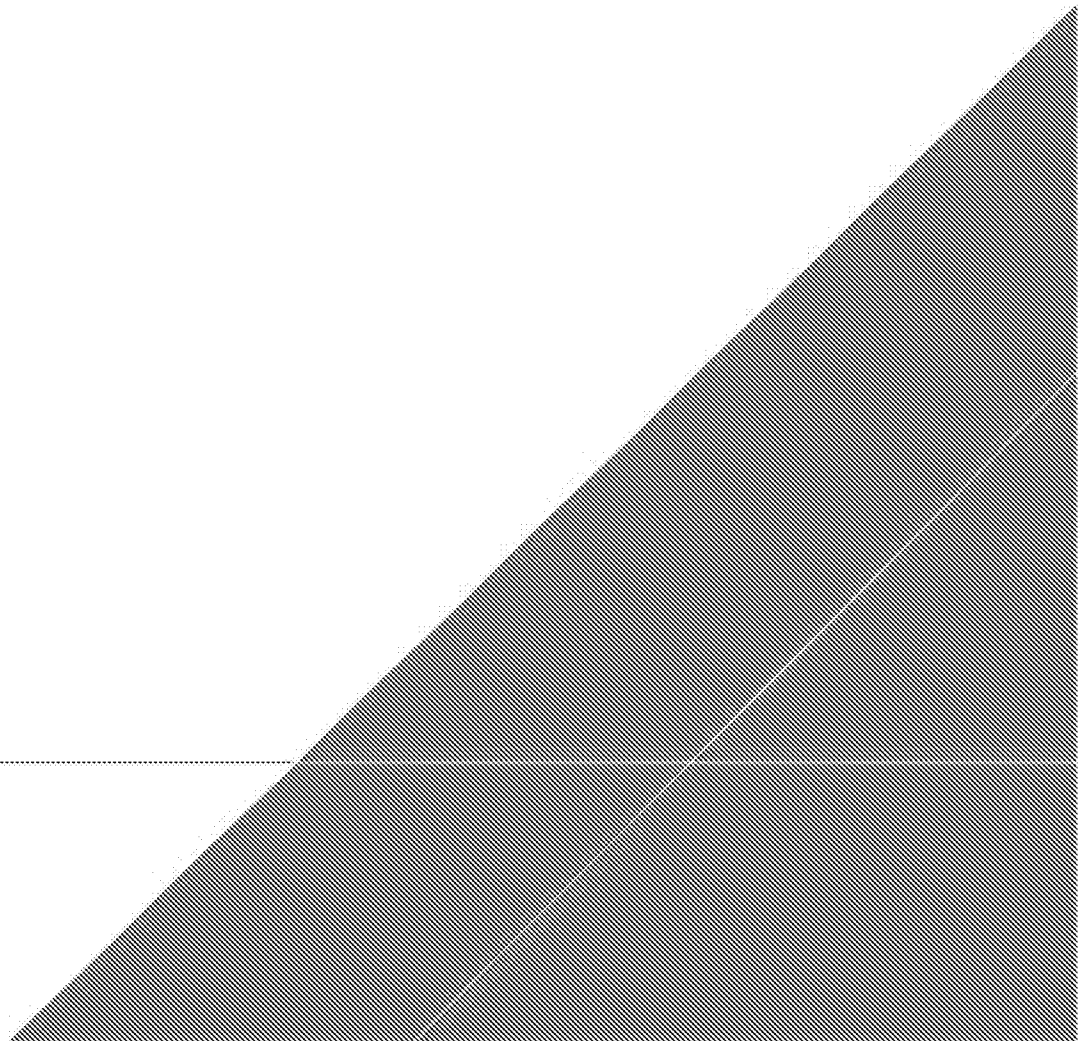


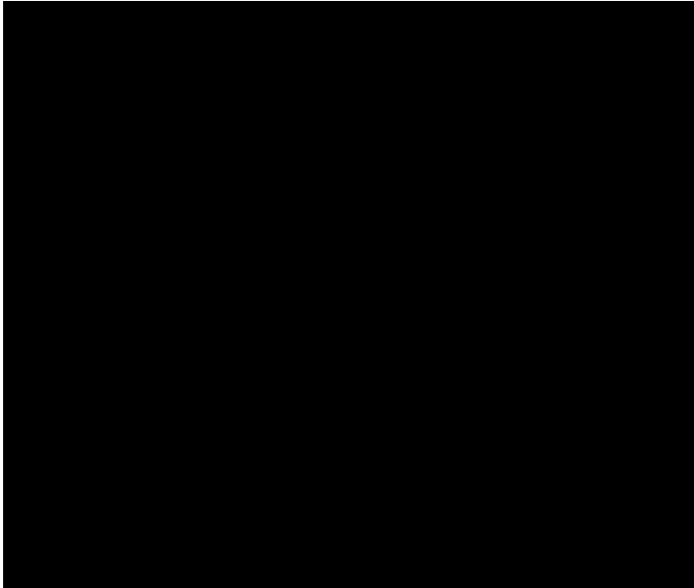
# MOJ PROVISION OF ECOLOGICAL CONSULTANCY

## Phase 1 Habitat Survey - HMP Ford

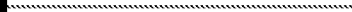
APRIL 2020



## CONTACTS



Arcadis,  
Level 1  
2 Glass Wharf  
Temple Quay  
Bristol  
BS2 0FR



## Phase 1 Habitat Survey - HMP Ford

[illegible]

# CONTENTS

|        |                                                             |   |
|--------|-------------------------------------------------------------|---|
| 1      | SUMMARY .....                                               | 1 |
| 3      | INTRODUCTION .....                                          | 2 |
| 4      | METHODOLOGY .....                                           | 2 |
| 4.1    | Desk study .....                                            | 2 |
| 4.2    | Field survey .....                                          | 2 |
| 4.3    | Limitations .....                                           | 3 |
| 5      | RESULTS .....                                               | 3 |
| 5.1    | Designated sites .....                                      | 3 |
| 5.2    | Plants and habitats .....                                   | 3 |
| 5.2.1  | Priority Habitats .....                                     | 3 |
| 5.2.2  | Ancient Woodland.....                                       | 4 |
| 5.2.3  | Plant Species .....                                         | 4 |
| 5.2.4  | Semi-natural Broadleaved Woodland.....                      | 4 |
| 5.2.5  | Plantation Broadleaved Woodland .....                       | 4 |
| 5.2.6  | Scattered Trees .....                                       | 4 |
| 5.2.7  | Scrub.....                                                  | 4 |
| 5.2.8  | Grassland.....                                              | 4 |
| 5.2.9  | Arable.....                                                 | 5 |
| 5.2.10 | Tall Ruderal.....                                           | 5 |
