was self-seeded, having developed since the closure of the colliery. The young canopy comprised silver birch *Betula pendula*, sycamore *Acer pseudoplatanus*, pedunculate Oak *Quercus robur* and goat willow *Salix caprea*.

- C5.10.2 Characteristically for secondary woodland both the shrub and ground layer were both under-developed and sparse, comprising scattered hawthorn, holly *Ilex aquifolium* and sapling canopy species. The ground layer consisted of locally dominant common ivy and bramble *Rubus fruticosus* agg. with scattered tussocks of red fescue and species more indicative of shaded conditions, including wood avens *Geum urbanum*, broad-buckler fern *Dryopteris dilatata* and male-fern *Dryopteris filix-mas*.
- C5.10.3 Along the eastern boundary of the site the woodland extended over a spoil heap, rising to approximately 40 m. The canopy was similar in character to that noted above, although with the addition of ash *Fraxinus excelsior* and a single mature field maple *Acer campestre*. The shrub and field layer were both species-poor and under-developed and comprised locally dominant elder *Sambucus nigra* with occasional dog-rose *Rosa canina*, hawthorn and broom *Cytisus scoparius*. The ground-layer comprised largely bare ground with scattered patches of bramble, bracken *Pteridium aquilinum*, common ivy, common nettle and ephemeral/short perennial vegetation.
- C5.11 *Broad-Leaved Woodland (Semi-Natural)*
- C5.11.1 Areas of semi-natural woodland were present along the northern (TN 1) and western (TN2) boundaries of the site (Figure C4.1). The canopy was dominated by mature sycamore with occasional ash and pedunculate oak, many covered by common ivy. The shrub layer, though still sparse in character exhibited a different species composition to that of the secondary woodland, containing field maple and holly, whilst gooseberry *Ribes uva-crispa* and field-rose *Rosa arvensis* were recorded upon the upper reaches of the embankment. The sparse ground layer contained a number of species associated with 'ancient woodland' and included bluebell *Hyacinthoides non-scripta*, hart's-tongue *Phyllitis scolopendrium*, scaly male-fern *Dryopteris affinis*, dog's-mercury *Mercurialis perennis*, lords-and-ladies *Arum maculatum*, sanicle *Sanicula europaea* and barren strawberry *Potentilla sterilis*.

C5.12 *Species-Poor Semi-Improved-Grassland*

- C5.12.1 The western field compartment comprised species-poor neutral grassland. The grassland was typical of abandoned pasture being rank and dominated by a limited number of grass species, including Yorkshire-fog and creeping bent, with locally dominant cock's-foot. Other grass species recorded at lower frequencies included timothy *Phleum pratense* and crested dog's-tail *Cynosurus cristatus*.
- C5.12.2 The diversity of herb species within the sward was generally restricted to locally abundant tall ruderals and occasional common forbs. Of these, creeping buttercup, broad-leaved dock, cow parsley and ribwort plantain *Plantago lanceolata* were the most abundant, with locally abundant common nettle and creeping thistle recorded within the field margins. Other herb species recorded at lower frequencies included meadow buttercup *Ranunculus acris*, yarrow *Achillea millefolium*, common sorrel *Rumex acetosa* and pignut *Conopodium majus*.
- C5.12.3 The southern grassland compartment had been subjected to high levels of horse grazing and as such the sward exhibited poor species diversity being dominated by limited number of grass species, including Yorkshire-fog, creeping bent and perennial rye-grass. The presence of herb was restricted to occasional common forbs including dandelion, creeping buttercup and common mouse-ear *Cerastium fontanum*.
- C5.12.4 Further areas of species-poor neutral grassland had developed along the disused railway embankment along the western extent of the site. Again, the sward was dominated by a limited diversity of broad-leaved grasses with frequent common forbs and locally dominant tall herbs and occasional patches of short perennial/ephemeral vegetation recorded associated with desire lines. Yorkshire-fog was the most abundant grass along with creeping bent. Other grasses included frequent perennial rye-grass, red fescue, cock's-foot and occasional smooth meadow-grass *Poa pratensis*. Of the herbs ribwort plantain, creeping buttercup and common ragwort *Senecio jacobaea* were the most abundant. Common knapweed *Centaurea nigra* was locally abundant, whilst less frequently recorded species included common vetch *Vicia sativa*, rough hawkbit *Leontodon hispidus*, common bird's-foot trefoil and dove's-foot crane's-bill *Geranium molle*.

