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# Land at Clywedog Rd South (Site 5b) Wrexham Industrial Estate

## Outline Habitat Management Plan

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# **1 Introduction**

## **1.1 Background**

Kingdom Ecology have produced an Outline Habitat Management Plan to support the proposed development of 'Site 5b' which is a 3ha area of land located at Clywedog Road South at Wrexham Industrial Estate, LL13 9AE (National Grid Reference- SJ 370 489).

This document identifies areas of land that will be subject to long term management to promote their biodiversity value and provides outline prescriptions for management of these habitats.

FI-REM own several sites at the Wrexham Industrial Estate. They are currently exploring options to develop some of these sites and to manage other sites exclusively for conservation benefit. Within this wider development plan, the development site concerned within this Management Plan is known as Site 5b. Adjacent areas of woodland and grassland habitats which are also discussed within this Plan and which would be managed for their conservation benefit, are known as Sites 5a and 5c.

Figure 1 in the Appendix shows the Site locations.

This management plan includes proposals associated with these specific sites and also shows how these will tie-in with a wider strategy of long-term habitat management proposals to be located throughout the south western quarter of the industrial estate within other areas of FI-REM owned land. This wider strategic plan is shown on Figure 4 in the Appendix.

The outline recommendations within this document should be used to inform the preparation of detailed management prescriptions and method statements to support any future development of Site 5b.

## **1.2 Habitat and Wildlife Summary**

### **1.2.1 Habitats**

An initial desk study and an Extended Phase 1 Habitat Survey of Site 5b was carried out on the 19<sup>th</sup> September 2017. Further surveys comprising of botanical, butterfly, bat, breeding bird and reptile surveys were completed in Spring/Summer 2018.

A walkover survey of habitats within Sites 5a and 5c was carried out in September 2017.

To summarise, Site 5b principally comprises of an area of grassland habitat that has remained unmanaged for several years. A range of successional habitats have developed including areas of coarse, unimproved grassland with scattered hawthorn scrub which grades into areas of tall herb community, bramble scrub and dense thorny scrub.

There is a band of broadleaved woodland which runs along the northern and eastern edges of the site. The easterly block of woodland forms part of a larger, more-or-less unbroken corridor of semi-natural, woodland vegetation which runs for approximately 1600m from the southern boundary of the site on Bridge Road South, through the wider Industrial Estate, before joining Redwither Brook approximately 950m to the east of the site. Redwither Brook eventually flows into the River Clywedog at the south-eastern edge of the Industrial Estate.

The woodland is likely to function as a wildlife corridor through the Industrial Estate.

The grassland habitats present are considered to be of locally important biodiversity value comprising of species-rich, unimproved, neutral grassland.

The scrub habitats present are of low botanical interest and are commonly occurring throughout the UK within similar neglected agricultural and industrial sites.

The woodland is also considered to be of relatively low botanical interest, however owing to its function as one of the main wildlife corridors through the Industrial Estate, the woodland is considered to be a feature of locally important biodiversity value.

Mixed broadleaved woodland is listed under Section 7 of the Environment (Wales) Act 2016 as a habitat of 'principal importance' in Wales.

Wider habitats comprise of residential housing, industrial units, occasional areas of amenity grassland and further areas of unmanaged, rough grassland and scrub.

Habitats within Site 5c comprise of a continuation of the unmanaged, unimproved, neutral grassland with frequent tall herb and scattered young hawthorn scrub located within Site 5b. Habitats adjacent to Site 5c include areas of scrubby woodland with scattered oak trees plus dense hawthorn and blackthorn scrub.

Habitats within Site 5a comprise of a range of successional habitats that have developed on an area of unmanaged grassland.

These habitats comprise of a mosaic of semi-improved, neutral grassland, tall herb, woodland and scrub communities which have developed through neglect of the grassland.

### **1.2.2 Key Species**

Targeted protected species surveys were completed at Site 5b during the 2018 field season to determine the likely presence/absence of and importance of the site for breeding birds, bats, reptiles and notable butterflies.

