

# Biodiversity Management Plan

Woolley Colliery Road, Darton  
Gleeson

Report Ref: ER-8088-03A

July 2025

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Report Reference:	ER-8088-03A
Written by:	Christopher Shaw BSc (Hons) MCIEEM Associate Ecologist
Technical review:	Peter Brooks BSc (Hons) MA, MCIEEM, CEnv Managing Director
QA review:	Charlie Foreman BSc (Hons) Assistant Ecologist
Approved for issue:	Christopher Shaw BSc (Hons) MCIEEM Associate Ecologist
Date:	15/07/2025

# Introduction

The following Biodiversity Management Plan (BMP) has been produced for Gleeson to demonstrate how mitigation and enhancement measures can be designed into their residential scheme at Woolley Colliery Road in Darton, Barnsley

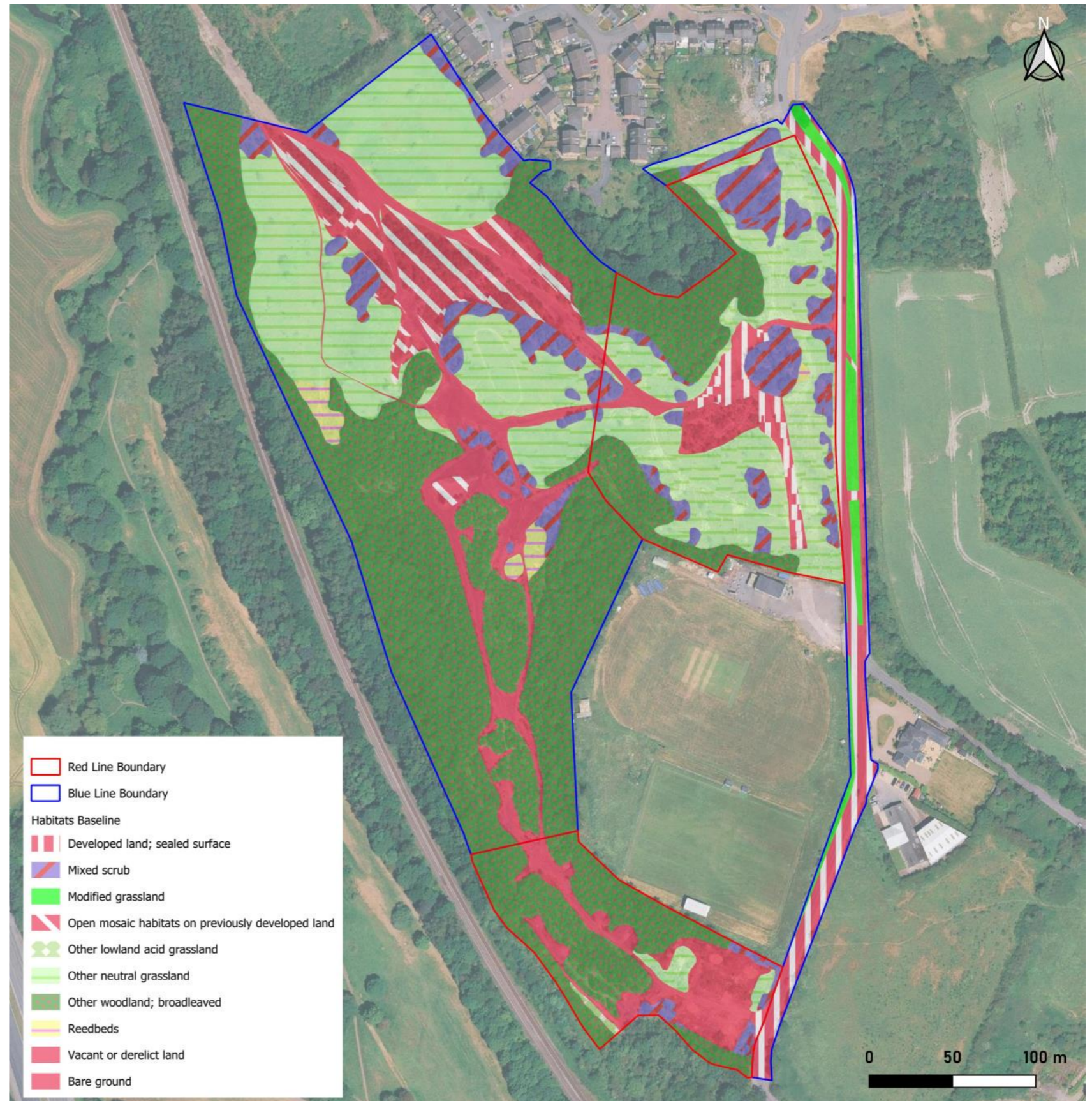
The following document aims to set out opportunities and outlines potential locations for mitigation and enhancements measures, but is by no means meant to be prescriptive. This document should give the Local Authority confidence when making their decision that Ecological issues on Site are being given due consideration and can be adequately addressed on Site, either within the red line boundary, or within extensive blue line land under the client's control.

The Site's Ecological baseline is presented in Brooks Ecological reports ER-8088-01 & 02. Information from these reports will be used to inform this BMP.



◀ Red & Blue line boundaries

Baseline habitats mapped to UK Habitat Classification ▶





# Key Constraints

## Invertebrates

The main Ecological Constraint is the Site's invertebrate assemblage, including four 'important' species, as identified during an Invertebrate Assessment undertaken by Conops Entomology Ltd in 2019.

Based on the survey information collected and through consultation with the Local Planning Authority Ecologist, the Invertebrate interest is considered to be of County Importance. This is based on the presence of dingy skipper (*Erynnis tages*), small heath butterfly (*Coenonympha pamphilus*), small blue (*Cupido minimus*) and leaf beetle (*Longitarsis dorsalis*). Two other species (alder leaf beetle and fruit-fly) were also recorded on site, however these do not warrant their current status and are likely to be downgraded.

Other surveys undertaken by local enthusiasts has also identified a good assemblage of more common butterfly species, which together would qualify the Site as a candidate for designation as a Local Wildlife Site.

## Common Lizard ●

A population of Common lizard present on Site (red and blue line land) as well as within the wider colliery to the north. These were most recently recorded in September 2024 by SLR.