| 5.2.11 | Introduced Shrubs .....                                     | 5 |
| 5.2.12 | Species Poor Native Hedgerow.....                           | 5 |
| 5.2.13 | Standing Water.....                                         | 5 |
| 5.2.14 | Hardstanding, Buildings and Bare Ground.....                | 5 |
| 5.3    | Protected Species and Species of Conservation Concern ..... | 5 |
| 5.3.1  | Invertebrates .....                                         | 5 |
| 5.3.2  | Fish .....                                                  | 5 |
| 5.3.3  | Amphibians .....                                            | 6 |
| 5.3.4  | Reptiles .....                                              | 6 |
| 5.3.5  | Birds .....                                                 | 6 |
| 5.3.6  | Bats .....                                                  | 7 |

|        |                                          |    |
|--------|------------------------------------------|----|
| 5.3.7  | Dormouse .....                           | 7  |
| 5.3.8  | Water vole.....                          | 8  |
| 5.3.9  | Otter.....                               | 8  |
| 5.3.10 | Badger.....                              | 8  |
| 5.3.11 | Other mammals .....                      | 8  |
| 6      | ASSESSMENT .....                         | 9  |
| 7      | RECOMMENDATIONS AND FURTHER SURVEY ..... | 9  |
| 8      | MANAGEMENT RECOMMENDATIONS .....         | 9  |
| 8.1    | Plants and habitats .....                | 9  |
| 8.1.1  | :Biodiversity Area~ .....                | 9  |
| 8.1.2  | Grassland.....                           | 9  |
| 8.1.3  | Woodland.....                            | 10 |
| 8.2    | Species .....                            | 10 |
| 9      | CONCLUSIONS .....                        | 11 |
| 11     | REFERENCES .....                         | 12 |
|        | FIGURES .....                            | 13 |