Moderately high numbers of individual birds were recorded at the site, with most bird species identified calling from within the dense woodland at the fringes of the site; whitethroat were generally recorded within the 'savannah' type habitats within the centre of the site; whilst barn owl and kestrel were recorded hunting over the grassland habitats which are likely to support good populations of small mammals.

Bat activity surveys identified the site as supporting relatively low numbers of common bat species. Bats were generally encountered individually either commuting along or foraging over the woodland habitats along the northern and eastern edges of the site.

No reptiles or notable butterfly species were identified at the site.

The Wrexham Industrial Estate is acknowledged as maintaining important populations of the dingy and grizzled skipper butterfly. Both of these butterflies are listed under Section 7 of the Environment (Wales) Act 2016 as 'Species of Principal Importance'.

Review of existing data and site surveys did not record the presence of these butterflies at the proposed development site. In addition, the habitat assessments of these sites did not indicate that they were potentially viable for the presence of these species.

Although neither species was recorded within the study site, the adoption of habitat creation and management within and outside of the site has the potential to provide additional resources and contribute to the maintenance and enhancement of the butterfly, and other invertebrate, populations within the Wrexham Industrial Estate.

## 2 Outline Habitat Management Plan

### 2.1 Overview

#### 2.1.1 Development Proposals

Within Site 5b, development proposals are to construct two large industrial units with associated areas of hardstanding plus a SUDS attenuation pond. This will result in the loss of approximately 3ha of unimproved neutral grassland, tall herb and scrub habitats. The proposed development would include the retention of a 2.3ha area of land which would be managed principally for its conservation benefit. This land currently comprises of a mix of grassland, tall herb, scrub and broadleaved woodland along the site's northern and eastern boundary.

Further adjacent areas of valuable habitat located within Sites 5a and 5c would also be managed for their conservation benefit. The area of land comprises of an approximately 2.7ha of further unimproved grassland, semi-improved grassland, tall herb, woodland and scrub communities.

The locations of the three sites are shown on Figure 1 in the Appendix.

#### 2.1.2 Mitigation Plan Aims

The habitat management plan for Sites 5a, 5b and 5c have been designed around the following key principles and aims:-

- Where possible, retain blocks of interlinked habitat as opposed to isolated pockets of habitat;
- Maximise the biodiversity value of retained habitats at the site;
- Promote botanical interest within grassland habitats;
- Where possible include suitable habitat for notable invertebrate species;
- Ensure the long-term viability of the proposed ecology sites by appropriate, long-term management and long-term protection of the sites;
- Allow for a flexible and iterative process with regards to the management of the habitats through an annual review of the habitats present and the management plan to allow biodiversity opportunities to be explored and promoted.

#### 2.1.3 Management Plan Delivery

FI-REM will make provision to allow the appointment of an appropriate managing organisation who will be responsible for the maintenance and management of the FI-REM owned habitat compensation areas across the Wrexham Industrial Estate. The detail of this will be arranged at an appropriate stage in the future.

Detail on areas of habitat creation, management prescriptions and timetabling would be provided within detailed Habitat Management Method Statements to be produced at a later stage.

Funding for the ongoing management of the site would be secured ideally through a unilateral undertaking. The amount paid would need to take account of the following:-

- Initial habitat preparation and creation
- Ongoing management and maintenance over a 20-year period
- Wardening and monitoring of the site
- Production of an annual report for the site
- A contingency fund to allow for any modifications to the habitat management plan or ad-hoc remediation works

## **2.2 Proposals**

### **2.2.1 Overview**

The proposed Ecology Areas are located immediately adjacent to one another at Sites 5a, 5b and 5c. All three of these areas support habitats of value which would benefit from long term management.

Habitat Management proposals for the areas will aim to maintain areas of species-rich grassland including flower-rich neutral grassland and south facing calcareous grassland on proposed butterfly banks and mounds. There are further proposals to manage woodland and scrub habitats to optimise their conservation value.