## Bats

Bat Activity surveys were undertaken by SLR in 2024. Common pipistrelle was the most frequently encountered bat species on Site (82%), associated primarily with edge habitat. Overall, activity was considered to be low, and the Sites importance to the local population was similarly considered low.

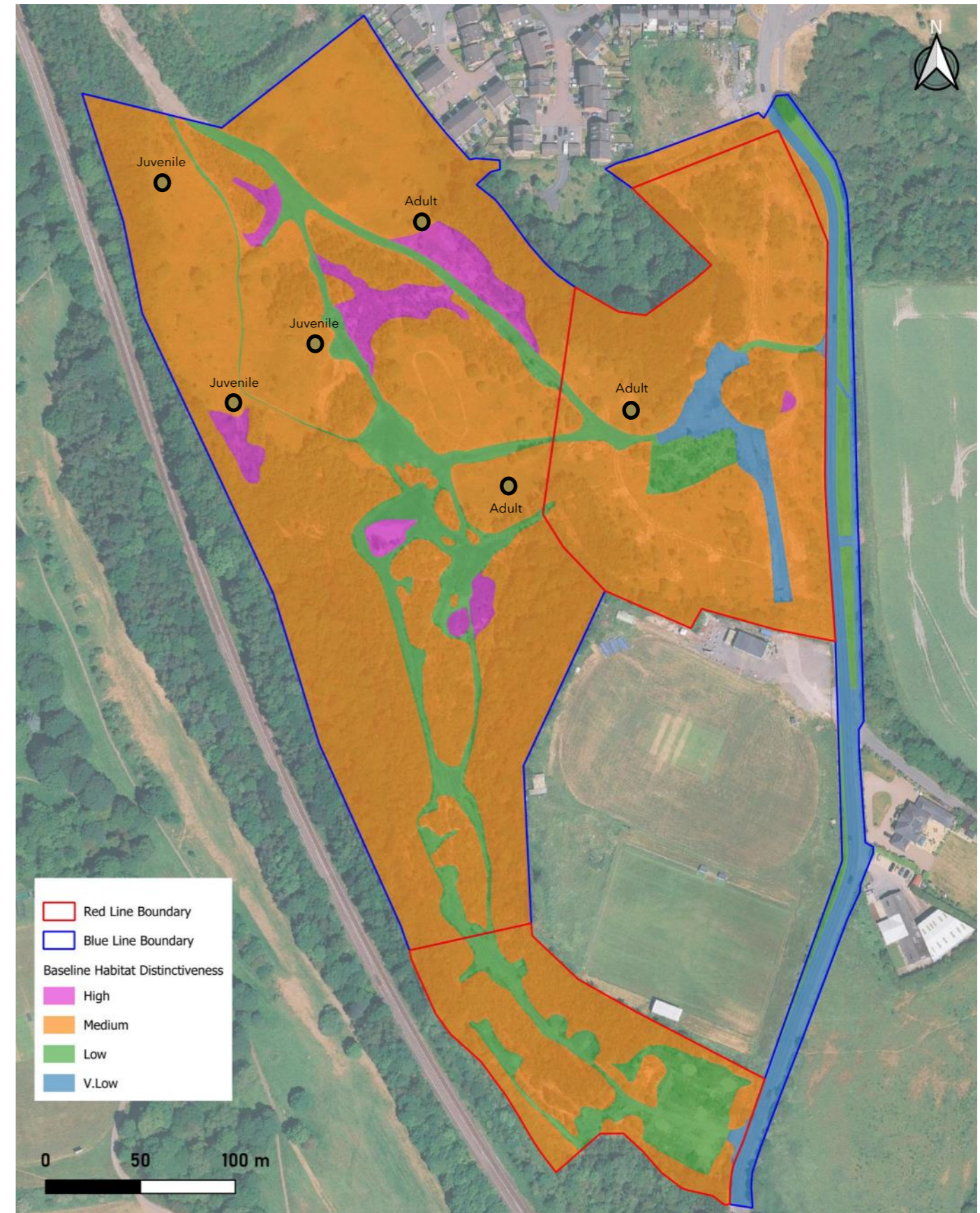
Other species recorded on Site at lower incidents included Noctule (5%), Soprano pipistrelle (5%), Myotis spp. (4%), Leisler's (3%) and brown long-eared (1%).

## Existing Habitats

The Site currently supports a mix of 'medium and high distinctiveness' habitats, including grassland (mostly moderately diverse neutral, but with elements of acid and calcareous influence), scrub and deciduous woodland. Blue line land also supports reedbeds and areas of open mosaic habitat.

## Biodiversity Net Gain

Under the Environment Bill (2021) there is now a legal requirement that all developments need to demonstrate a 10% net gain.



# Small Blue Butterfly (Population overview)

## 2018 Monitoring Surveys

The local Butterfly recorder (Alwyn Timms) carried out 10 surveys between 11th May and 11th July 2018 on four distinct sites containing Small Blue. Sites 1 & 2 fall within Barnsley and represent the Application Site. Sites 3 and 4 fall within Wakefield. The table below summarises the results. Site 4 is described as the core habitat for the Small Blue population, with an abundance of Kidney Vetch, and the greatest number of adults. The other three sites surveyed have much smaller amounts of kidney vetch, and represent peripheral populations.

A further 7 visits were undertaken on Site's 1 and 2 (the application Site) between 16th July and 29th August 2018, at the request of the previous LPA Ecologist (Trevor Mayne). This found evidence of a second brood on Site 2, with a max count of 11 adults. Results are summarised in the table below .

## 2019 Conops Entomology Survey

A dedicated invertebrate survey was undertaken in 2019, in support of a previous planning application at the Site. The following summarises were provided for the Site.

Site 1 (southern parcel) – A discrete colony of small blue is present along the roadside bund. Only **five or six** individuals were recorded during the June visit. This is thought to be reflective of the colony size given the limited resource of kidney vetch in this compartment.

Site 2 (northern parcel)- The presence of the small blue butterfly is the most significant species on the compartment. It is, however, only present on one small area of the compartment. This is an access track bund and southerly aspect slope, where a small number of kidney vetch plants grow. The colony is small, with **seven to nine** individuals recorded in the June visit, and as the resource of kidney vetch is reasonably small, the colony therefore could be described as fragile.