## TABLES

|         |                                                                     |   |
|---------|---------------------------------------------------------------------|---|
| Table 1 | Birds of Conservation Concern recorded within 1km of the Site ..... | 6 |
| Table 2 | Mammals within 1km of the Site .....                                | 8 |

## APPENDICES

### APPENDIX A

Phase 1 habitat survey TN

### APPENDIX B

Photographs

## 1 Summary

Arcadis Consulting (UK) Ltd was commissioned by the Ministry of Justice (Moj) in December 2018 to undertake extended Phase 1 habitat surveys of a number of sites within the Moj estates cluster. This report presents the results of the extended Phase 1 habitat survey of Her Majesty's Prison (HMP) Ford (the site).

A desk study was undertaken using both publicly available data and specific information relating to the site provided by the Moj. The field survey was undertaken on 17 March 2020 with the aims of mapping the habitats present and assessing their potential to support any protected or notable species.

The HMP Ford site supported habitats that are common and widespread throughout the UK. The site was split into two parcels, the residential site and the industries site. The residential site supported buildings, hardstanding roads, pathways and car parking areas with amenity grassland and introduced (ornamental) shrub planting. The Biodiversity Area on the northern edge of the residential site was covered by dense scrub.

The industries site was a commercial nursery with large areas of arable land covered by polytunnels containing bedding plants, tree saplings and ornamental shrubs. Two Habitats of Principle Importance (HPI) were present within the industries site: Lowland Mixed Deciduous Woodland and Traditional Orchard. Other habitats included buildings, scrub, semi-improved grassland, species-poor semi-improved grassland, amenity grassland and scattered trees. The 2017 Phase 1 survey report stated that dormouse was present on site (Moj, 2017). Dormouse is a Species of Principle Importance (SPI).

The site as a whole was considered to have moderate biodiversity value at a local level.

Some habitats present were considered to have potential for supporting protected species and further surveys to ascertain the presence or absence of these species have been recommended. These included:

- ¿ Reptile presence/absence surveys;
- ¿ Bat surveys;
- ¿ Breeding bird surveys;
- ¿ Invertebrate surveys; and
- ¿ Dormouse surveys.

It is recommended that a site EMP is produced, to identify targets for biodiversity enhancement and provide detail of the management measures required to achieve these targets.

Initial management recommendations have been made, focussed on enhancing the biodiversity value of the habitats present on site and improving the suitability of the site for protected and notable species.

Implementing these would ensure that biodiversity at the site is maintained and enhanced, thus contributing to the aims of the Moj Estates Directorate Biodiversity Policy (March 2018).

### 3 Introduction

Arcadis Consulting (UK) Ltd was commissioned by the Ministry of Justice (MoJ) in December 2018 to undertake extended Phase 1 habitat surveys of a number of sites within the MoJ estates cluster (specifically Her Majesty's Prison and Probation Service (HMPPS) estate). These sites are considered by the MoJ to be environmentally sensitive and are known as Stage 2 Biodiversity Significant Sites.

The objectives of the surveys were to help establish a robust ecological baseline of the MoJ's estate, to inform further ecological survey work and to make initial management recommendations. This would assist the MoJ in its aim of maintaining and enhancing biodiversity across its estate, as outlined in the MoJ Estates Directorate Biodiversity Policy (March 2018).

This report presents the results of the extended Phase 1 habitat survey of one of the Stage 2 Biodiversity Significant Sites; Her Majesty's Prison Ford. The study area is all the land owned by the MoJ, as indicated by the red line on Figure 1, which is hereafter referred to as 'the site'. The site is located close to the village of Ford, West Sussex. The Ordnance Survey (OS) grid reference of the centre of the site is TQ001028. The total size of the site is approximately 26 hectares (64 acres) split into two sections, bisected by Ford Road. The eastern side of the site is known as 'the residential site' and western side is known as 'the industries site'. This is what they will be referred to within this report. The site is surrounded by arable land, improved pasture and residential and industrial areas.