- C5.13 *Scattered / Continuous Scrub*
- C5.13.1 Areas of scattered scrub were frequent throughout the site and recorded in association with areas of abandonment, particularly along the disused railway embankment. Species present included alder *Alnus glutinosa*, goat willow, silver birch, hazel, broom and ash.
- C5.14 *Hedgerows*
- C5.14.1 Two hedgerows (H1 & H2) were located enclosing the northern and western boundaries of the northern grassland compartment, whilst a further short section of hedgerow (H3) was located along the south-eastern boundary of the site.
- C5.14.2 H1 was outgrown and unmanaged, measuring approximately 6 m high by 4 m wide. The canopy was dominated by hawthorn and contained frequent tree standards of sycamore and ash. Additional species recorded within the canopy included; holly, pedunculate oak, elder and dog-rose. Associated ground flora included lords-and-ladies.
- C5.14.3 H2 was approximately 6 m high by 5 m wide and extremely outgrown and gappy in nature. The canopy consisted of frequent hawthorn separated by sections of stone wall. Additional occasional canopy species included elder, dog-rose, holly, hazel and garden privet *Ligustrum ovalifolium*. The hedgerow also contained two mature hawthorn standards, the canopy of both of which were clothed by common ivy. The associated ground flora included lords-and-lades and dogs mercury.
- C5.14.4 H3 was approximately 15 m high by 4 m wide and dominated by conifer *Leylandii*.
- C6 Field Survey**
- C6.1 Methods
- C6.1.1 All surveys were undertaken in accordance with the Great Crested Newt Mitigation Guidelines (English Nature, 2001). On each occasion three different techniques (combinations of egg searching, sweep netting, bottle-trapping and torching) were used wherever possible (refer to Table 1).
- C6.2 Timing
- C6.2.1 A total of 6 visits to the majority of waterbodies within the survey area were performed between mid-March and mid-June 2007.

C6.2.2 Pond W1 could not be surveyed using any of the prescribed methods as it held no water during all six survey visits.

C6.3 Weather conditions

C6.3.1 All surveys were carried out during suitable weather conditions, i.e. with the ambient air temperature above 5°C and little/no wind or rain.

C6.4 Personnel

C6.4.1 The survey work was carried out by Daniel Foster (GCN licence holder), Oliver Ramm (GCN licence holder), Abigail Bridge (accredited agent of a GCN licence holder) and Timothy Hvall (accredited agent of a GCN licence holder).

C7 Results

C7.1 The survey data for Pond W2 is presented in Table 1. Surveys could not be conducted within the other waterbody on site (W1) due to its dry nature and access to other off-site waterbodies could not be gained.

Table 1. Summary of Newt Surveys of Pond W2 in Date Order

DATE	SURVEY METHOD	GCN's				PALMATE Newts			
		Male	Female	Unknown	Max Count	Male	Female	Unknown	Max Count
02/05/07	Torching	0	1	0	1	0	9	0	9
	Bottle Traps	0	0	0		2	6	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			
03/05/07	Torching	0	0	0	0	4	19	0	23
	Bottle Traps	0	0	0		0	2	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			
23/05/07	Torching	0	0	0	0	1	34	0	35
	Bottle Traps	0	0	0		3	5	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			
30/05/07	Torching	0	0	0	0	10	34	0	44
	Bottle Traps	0	0	0		1	3	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			
31/05/07	Torching	0	0	0	0	10	20	0	0
	Bottle Traps	0	0	0		2	1	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			
04/06/07	Torching	0	0		0	13	18	0	31
	Bottle Traps	0	0	0		2	3	0	
	Netting	0	0	0		0	0	0	
	Egg search	N				N			

N = Technique not used.

C8 Interpretation and evaluation

C8.1 Presence/absence

C8.1.1 During the 2007 survey season the presence of great crested newts was confirmed within a single waterbody on site (W2). Ponds within 500 metres of the site boundary were not surveyed as these are on private land to which access was refused.