## Current Status

Updating surveys are currently underway in 2025. Since 2019, a lack of management in all four Sites has allowed habitats to grow rough and begin to scrub over. Kidney vetch is now a diminishing resource in all of four areas.

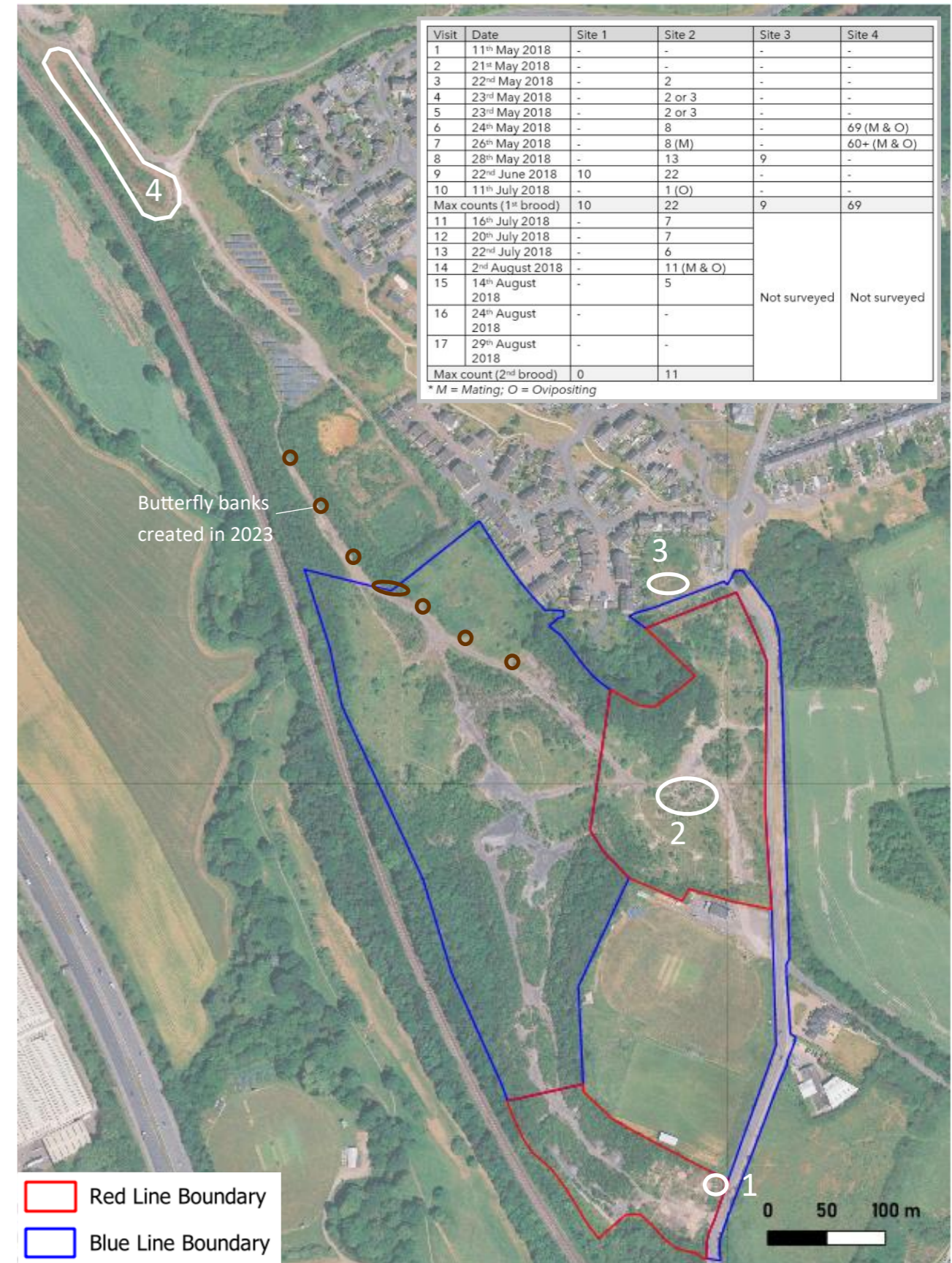
Small fragments of Kidney vetch remain on site in areas 1 & 2, however, some mature plants from area 2 have been transplanted to a series of 7 butterfly banks that were created on the blue line land in 2023.

Site 3 has been granted planning permission for residential development, with no provision for Butterfly mitigation required by Wakefield District Council.

The core habitat (Site 4) was heavily scrubbing over at the point that Brooks Ecological became involved in the project in early 2022. In 2023, the previous developer (Rouse Homes), in co-ordination with the Yorkshire Butterfly Conservation Trust (YBCT) undertook some conservation scrub clearance in this area. This will need to be repeated in the next 12 months.

Without a Strategic approach to butterfly mitigation being put in place for the Site, Small Blue, and many of the other notable butterfly species, will naturally be lost from the Site in the coming years, regardless of whether the Site is developed or not.

Development of the Site can therefore be seen to provide a mechanism by which to secure this much needed long-term mitigation, which would secure a future for Small Blue and other notable invertebrate species at the Site.



# Opportunities and Themes



## Notable Invertebrates

Habitat creation will seek to provide the specific conditions required for notable invertebrates to breed and expand on Site, such as the small blue, small heath and dingy skipper butterflies.

This will include promoting the spread of larval food plants such as kidney vetch within calcareous grassland and common birds foot trefoil and fine grasses.



## Homes for declining birds & bats

New builds often fail to provide opportunities for nesting birds and roosting bats, with the eaves and verges being well-sealed.

A wide range of designs are now available on the market which can either be fixed to the masonry, or built discreetly into the fabric of new walls.



## Woodland

New woodland planting, within areas of naturally dry and wet ground, will provide high value habitat for a wide range of faunal groups, providing food, shelter and improving connectivity through the landscape. Woodlands also provide eco-system services such as reducing flood risk and capturing carbon.

## Wildflower grassland

Areas of naturalistic wildflower meadow, sown and managed within areas of POS, can provide high value habitat for groups such as invertebrates, and create an impressive backdrop to the development.



## Deadwood & Refugia's

Woodlands make better habitats where deadwood can accumulate, wood chippings spread on woodland floors are slowly broken down by fungi, wood piles make homes for invertebrates, reptiles and small mammals.