### 4 Methodology

#### 4.1 Desk study

Existing ecological information relating to the site provided by the MoJ was reviewed.

Aerial imagery of the site and the wider landscape was reviewed using Google Earth.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website was consulted for records of statutory designated sites of nature conservation importance on or within 1km of the site boundary, and within 10km for any Special Areas of Conservation (SACs) for which bats are one of the qualifying features. It was also used to identify woodland within or adjacent to the site that is included on the Ancient Woodland Inventory (AWI), habitats within or adjacent to the site that are included on Natural England's Priority Habitat Inventory (PHI), and previously granted European Protected Species (EPS) licences within or close to the site.

A search of the National Biodiversity Network (NBN) Atlas was undertaken for records of protected species and other species of conservation concern within and adjacent to the site where appropriate.

The Natural Environment and Rural Communities (NERC) Act 2006 (Her Majesty's Stationery Office (HMSO) 2006) Section 41 list of Habitats of Principal Importance (HPI) and Species of Principal Importance (SPI) for the conservation of biodiversity in England, were also reviewed with reference to the priority habitats and species present, or likely to be present, within or adjacent to the site.

#### 4.2 Field survey

An extended Phase 1 habitat survey of the site was undertaken by Tom Rothero MCIEEM, Arcadis Senior Ecologist, on 17 March 2020.

The survey involved identifying and mapping the dominant habitat types following the survey methodology outlined in the Phase 1 habitat survey handbook (Joint Nature Conservation Committee (JNCC), 2010). Dominant plant species were noted, as were any uncommon species or species indicative of particular habitat types, but there was no attempt to compile exhaustive species lists. Botanical names follow Stace (2019) for higher plants, and Atherton, Bosanquet and Lawley (2010) for bryophytes. In addition, any invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended; HMSO 1981) that were identified during the survey were recorded.

The extended Phase 1 habitat survey also involved a critical assessment of the value of the terrestrial and aquatic habitats present for their use by legally protected animal species or species of conservation concern.

The importance of the terrestrial habitats for invertebrates was assessed, as were the waterbodies and watercourses for both aquatic invertebrates and fish.

The site was assessed for its potential to support amphibians and reptiles. Any areas suitable for foraging and hibernating were recorded, as well as specific features that would provide suitable places of shelter and/or hibernation, and areas suitable for basking reptiles. The potential for the ponds on site to be used as breeding sites by amphibians was assessed. This included using the Habitat Suitability Index (HSI) tool developed by Oldham et al. (2000) to assess their potential for great crested newt (*Triturus cristatus*).

The importance of the site for use by breeding and overwintering birds was assessed, including the areas of woodland and scrub, and hedgerows. Any mature trees were assessed for their potential to provide nesting sites for birds of prey, such as barn owl (*Tyto alba*).

The potential of the site to support roosting and hibernating bats was assessed. Any particularly suitable trees, buildings or other structures were noted, but a comprehensive external inspection survey was not undertaken. The likely value of the various habitats within the site to foraging bats was also assessed.

The woodland, scrub and hedgerows were assessed for their potential to support dormouse (*Muscardinus avellanarius*).

The suitability of the waterbodies and watercourses for water vole (*Arvicola amphibius*) and otter (*Lutra lutra*) was assessed and any incidental observations of characteristic field signs, such as water vole burrows and latrines, and otter spraints, were recorded. However, a comprehensive water vole and otter survey was not undertaken.

A search for setts and other evidence of badger (*Meles meles*), including latrines, paths, footprints, hairs, and feeding signs, was undertaken in accordance with the best practice guidelines given in Harris et al. (1989).

The potential of the site to support other mammals of conservation concern, such as hedgehog (*Erinaceus europaeus*) and polecat (*Mustela putorius*), was also assessed.

The Phase 1 habitats were mapped in the field on a paper plan of the site, provided by the MoJ. Target Notes (TN) describing interesting features, important species and any other key information were taken and the locations marked on the plan. The Phase 1 habitat map was digitised in ArcGIS following the survey and is included in this report as Figure 1. The Target Notes are included in Appendix A and photographs are included in Appendix B.