- C8.2 Population size class assessment
- C8.2.1 The population size class assessment as defined within the English Nature guidance (August 2001) is as follows:
- Small – for maximum counts up to 10
 - Medium – for maximum counts between 11 – 100
 - Large – for maximum counts over 100
- C8.2.2 Surveyed ponds within the proposed development site, can therefore be considered to support a small population of great crested newts as only a single individual was found on a single survey occasion.
- C8.2.3 The above classification is a broad category used to indicate the comparative status and importance of a population, which has also informed consideration of the level of impact development may cause as well as having implications with regard to requirements for mitigation and compensation.
- C8.3 Site status assessment
- C8.3.1 Quantitative assessment based on the available survey data from 2007 indicates that a very small population of great crested newts are present within the proposed development site.
- C8.3.2 Qualitative assessment of the habitat available within the site indicates that great crested newts are likely to be distributed at a very low population density across the survey area. The single permanent waterbody on site (W2) is considered of average suitability as it was heavily-shaded by the surrounding woodland canopy with minimal marginal and aquatic vegetation. Limited areas of suitable terrestrial habitat are present on site in the form of the woodlands and areas of semi-improved grassland, however, large areas of the site were dominated by ex-mining works including hardstanding and buildings.
- C8.3.3 Connectivity to the wider area is provided by the woodland surrounding the pond W2. Fragmentation due to this development will be limited as the only population recorded on site was found within one pond in the northern section of the site. Connectivity across the site shall be provided by large areas of retained woodland and additional enhanced habitat.

C8.4 Constraints

- C8.4.1 The results could be strengthened by survey of other ponds outside the site. However, the lack of survey data for surrounding ponds, will not affect the overall strategy.

D IMPACT ASSESSMENT

D1 Short-term impacts: disturbance

D1.1 Site clearance and re-grading works of terrestrial GCN-suitable areas could result in the death and injury of GCN. Enhancement works on the on-site GCN aquatic habitat could also result in an increased likelihood of mortality. During development the stockpiling of building materials could result in the formation of habitat suitable for GCN refugia. However, any GCN using such habitat would be at a high risk of mortality due to the transient nature of such areas and high levels of disturbance.

D2 Long-term impacts: site modification

D2.1 The proposed development works could result in the conversion of currently GCN-suitable habitat into areas of building and hardstanding as well as residential gardens that may offer habitat of low suitability for this species. A currently sub-optimal temporary waterbody for GCN (W1) is to be lost, however, the conversion of a sub-optimal pond (W2) into a reedbed and the provision of a new GCN-suitable waterbody would result in an overall increase of suitable aquatic habitat for this species.

D3 Long-term impacts: site loss

D3.1 The habitat on site currently provides large areas of semi-improved grassland (the majority of which is to be lost) woodland (the majority of which is being retained) and hardstanding/buildings. Proposals include the provision of enhanced terrestrial habitat. It is considered that a small population of GCN is potentially using the site. No records of GCN were received from within the local area. Whilst some of the habitats present on site are suitable for GCN they are not rare or uncommon within the wider area. It is therefore considered that the proposed habitat loss would have a **negligible** affect at the **2 km, 10 km, local, regional** and **national** level.

D4 Long-term impacts: fragmentation and isolation

D4.1 The proposed construction of a number of infra-structure roads and the removal of some areas of suitable terrestrial habitat could result in severance of possible migration routes across the site. Further potential barriers to dispersal in the form of buildings and associated hardstanding could also reduce levels of movement across the site. However, the retention of large areas of woodland and the enhancement of existing on-site habitat will provide more suitable commuting routes than that currently provided by the existing areas of bare ground and sparse scrub cover.

D5 Post-development interference impacts

D5.1 The increased level of disturbance from human pressure as a result of the proposed residential development could result in an increased level of mortality due to predation by domestic pets or death from increased traffic usage of the site. The presence of drainage gullies and high kerbs could also result in further death/injury (although the likelihood of this is considered very low based upon the terrestrial habitat retention and the low population density of GCN within the site).

D6 Predicted scale of impact

D6.1 A small population of GCN was confirmed using a single, waterbody on site. The overall site density of this species is considered to be very low. The predicted scale of impact on this population (in the absence of mitigation) at a **site** level is considered to be **low adverse**. At the **2 km, 10 km, local, county, regional** and **country** level any impact resulting from the proposed works is considered to be **negligible**. Table 2 provides a summary of the proposed impacts.

Table 2 - Summary of impacts

Habitat feature	Disturbance effect	Overall Scale of Impact
GCN Pond (W2)	Pond to be converted to a reedbed. A new GCN-suitable waterbody to be created nearby and linked via a habitat corridor to suitable habitat to the north and west of the site.	Low positive
Immediate (<50 m) and intermediate (50-250 m) terrestrial habitat from Pond W2.	Permanent destruction of terrestrial habitat. No fragmentation predicted due to lack of waterbodies within the southern section of the site and no known GCN population off site.	Low adverse
Distant terrestrial habitat (>250 m) from breeding Pond W2.	Permanent destruction of terrestrial habitat with the provision of additional suitable habitat in the form of public open space. No fragmentation predicted due to lack of waterbodies within the southern section of the site and no known GCN population off site.	Negligible

E LAND OWNERSHIP – MITIGATION SITE

E1 Mitigation site ownership

- E1.1 The mitigation site and all areas where works are proposed are owned by the proposed developers of the site Hiremade Furbs and Fifers 11 Ltd.