Habitat management proposals will also include the creation of a wildlife pond and design of a proposed SUDS pond to be of benefit to wildlife.

There are further recommendations to provide a bat and bird box scheme within woodland habitats.

Proposed habitat management prescriptions are shown on Figures 2 and 3 in the Appendix.

### **2.2.2 Proposed Mitigation Area**

The proposed mitigation area for Site 5b is located along the northern and eastern boundaries of the site.

Habitats at Sites 5b and 5c comprise principally of unmanaged, unimproved, neutral grassland. The sward principally supports coarse grass species with frequent tall herbs and patches of bramble and meadowsweet.

Grasses comprise of frequent cock's-foot, Yorkshire fog, red fescue and false oat-grass with occasional tufted hair-grass, meadow fox-tail, crested dog's-tail, common bent, common sedge, false-fox sedge, soft rush and hard rush.

The tall herb species present include stands of common knapweed, hoary ragwort, meadowsweet and creeping thistle with cow parsley, hedge parsley and hogweed.

Other occasional herbs include cowslip, yarrow, ribwort plantain, angelica, broadleaved willow-herb, creeping buttercup, meadow buttercup, broadleaved dock, ox-eye daisy, creeping cinquefoil, hairy tare, common vetch, bush vetch, bird's-foot trefoil, common toadflax, meadow vetchling, agrimony, common fleabane, pepper saxifrage, spiny restharrow, common-spotted orchid and self-heal.

The grassland is interspersed with patches of scattered young hawthorn scrub and patches of bramble scrub.

There is a stand of broadleaved woodland along the northern boundary of Site 5b. The woodland comprises of mature oak and willow with a dense underscrub of hawthorn, blackthorn and ash and a field layer of ivy. The hawthorn and blackthorn scrub extends beyond the southern boundary of the woodland into the adjacent grassland.

Habitats within Site 5a comprise of semi-improved grassland with frequent perennial rye-grass, cock's-foot, Yorkshire fog and false oat-grass with occasional tufted hair-grass and soft rush.

Tall herb species present include frequent common knapweed and creeping thistle with occasional great willow-herb, nettle, wild carrot, bird's-foot trefoil, red clover, ribwort plantain, cow parsley, common ragwort, broadleaved dock, hogweed, meadow buttercup, creeping buttercup, ox-eye daisy, yarrow, bush vetch and meadow vetchling.

The western and northern edges of site 5a include patches of broadleaved woodland comprising of mature and young oak trees with willow, ash and dense hawthorn and blackthorn underscrub.

The woodlands are unmanaged and consequently dense and scrubby in parts.

### **2.2.3 Initial Habitat Preparation/ Habitat Creation**

Proposals within the mitigation areas will include:-

- Creation of a wildlife pond and SUDS pond
- Management of existing areas of grassland
- Creation of butterfly banks
- Management of scrub and woodland habitat
- Implementation of a bat and bird box scheme

Areas for different habitat management prescriptions are shown on Figures 2 and 3 in the Appendix.

It is recommended that an Ecological Clerk of Works (EcOW) is appointed to produce detailed Method Statements for the initial habitat creation works and to oversee and advise on sensitive stages of the initial ground works.

Areas proposed for habitat creation/ management should be temporarily fenced off from the remainder of the construction site by the EcOW to prevent encroachment by construction vehicles and damage to habitats.

It is recommended that south facing butterfly banks and butterfly mounds are constructed within each of the mitigation areas.

The banks and mounds should be constructed from a medium-coarse aggregate material with a limestone or other high pH material preferable as it facilitates the development and maintenance of an open, species-rich sward.

The banks should be sown with an appropriate wildflower mix (e.g. Emorsgate Seeds EM6F) and supplemented with a translocation of flower-rich turves.