### 4.3 Limitations

The extended Phase 1 habitat survey was undertaken in March, outside of the optimum survey period (April to September). Some plant species will not be visible at this time of year and others will be harder to identify due to reduced overwintering growth and lack of diagnostic features such as flowers. Although the broad habitat types were mapped confidently, it was possible that rare or uncommon species, and important habitats, could have been missed. Likewise, signs of some protected or otherwise notable animal species will be harder to identify at this time of year.

## 5 Results

### 5.1 Designated sites

There are no statutory designated sites within 1km of the site, and no SACs for which bats are one of the qualifying features within 10km.

### 5.2 Plants and habitats

#### 5.2.1 Priority Habitats

A search of Priority Habitats on MAGIC showed two types of Priority Habitats present within 1km of the site: Lowland Mixed Deciduous Woodland and Coastal and Floodplain Grazing Marsh. The latter habitat type is found along the River Arun and borders the site to the east. The closest block of Lowland Mixed Deciduous Woodland that appears on MAGIC is located approximately 500m north of the Site.

### 5.2.2 Ancient Woodland

A search of Natural England's Ancient Woodland Inventory showed no ancient woodland present within 1km of the site.

### 5.2.3 Plant Species

A search of the NBN Atlas showed records of 13 plant species, supplied by the Ministry of Justice. None of the species were notable.

### 5.2.4 Semi-natural Broadleaved Woodland

A narrow block of semi-natural broadleaved woodland was present at the southern eastern corner of the industries site. Species present included Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*), Beech (*Fagus sylvatica*), Poplar (*Populus* sp.), Sycamore (*Acer pseudoplatanus*) and Alder (*Alnus glutinosa*).

This habitat is also considered to be Lowland Mixed Deciduous Woodland HPI.

Fir and Cypress species were also present including Douglas Fir (*Pseudotsuga menziesii*) and Leyland Cypress (*Cupressus x leylandii*). It is considered that species are planted additions on the woodland edge.

### 5.2.5 Plantation Broadleaved Woodland

The western boundary of the industries site supported a linear plantation woodland. Species present included Poplar, Ash, and Alder. Leyland Cypress was also present.

### 5.2.6 Scattered Trees

Scattered trees were present within the areas of open grassland in both the residential and industries area of the site. Species present included Silver Birch (*Betula pendula*), Pedunculate Oak (*Quercus robur*), Leyland Cypress, Alder, Ash, Poplar, Douglas Fir and Willow (*Salix* sp.).

There was also a Traditional Orchard HPI present (Photograph 1, TN1). Species present included a range of Apple species (*Malus* sp) over semi-improved grassland.

### 5.2.7 Scrub

Areas of dense scrub were present within both parts of the site. Within the residential site a large expanse of dense scrub was present within the Biodiversity Area (TN2). Dense scrub was also present at the south eastern and north western corners of the industries site. Species present included Bramble (*Rubus fruticosus* agg), Butterfly-Bush (*Buddleja davidii*), Elder (*Sambucus nigra*), Common Nettle (*Urtica dioica*) and Willow saplings.

Patches of scattered Bramble and Butterfly-Bush were also present within the industries site.

### 5.2.8 Grassland

The grasslands present across the site as a whole were largely well managed amenity lawns and sports pitches (Photograph 2 and 8). Species included Perennial Rye-grass (*Lolium perenne*), Yarrow (*Achillea millefolium*), Red Clover (*Trifolium repens*) Yorkshire-fog (*Holcus lanatus*), Common Daisy (*Bellis perennis*), Dandelion (*Taraxacum* agg), Couch-grass (*Elymus repens*) and Annual Meadow-grass (*Poa annua*).

The south eastern corner of the industries site is also used as a biodiversity area (TN3). Mowing is relaxed to once a year to enable the development of a more diverse semi-improved neutral grassland sward. This grassland supported the species recorded in the well managed lawns and other common species including Cock's-foot (*Dactylis glomerata*), Common Ragwort (*Jacobaea vulgaris*), Dove's-foot Cranesbill (*Geranium mole*), Creeping Bent (*Agrostis stolonifera*), Creeping Thistle (*Cirsium arvense*) and Common Hogweed (*Heracleum sphondylium*).