They also slow the release of carbon into the atmosphere.



# Neutral Grassland (Preparation / Creation)

## Specification

### Preparation (retained grassland–BLUE LINE)

This covers grassland retained within the Blue line area.

Grassland to be cut hard (10-20mm cutting height) and scarified in October, with all cuttings/ thatch to be collected and removed. Aim will be to create 50% bare ground to vegetation ratio.

All scrub within this area to be fail mown or cut using hand tools (depending on size).

### Preparation (new soils–RED LINE)

This covers any 'made ground areas', where habitat and soils have been removed during construction, and are re-instated as part of landscaping operation. This covers land within the red line boundary.

No more than 5cm of topsoil will be spread over the subsoil profile. Spread using back actor, spread and firmed. Not driven over and compacted. IMPERATIVE: all soil handling and spreading to be supervised and sanctioned by ECoW- failure is very likely if not.

### Seed mixes

The following seed mixes, or suitable alternatives as approved by the ECoW, will be used. Areas to be sown with each seed mix are shown in the figure opposite.

Emorsgate EM2 - General Purpose Meadow mix

Emorsgate EM8 - Wet Meadow Mixture

Retained grassland areas will be seeded with Yellow rattle.

### Sowing

Seed according to supplier's instructions.

If soils have been spread before September, any weed growth that has established in the meantime will be sprayed off with glyphosate and a seedbed be re-prepared.

Seed will either be broadcast by hand or by approved lightweight machinery at c. 40kg/ha.

Following seeding, the area will be lightly rolled to incorporate the seed with the growing substrate.



# Grassland (Establishment & Management)

## Management

Management will be targeted at the relevant DERA Metric condition criteria.

### Year 1–Newly created grassland types

Five cuts, collect arisings and remove from Site.

Use a weed wipe three times in year 1 to kill off weeds - spear thistle, creeping thistle, broad-leaved dock, clustered dock, wood dock, curled dock, nettle, ragwort, and others, according to ECoW recommendations. Operatives must be proven competent in weed identification.

### Year 1–Retained grassland

Up to two cuts, once in September and again in October if required. Collect and remove arisings - store onsite in rot pile. Continue to spot treat competitive weed species each year until under control according to ECoW.

### Year 2 onwards

#### Road verges around residential development

Cut once per month during the growing season, leave for 5 weeks in June. Arisings may be left to rot *in situ* unless condition is deteriorating.



#### Land within the blue line

Two cuts, once in August and again in October—remove arisings. Continue to spot treat competitive weed species each year until under control according to ECoW.



#### Scrub Management

Scrub will be flail mown or removed using hand tools from within the grassland areas.

## Monitoring

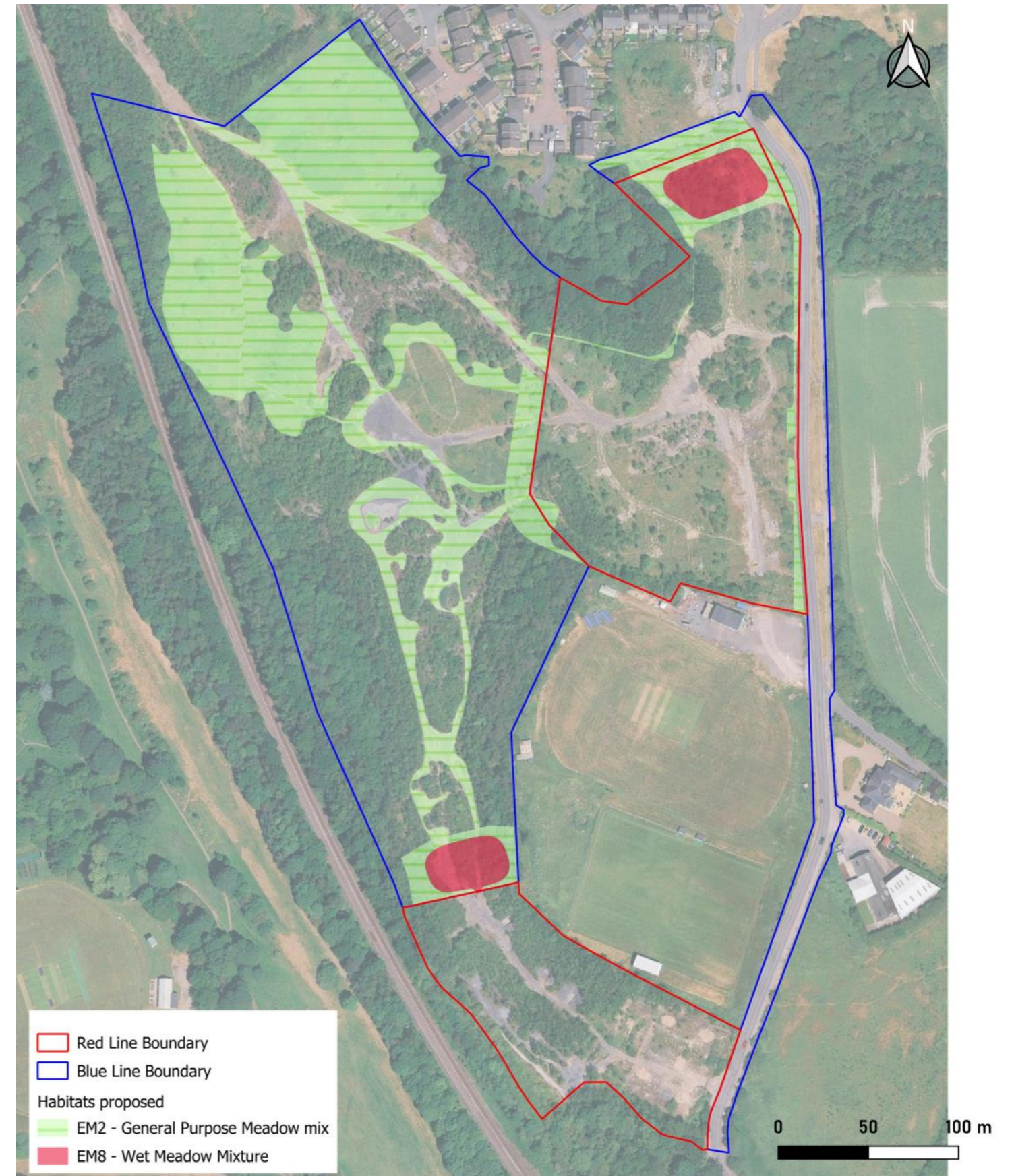
Ecological Clerk of Works year 2 and 5 monitoring visit to check trajectory to condition requirement.