Timing of grassland translocation is of critical importance. Ideally, grassland turves should be moved in the autumn when soils are warm and moist and immediately prior to rainfall. This timing will also allow opportunity for some root growth prior to winter and will limit the risk of roots under developing prior to the dry summer weather.

Turves should be cut to a depth of approximately 40cm and transported immediately to the donor site. Turves must be planted immediately after harvesting and cannot be stored. If no rainfall is forthcoming then turves will require supplementary watering.

These works should be overseen by the EcOW who will ensure that turves are correctly cut, transported and planted.

Patches of bare ground should be retained on the butterfly banks.

The SUDS pond should be designed to be of benefit to wildlife as well as providing adequate drainage. An additional wildlife pond should also be provided within Site 5a.

The proposed SUDS pond will measure approximately 600m<sup>2</sup> in area. The proposed wildlife pond will measure approximately 200-300m<sup>2</sup> in area. The ponds should have gently sloping sides that allow fauna to easily move between the terrestrial and aquatic habitats and to encourage a 'draw-down' zone at the pond margin which will be seasonally wet. These marginal habitats can be of value to invertebrates and aquatic vegetation. The pond should have an irregular shape to increase the length of pond margin habitat.

The wildlife pond should reach a depth of at least 1m in some parts so the pond will be permanently wet.

If ground conditions dictate, the wildlife pond should be lined with either butyl pond lining or clay and be overlaid with a subsoil substrate. Both ponds should be planted up with appropriate marginal vegetation (to be determined by an ecologist). Marginal planting should be located around the northern edge of the pond to limit over-shading.

Any areas of damaged grassland around the ponds will need to be re-seeded with an appropriate wildflower mix (e.g. Emorsgate Seeds EM3).

The ground will need to be appropriately prepared- wild flower grassland requires a high-quality tilth. Any compacted soils will need to be broken up, at least in the upper horizon, using a power harrow or equivalent. Cultivation is best carried out in dry conditions during the summer with the grassland seed sown in late summer/early autumn.

Areas of bramble scrub and thorny scrub located within areas proposed for grassland management will need to be cut back and cleared from the site. These works should initially be completed outside of the breeding bird season (March-August inclusive).

Grassland areas beneath the scrub habitats will not need to be re-seeded but instead should be allowed to naturally redevelop into grassland habitats. These areas have only recently succeeded to scrub and so grassland species are likely to persist within the seed bank.

Some individual scattered hawthorn and blackthorn bushes should be retained within the grassland habitats to continue to provide suitable bird habitat.

#### **2.2.4 Habitat Management**

Habitat management at Sites 5a, 5b and 5c should seek to encourage a diverse range of habitats.

This will be achieved within grassland habitats through the maintenance of low nutrient soils, through the control of scrub encroachment and by careful timing of cuts to allow grasses and herbs to flower and set seed.

No fertiliser should be applied to the mitigation grasslands.

The grassland habitats at the site should be mown just twice a year, with the first cut carried out in early April and the second cut in September/October.

Following mowing, all arisings must be removed from the site.

Some individual scattered hawthorn and blackthorn bushes should be retained within the grassland habitats to continue to provide suitable bird habitat.

It may not be necessary to frequently cut the vegetation from the butterfly banks. The banks should be monitored by an appropriate ecologist in the summer and they will determine whether parts of the bank will require strimming during the autumn.

The biodiversity value of the woodland and scrub habitats at Sites 5a and 5b should be enhanced.

To increase the value of these woodlands it is recommended that they are thinned out and that any higher value trees are encouraged to come through. This can be achieved through 'haloing' (haloing involves the felling and pruning back of surrounding low-value trees and scrub so that they do not shade out and stunt the development of the more valuable adjoining trees). The thinning out of the woodland should allow more light through to the field layer potentially enhancing conditions for woodland ground flora.

Thinning of the woodland should be completed once every 10 years.

Some log piles and areas of dead wood should be retained within the woodland to provide additional habitat for invertebrates.