Areas of species-poor semi-improved grassland were also present within both parts of the site (Photograph 3).

### 5.2.9 Arable

Most of the industries site comprised a large commercial nursery which grows and supplies the prison system with flowers, shrubs and trees. Large polytunnels, greenhouses and expanses of outdoor hard standing areas were being used in the propagation of ornamental species, trees and bedding plants at the time of the survey (Photograph 4, TN4).

### 5.2.10 Tall Ruderal

Small patches of tall ruderal vegetation were present in various locations across the site. Species included various Umbellifer species, Red Dead-nettle (*Lamium purpureum*), Cleavers (*Galium aparine*), Common Nettle, Creeping Thistle and Spear Thistle (*Cirsium vulgare*).

### 5.2.11 Introduced Shrubs

Both parts of the site supported various well-maintained ornamental planting beds fringing pathways and amenity grassland lawns (Photograph 9). Species present included Box (*Buxus sempervirens*), Variegated Laurel (*Aucuba japonica* :Variegata ), Rosemary (*Salvia rosmarinus*), Lavender (*Lavandula* sp.), Bell Heather (*Erica cinerea*), Wilson's Honeysuckle (*Lonicera nitida*) and Yew (*Taxus baccata*).

### 5.2.12 Species Poor Native Hedgerow

Three well-maintained species-poor Beech-dominated hedgerows were recorded within the industries site.

### 5.2.13 Standing Water

There was a large reservoir within the industries sites that supplied the nursery with water for irrigation purposes (Photograph 5, TN5).

The Phase 1 Habitat survey carried out in 2017 stated that three ponds had been constructed within the Biodiversity Area (TN2) in 2008 (Moj, 2017). In 2017 and 2020 this area was overgrown by impenetrable scrub and the ponds were not observed or assessed.

### 5.2.14 Hardstanding, Buildings and Bare Ground

Large areas of hardstanding (tarmac access roads and car parking, mixed surface yards and areas of gravel) were present within the industries site. The residential site also contained tarmac roads, paths and car parking areas (Photograph 10).

The buildings on the residential site were a mixture of industrial style units, flat roofed offices and single storey classrooms. The residential site included single storey and multi-storey cell blocks and larger brick-built buildings.

Bare ground was recorded around the newly constructed shop and café building on the eastern side of the industries site.

## 5.3 Protected Species and Species of Conservation Concern

### 5.3.1 Invertebrates

A search of the NBN Atlas showed records of 29 species of invertebrate within 1km, supplied by the Moj. These include two SPIs (one moth one butterfly): knot grass (*Acronicta rumicis*) and grayling (*Hipparchia semele*).

Given the size and range of habitats present within the site it is considered that a diverse assemblage of invertebrate species would be present some of which may be notable.

A large insect hotel was installed within the scrub on the south eastern corner of the industries site (location identified by TN7).

### 5.3.2 Fish

There were no records of fish within 1km of the site on the NBN Atlas.

Anecdotal evidence from staff on site stated that species of carp (*Cyprinus* spp) are present within the reservoir on site. It is not considered likely that any notable fish species were present.

### 5.3.3 Amphibians

A search of the NBN Atlas showed several records of smooth newt (*Lissotriton vulgaris*) within the site, supplied by the Ministry of Justice.

The three ponds within the Biodiversity Area on site could not be assessed for their suitability for supporting great crested newt due to lack of access. The reservoir on site was unsuitable for supporting this species due to the dense population of carp species present, known to predate eggs and larvae of amphibian species. Indeed, the reservoir was scored as 'Poor' for its suitability for supporting great crested newt using the HSI method of assessment (Oldham et al, 2000).

It considered likely that the habitats within the site such as woodland and scrub would support common amphibian species during their terrestrial phases.

### 5.3.4 Reptiles

A search of the NBN Atlas showed one record of grass snake (*Natrix helvetica*) from the site, supplied by the Ministry of Justice.

The areas of semi-improved grassland with a longer sward are considered likely to support common reptile species such as grass snake and slow worm (*Anguis fragilis*) in both the residential and industries site.