### Output

ECoW report year 2 and 5.

### Remedial action options

- Increase weed control if undesirable species establish (inc. scrub)
- Soil scrape to reduce nutrients
- Re-seed and replant locally



# Open Mosaic Sward (Creation & Management)

## Rationale

Existing areas of OMH will be enhanced through targeted management, whilst new areas of OMH will be created in the centre of the blue line land. Together, these will provide compensatory habitat for notable invertebrates, such as the Small Blue.

## Specification

### Preparation (existing enhanced)

All scrub and small trees from these areas will be cleared and used to create log piles elsewhere on Site.

### Preparation (newly created)

Patches within the uniform grassland will be scraped away to reveal the thin, poor subsoils, and new extraneous material from within the red line land brought into these areas to create a varied topography.

### Seed mixes

A mosaic of fine-leaved grasses and a range of flowering plants are required to fulfil the requirements of the open mosaics. It is likely that a commercially sourced seed mixture may not be suitable, but a bespoke mix should be specified to include the following species:

- common bird's-foot trefoil (*Lotus corniculatus*)
- hawkbits (*Leontodon spp.*)
- hawkweeds (*Hieracium spp.*)
- kidney vetch (*Anthyllis vulneraria*)
- labiates (*Lamiaceae*)
- meadow vetchling (*Lathyrus pratensis*)
- mignonettes (*Reseda spp.*)
- other trefoils (*Fabaceae*)
- other vetches (*Vicia spp.*)
- red clover (*Trifolium pratense*)
- St. John's wort (*Hieracium spp.*)
- wild carrot (*Daucus carota*)

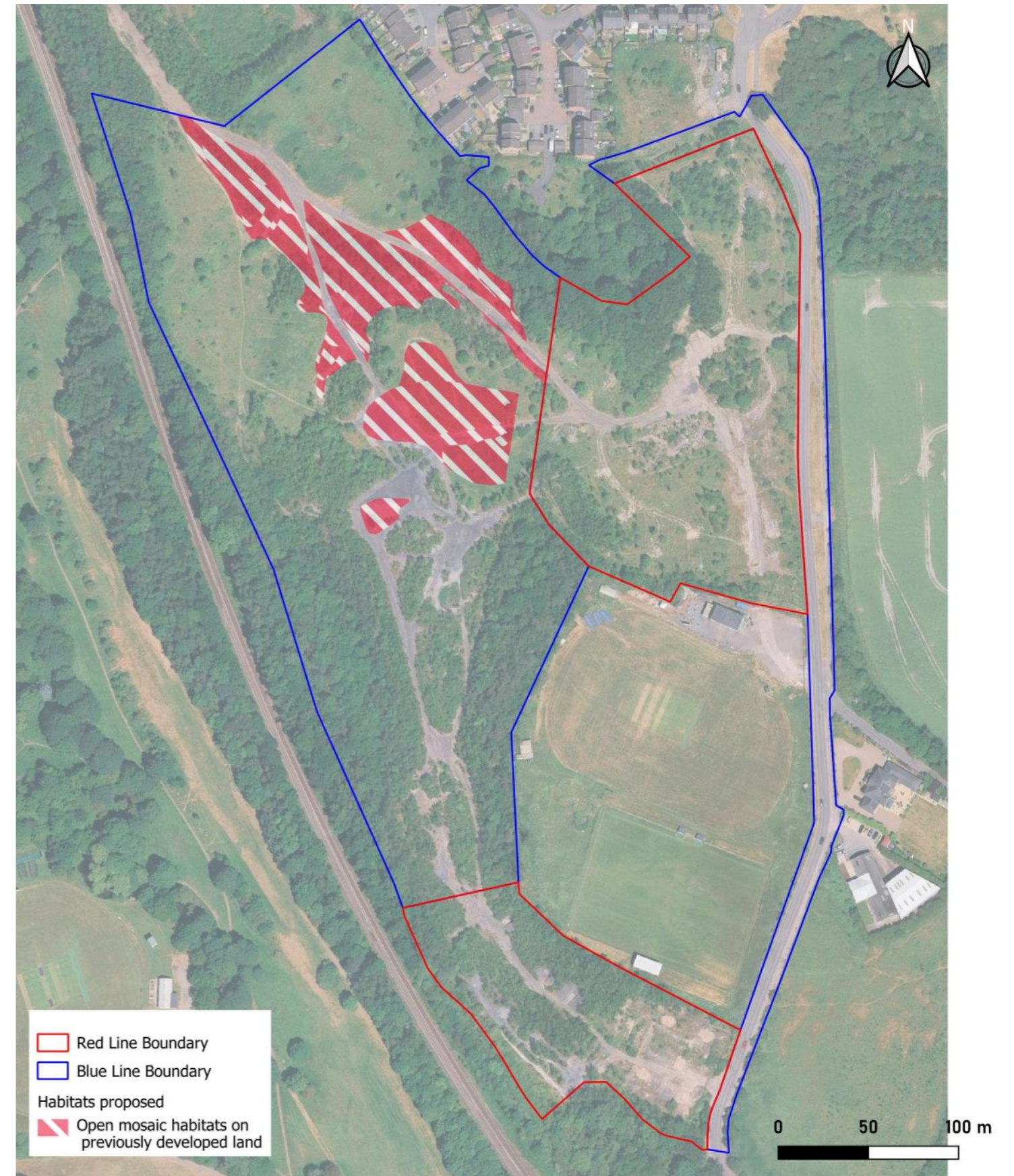
### Sowing

Seed will either be broadcast by hand or by approved lightweight machinery at c. 40kg/ha.

## Management

This area will be subject to regular disturbance, in order to ensure the sward remains low and that bare ground comprises approximately 50% of the habitat mosaic. This will involve a single cut and heavy scarification in September and another cut and scarification in April each year. Annual monitoring will be undertaken by the ECoW, which will dictate the need for remedial actions (i.e. an increase or decrease in disturbance levels).