F REFERENCES

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Oldham, R. S., Keeble, J., Swan, M. J. S. & Jeffcote, M. 2000. Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal Vol. 10, pp 143-155.

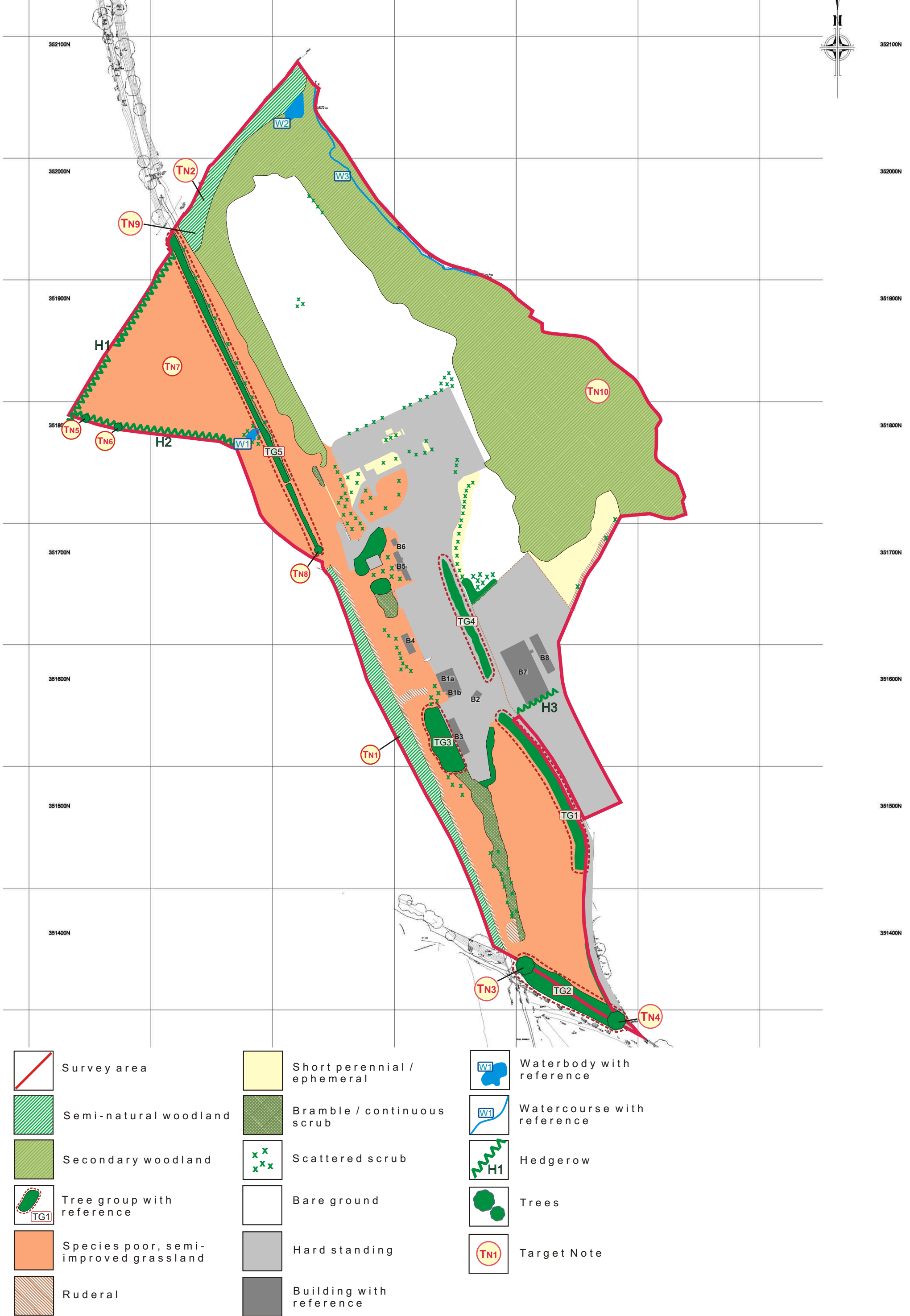


Figure C4.1 - Phase 1 Habitat Plan (Not to Scale)

Hiremade Furbs and Fifers 11 Ltd
 Gatewen Colliery, Wrexham
 February 2009