The areas of open hard standing fringed by scrub and grassland in the industries site also offer optimal basking opportunities for these species. There were log and wood piles within the industries site that were suitable for hibernating reptiles (Photograph 6, TN6).

### 5.3.5 Birds

A search of the NBN Atlas showed records of 57 bird species within 1km of the site, provided by the Ministry of Justice. These included nine bird species listed on the Red List of Birds of Conservation Concern (Eaton et al, 2015). An overview of the species is given in Table 1 Birds of Conservation Concern recorded within 1km of the Site.

Table 1 Birds of Conservation Concern recorded within 1km of the Site

| Common name               | Scientific name                                  | List       |
|---------------------------|--------------------------------------------------|------------|
| Skylark                   | <i>Alauda arvensis</i>                           | Red BoCC   |
| Mallard                   | <i>Anas platyrhynchos</i>                        | Amber BoCC |
| Swift                     | <i>Apus apus</i>                                 | Amber BoCC |
| Black-headed gull         | <i>Chroicocephalus ridibundus</i>                | Amber BoCC |
| Cuckoo                    | <i>Cuculus canorus</i>                           | Amber BoCC |
| Bewick's swan             | <i>Cygnus columbianus</i> subsp. <i>Bewickii</i> | Amber BoCC |
| Mute swan                 | <i>Cygnus olor</i>                               | Amber BoCC |
| House martin              | <i>Delichon urbicum</i>                          | Amber BoCC |
| Lesser spotted woodpecker | <i>Dendrocopos minor</i>                         | Red BoCC   |
| Reed bunting              | <i>Emberiza schoeniclus</i>                      | Amber BoCC |

| Common name     | Scientific name                     | List       |
|-----------------|-------------------------------------|------------|
| Kestrel         | <i>Falco tinnunculus</i>            | Amber BoCC |
| Oystercatcher   | <i>Haematopus ostralegus</i>        | Amber BoCC |
| Herring gull    | <i>Larus argentatus</i>             | Red BoCC   |
| Common gull     | <i>Larus canus</i>                  | Amber BoCC |
| Linnet          | <i>Linaria cannabina</i>            | Red BoCC   |
| Yellow wagtail  | <i>Motacilla flava subsp. Flava</i> | Red BoCC   |
| Tree sparrow    | <i>Passer montanus</i>              | Red BoCC   |
| Shag            | <i>Phalacrocorax aristotelis</i>    | Red BoCC   |
| Common redstart | <i>Phoenicurus phoenicurus</i>      | Amber BoCC |
| Wood warbler    | <i>Phylloscopus sibilatrix</i>      | Red BoCC   |
| Willow warbler  | <i>Phylloscopus trochilus</i>       | Amber BoCC |
| Duncock         | <i>Prunella modularis</i>           | Amber BoCC |
| Starling        | <i>Sturnus vulgaris</i>             | Red BoCC   |
| Song thrush     | <i>Turdus philomelos</i>            | Red BoCC   |

The site is considered likely to support a diverse range of bird species with the woodland and scrub considered to be optimal habitats for nesting birds.

Anecdotal evidence from staff stated that cormorant (*Phalacrocorax carbo*), mute swan (*Cygnus olor*) and mallard duck (*Anas platyrhynchos*) have been observed on the reservoir within the industries site.

A barn owl box was recorded within the plantation woodland on the western side of the industries site (Photograph 7, TN8). It did not appear to be in use in at the time of the survey.

### 5.3.6 Bats

There were no records of bats within 1km of the site on the NBN Atlas. A search of MAGIC returned no records of EPS licences for bats within 1km of the Site.

The site is considered to be of good quality for foraging and commuting bat species. The linear woodland blocks and tree lines on the edge of the site provided commuting routes and the areas of semi-improved grassland, scrub and open water represent good quality foraging habitats.

The buildings on site were largely considered unsuitable for supporting roosting bat species due to their construction. However, buildings that had degraded may have developed potential roosting features. A full buildings assessment for roosting bat species was not undertaken.

### 5.3.7 Dormouse

There were no records of dormouse within 1km of the site on the NBN Atlas.