Scrapes will be created throughout this area on a periodic basis. The level and extent of these scrapes will be decided on the ground by the ECoW.



# Mixed scrub (Management)

## Aim

Scrub is an important interface with open flowery habitats and will be retained in thickets and enhanced where possible, to provide shelter, spring flower foraging, and structure.

Scrub, or specifically spring blossom, is also an integral part of a healthy and functioning invertebrate site. It is a key provider of pollen and nectar in spring from March to late June before the grassland flowers dominate. A range of species that provide flowers through this period are recommended, including willows (*Salix* spp.).

## Establishment

### Stratification

Existing scrub comprises primarily of dense, uniform thickets of birch. These will be thinned out by 50% in the first year. Thinning will aim to remove any woodland canopy forming species, such as oak, ash or sycamore, and to reduce the amount of birch overall. This work will be undertaken by a suitable arboriculture contractor, under the direction of a suitable experienced Ecologist.

The aim will be to open up areas so as to allow interplanting with a more diverse range of woody species.

This work will be undertaken between the period of November and February, inclusive.

### Interplanting

Once the scrub has been thinned, a mix of blossom species will be planted within these areas. This will include:

- apples (*Malus domestica* agg.)
- blackthorn (*Prunus spinosa*)
- cherry plum (*Prunus cerasifera*)
- field maple (*Acer campestre*)
- hawthorn (*Crataegus monogyna*)
- plums (*Prunus domestica* agg.)
- rowan (*Sorbus aucuparia*)
- willows (*Salix* spp.)

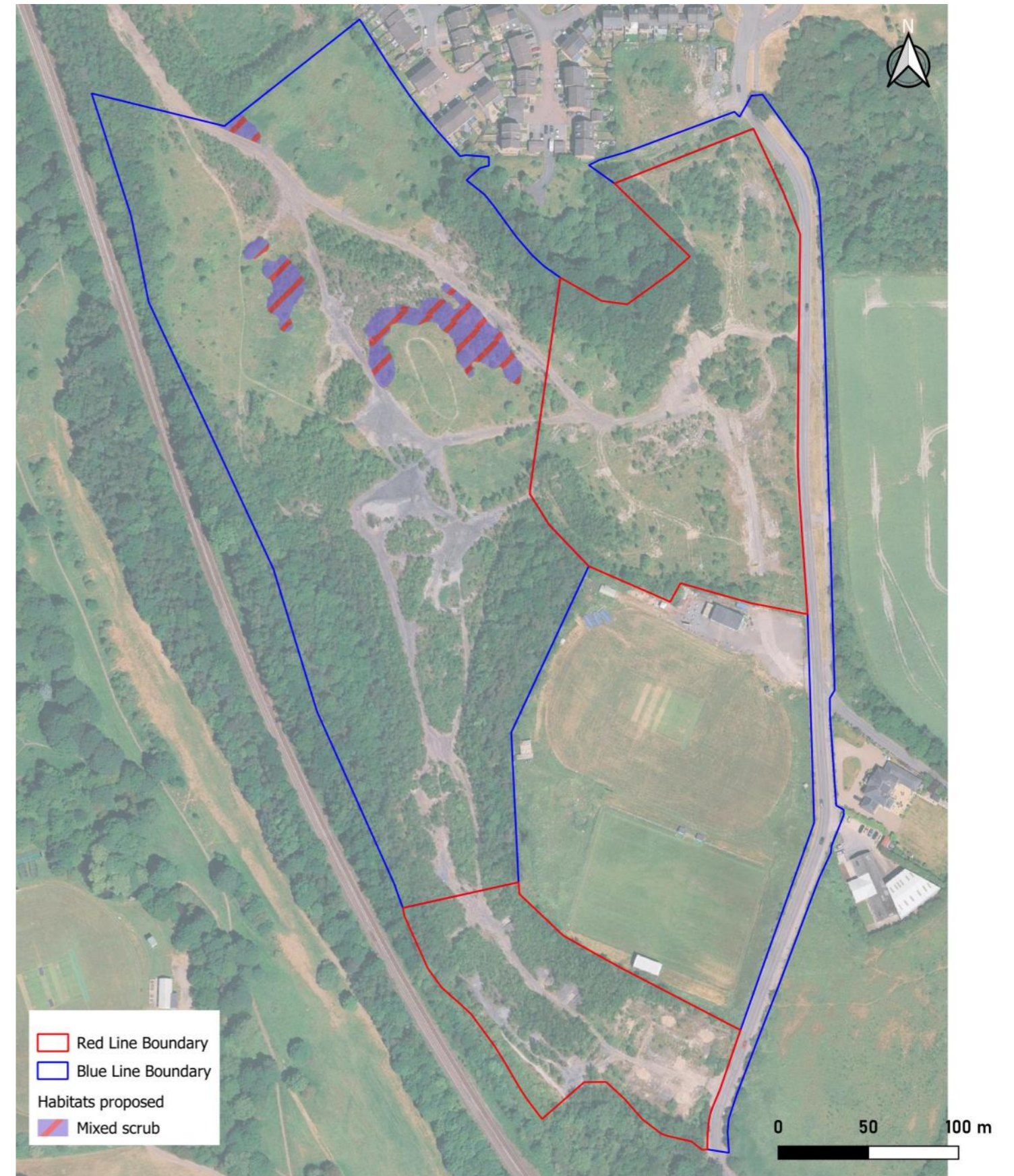
These will be planted as bare root whips during the dormant period (October to February).

The species selected will benefit the Site's invertebrate interest, but will also provide a source of food for birds and small mammals.

### Years 2–30

Scrub will be monitored on a regular basis, with further targeted thinning to be undertaken on an 'as and when required' basis—to be determined by the ECoW.

The aim of management will be to ensure scrub areas remain just that, scrub, and is not allowed to succeed to woodland.



# Broadleaved Woodland (Establishment)

## Aim

The aim will be to steer the existing dense birch scrub into a well-structured and diverse broadleaved woodland.

## Establishment

### Stratification of birch scrub

Areas currently comprising of dense, uniform-aged birch scrub will be thinned out by 50% in the first year. This work will be undertaken by a suitable arboriculture contractor, under the direction of a suitable experienced Ecologist.