Dense blackthorn and hawthorn scrub at Site 5a should be cut back on a 10-year rotation. With half the scrub cleared in years 1 and 10 and the other half in years 5 and 15. Hawthorn and blackthorn scrub can be rich in insects and birds in the early and middle stages of growth. This cycle of cutting will retain early stage scrub habitats.

Annual monitoring of the sites will be undertaken to assess the success of the management regimes. The ecologist will also determine whether parts of the site will require patches of earth scraped back to provide areas of bare ground and to encourage early successional grassland.

Intermittent management and control of vegetation within the wildlife pond and the SUDS pond may be required on a 3-5 year basis. The ponds should be managed to retain at least 30% open water.

Any invasive aquatic plant species should be monitored and treated as appropriate to prevent colonisation of the ponds.

If water levels within the deepest parts of the ponds fall regularly below 500mm, de-silting of the pond should be carried out by a long-armed excavator. Where possible this should be carried out from one entry point to limit disturbance to the pond and adjacent habitats. These works would ideally be carried out over the winter months.

Annual monitoring of the sites will be undertaken to assess the success of the management regimes. The ecologist will also determine whether any pond and scrub maintenance is required.

Management of habitats should be carried out for at least 20 years, following the completion of construction.

### **2.2.5 Bat and Bird Boxes**

A bat and bird box scheme should be implemented within woodland habitats.

It is recommended that the following models and numbers of bat and bird boxes are installed on mature trees at Sites 5a and 5b:-

- 12 x Schwegler 1B Bird boxes with 32mm entrances
- 6 x Schwegler 1B Bird boxes with 26mm entrances
- 12 x Schwegler 1FS Bat boxes
- 6 x Schwegler 2FN Bat boxes
- 3 x Schwegler 2FN Bat boxes

Bat boxes should be positioned to face in a more-or-less southerly direction; should be located at a minimum height of 4m and should be located so that flight lines to the bat box are not obstructed by vegetation.

Bird boxes should be located at a minimum height of 3m and should be positioned in a sheltered location.

### **2.2.6 Wardening, Monitoring and Reporting**

Land at Wrexham Industrial Estate can suffer some anti-social behaviour including fly tipping, unauthorised use of off-road vehicles and use of land by unauthorised gypsy and traveller encampments.

It is recommended that fencing around the sites is maintained and monthly wardening should be carried out.

Where identified during wardening visits, remediation works should be promptly carried out at each site. This could include, clearance of fly-tipped debris, litter picking etc including from within the wildlife and SUDS ponds.

Monitoring of the site should be carried out annually during the summer to assess the success of the habitat management plan, to allow for any refinement of management practices and to check on the integrity of bat and bird boxes. The monitoring works should be completed by an appropriately qualified ecologist.

An annual monitoring report with management recommendations (where relevant) would be produced and submitted.

### **2.2.7 Wider Habitat Management Strategy**

A wider habitat management strategy has been produced for other areas of FI-REM land located around the southwest corner of the industrial estate.

This wider plan aims to provide inter-connected blocks of semi-natural habitat that are managed to maximise their biodiversity value.

Where possible, areas of land have been allocated where they adjoin other patches of semi-natural habitat both outside and inside of FI-REM's ownership, to provide large continuous blocks of valuable wildlife habitat.

This wider management strategy will include areas of managed woodland and managed grassland habitats. Bat and bird boxes will also be installed within the managed woodland habitats.

The habitat management areas associated with Sites 5a, 5b and 5c will form a large block of varied habitats managed for their conservation value. These habitat areas are linked to other habitats within the wider industrial estate by a continuous block of broadleaved woodland which runs through the Industrial Estate. The appropriate management of these habitats will therefore contribute towards the wider Habitat Management Strategy.

Figure 4 in the Appendix shows the proposed layout of the wider habitat management strategy along with proposed habitat types to be managed.

### 3 Appendix

**FIGURE 1- Site Location**



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Ordnance Survey 100054686



Site Location



**FIGURE 2 – Ecology  
Area- Site 5b & 5c**