The aim will be to open up areas so as to allow underplanting with a more diverse range of woody species.

This work will be undertaken between the period of November and February, inclusive.

### Planting (understory / canopy species)

Once the birch scrub has been thinned, a mix of blossom species will be planted within and both the scrub and existing woodland areas. This will include:

- oak (*Quercus* spp.)
- hazel (*Corylus avellana*)
- blackthorn (*Prunus spinosa*)
- field maple (*Acer campestre*)
- hawthorn (*Crataegus monogyna*)
- rowan (*Sorbus aucuparia*)

These will be planted as bare root whips during the dormant period (October to February).

The species selected will benefit the Site's invertebrate interest, but will also provide a source of food for birds and small mammals.

### Seeding

Once the understory has been planted, the woodland floor and area designated as 'Woodland Glade' will be seeded with Emorsgate Seed mix EW1-Woodland Mix. This will be sown according to the suppliers instructions.



# Broadleaved Woodland (Management)

## Management

### Year 2 -5

Keep a 0.5m diameter around each tree clear of weeds to minimise competition during establishment.

If there is a prolonged dry spell, check soil moisture and water each tree station to saturation at a sufficient frequency to ensure the health of the tree

Check the trees continue to grow upright and don't lean.

Check tree guards and stakes are firmly secured in the ground.

Check trees for pest damage and remove any grass or weeds growing inside the tree guards.

Create standing deadwood by ring barking and creating monoliths from selected birch trees. To be done under the direction of a suitably qualified ecologist and arboriculture consultant.

All timber and brash to be retained on Site, within woodland, in log/ brash piles .

### Years 5-30

Monitor and replace dying trees.

Remove any Invasive Non-native weeds that may colonise.

Continue to thin out birch trees as and when required, with an aim of creating clearings within woodland covering 10-20% area in total.

### Glade

The glade will be managed in a similar way to the neutral grassland, to ensure it remains open.



# Faunal Provision (Invertebrate measures)

## Invertebrate Bank ●

Invertebrate banks are essentially mounded materials. These features will be constructed in a variety of ways, with some banks being partially compacted with machinery, whereas others will be allowed to settle naturally to encourage niche variation, through slumping, and retain lots of interstitial spaces between the aggregate material in which ground beetles can live.

The banks will be constructed with calcareous material, either scraped from site, or as new calcareous aggregate that is brought into the Site.

Seven butterfly banks have already been created, and a further 8 will be created within enhanced and created OMH habitat. Each will be constructed on a southerly facing aspect, with each being at least 10m in length, and built with a range in height from 1m–3m.

Banks will be created in a variety of shapes, including crescent and sinuous, with some being further diversified by the creation of small cliff faces dug into the bank, to provide nesting locations for solitary bees and wasp species.

Once constructed, the banks will be sown with suitable calcareous grassland seed mix.

## Log piles ●

At least 10 log piles will be created on Site; with half created within areas of woodland and half within flower rich grassland.

These will be created using material arising from the initial Site clearance operation, and topped up over the 30 year period from routine management of the woodland.

Within the log piles, some material will be inserted vertically into the ground, to replicate standing deadwood (minimum height–1m).

## Scrapes □

Scrapes will be created as part of general management of the Open Sward Habitat. The number of scrapes and the regularity of creating these would be decided on the ground by the EcOW during monitoring visits.



# Management of Offsite SUDS (Invertebrates)

## Small Blue Core Habitat

Monitoring surveys undertaken by the local butterfly recorder in 2018 has demonstrated that the SUDS basin to the far north of the Site supports the core habitat for Small Blue. The basin was cleared of scrub vegetation in 2023, and further management will be scheduled on a periodic basis to maintain an absence of scrub here.

### Year 1

To be undertaken during the first October to February period following the granting of Planning permission.

Scrub within the SUDS basin will be cleared again to ground level, using hand tools. The resulting timber/ brash will be retained on Site and stacked up along the western boundary in 'Habitat piles'.

Following scrub clearance, the some areas of grassland will be flail mown and then subject to heavy scarification / ground disturbance, so as to promote the germination of Kidney vetch during the following spring/ early summer.

### Year 2–30

Annual monitoring visits will be undertaken in June by the ECoW to assess the extent of Kidney vetch and other host plants for notable butterfly species.

Management will then comprise of annual, or biannual, cuts of the SUDS basin, to control scrub re-growth, following by heavy scarification / ground disturbance.

The frequency of scrub clearance and the level and extent of scarification will be informed by the monitoring visits.

## Stepping Stone

Due to the spatial separation between the core habitat and new mitigation area, a series of 'stepping stones' have now been created in the intervening space. These have been created c.40m apart, to facilitate adult dispersal

SUDS Basin

Small Blue core habitat.  
Scrub clearance undertaken in 2023

Butterfly banks created in 2023

Existing OMH to be enhanced

OMH to be created



SUDS Basin Small Blue core habitat

# Translocation (Invertebrates)

## Initial translocation exercise

Although only a small amount of Kidney vetch remains in the two development parcels, it is assumed that Small Blue still successfully breed on Site.

The main butterfly mitigation area, the Open Mosaic Habitat, will be prepared and seeded during the first October to February period following the granting of Planning permission. This has been completed at least 12 months ahead of vegetation clearance works commencing within the two development parcels.

Translocation of Kidney Vetch, and any other suitable material, will then take place during the main breeding season prior to vegetation works commencing (i.e. May to August). This will be undertaken by the ECoW.

Translocated material will be moved from the development footprint into the Mitigation area.

## Monitoring

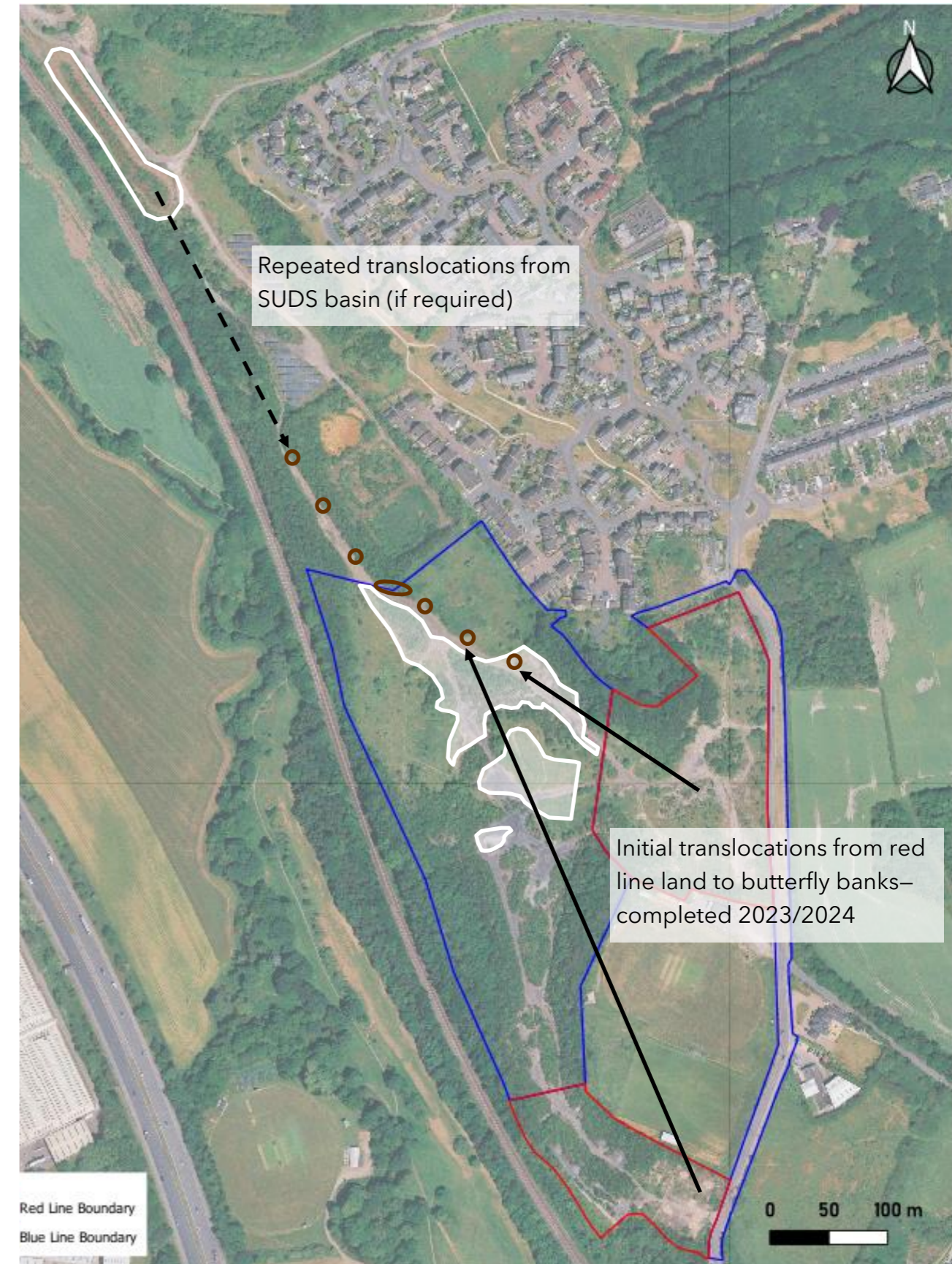
The ECoW will work closely with the local butterfly recorder, who will monitor the Mitigation Area, stepping stone and main SUDS habitat to the north. Results of this monitoring will be reported to the local records center and relayed to the LPA Ecologist.

Monitoring will also be used to check the status of other butterfly species, including small heath, dingy skipper and commoner species. It is anticipated that in time, the Blue line land will support a similar, if not greater assemblage of butterfly species, and will eventually meet the criteria for designation as an LWS.

## Repeat translocation (if required)

Should monitoring indicate that translocation has not been successful, the translocation exercise will be repeated in subsequent years using stock from the main breeding habitat to the north.

Again, this will be undertaken by the ECoW, with the assistance of local butterfly experts.





# Faunal Provision (Bird boxes)

## Specification

Box Type	No.	Plan ref.
Manthorpe Swift Brick	51	Green dots* ●

\* 1 dot denotes 3 bricks.

Although designed to attract swift, swift bricks have been shown to act as 'universal' bird boxes, being used by other declining garden birds such as house sparrow, house martin, and starling.

## Location Notes

The figure opposite illustrates how boxes would be sited.

These will be installed in groups of three on a single elevation. Ideally with one directly below the apex of the verge, and the other three at the bottom of each verge.

Boxes will not be positioned directly above windows, to prevent potential conflict with new homeowners.

## Installed

During construction.





# Faunal Provision (Hedgehog Highway)

## Rationale

Hedgehogs have seen significant declines over the last few decades, with one of the major factors being loss of habitat. This species is listed under Section 41 of the NERC Act (2006) as a 'Species of Principal Importance'.

New Public Open Space (POS) and private gardens provide excellent habitat for hedgehogs and, whereas previously these gardens were accessible to this species by virtue of hedgerow planting, a shift in industry practice to hard borders (fences and walls) has inadvertently excluded hedgehog from this extensive foraging resource. Simply providing a means of access into and between these new gardens and POS can very easily and cheaply increase the amount of habitat available to hedgehog, as shown in the figure opposite.

## Specification

At least one hedgehog access hole (measuring at least 13cm x 13cm) will be installed in each new garden and boundary fence line, allowing connectivity between rear gardens and POS.

This will be done by contractors during the fence's installation. These will be either purpose-made panels such as those supplied by Jackson Fencing, or be cut into standard fences by contractors during installation. Where concrete gravel boards are used, either purpose-built ramps to access holes in the fence panels or underpasses beneath the boards will be made.

All holes will be labelled 'Hedgehog Highway' (see photo above right) so homeowners know why they are there. This will reduce the risk of holes being sealed.



# Raising Awareness (Information board)

Ecologically planned and managed habitats need to be understood by users if they are to appreciate them and become motivated to protect and enhance them for wildlife.

With Specialist Ecological input, the client will install a custom designed information board in the most advantageous location on site.

This will summarise the importance of the woodland buffer.

At least two information boards will be installed near to the access points into the POS, as shown by black circles on the figure opposite.