There is some anecdotal evidence from staff included with the 2017 Phase 1 report that dormice were present on site (Moj, 2017). The linear woodlands do have some potential for supporting this species as

food sources were present and the scrub understorey provides the vertical stratification required by this species. Further woodland habitat is present 500m north of the site.

Dormouse is an SPI.

### 5.3.8 Water vole

There were no records of water vole within 1km of the site on the NBN Atlas. There are no suitable habitats present for supporting water vole within the site. This species is considered absent from the site.

### 5.3.9 Otter

There were no records of otter within 1km of the site on the NBN Atlas. There are no suitable habitats present for supporting otter within the site. This species is considered absent from the site.

### 5.3.10 Badger

There were no records of badger within 1km of the site on the NBN Atlas.

There was no evidence of badger activity found on site at the time of the survey. It is considered likely that badgers from the wider landscape would use the woodland in the industries site and the Biodiversity Area of the residential site for foraging and commuting.

### 5.3.11 Other mammals

A search of the NBN Atlas revealed records of nine other mammal species, supplied by the Ministry of Justice, detailed in Table 2 Mammals within 1km of the Site. The only notable species was West European hedgehog which is a SPI. It is considered likely that hedgehog would be present on site.

Table 2 Mammals within 1km of the Site

| Common name            | Scientific name              |
|------------------------|------------------------------|
| Rabbit                 | <i>Oryctolagus cuniculus</i> |
| Wood mouse             | <i>Apodemus sylvaticus</i>   |
| House mouse            | <i>Mus musculus</i>          |
| Stoat                  | <i>Mustela erminea</i>       |
| Brown rat              | <i>Rattus norvegicus</i>     |
| Squirrel sp.           | <i>Sciurus</i> sp.           |
| Common shrew           | <i>Sorex araneus</i>         |
| Fox                    | <i>Vulpes vulpes</i>         |
| Field vole             | <i>Microtus agrestis</i>     |
| West European hedgehog | <i>Erinaceus europaeus</i>   |

## 6 Assessment

HMP Ford supported a range of habitats, all of which are common and widespread throughout the UK. Habitats that were considered to be of negligible biodiversity value were the area of hard standing and arable land. Other habitats present were of limited value at site level only such as the amenity grassland lawns and ornamental planting beds.

The areas of semi-improved grassland, dense scrub and woodlands on site were considered to be of moderate to high biodiversity value at a local level. Two Habitats of Principle Importance (HPI) were present on site: Lowland Mixed Deciduous Woodland and Traditional Orchard. The habitats are all considered likely to support a range of associated species.

The Biodiversity Area (TN2) was covered by dense scrub and so the ponds that have been previously reported as constructed in 2008 in this area could not be confirmed as still present.

The site as a whole was considered to be of moderate biodiversity value at a local level.

## 7 Recommendations and Further Survey

The following surveys are recommended to provide additional information on the habitats and species present on site and to ensure that any proposed management is appropriate. These surveys could be repeated every few years to monitor the effects of the management, where appropriate.

- ⌘ Reptile surveys to determine the presence or absence of reptile species within suitable habitat areas on site;
- ⌘ A suite of bat surveys, including ground-level and/or climbed bat tree roost assessments, building roost assessments, emergence and re-entry surveys, roost counts and activity surveys, to determine the presence of any bat roosts in the trees or buildings on site, and the use of the site by commuting and/or foraging bats;
- ⌘ Breeding bird surveys;
- ⌘ Invertebrate surveys;
- ⌘ Dormouse presence/absence survey.

## 8 Management recommendations

It is recommended that a site Ecological Management Plan (EMP) is produced, to identify targets for biodiversity and provide detail of the management to achieve these targets. A set of management recommendations that could be included in the EMP are presented below, covering both plants and habitats and species. This is not a comprehensive list, but provides some initial suggestions as to what could be possible at the site.

### 8.1 Plants and habitats

#### 8.1.1 Biodiversity Area

This area was created in 2008 with a cluster of three ponds (TN2). No active management of this area appears to have taken place for several years, as it was covered by dense scrub. If this area were re-instated, it would likely benefit biodiversity. Most of the scrub could be cleared retaining pockets and if possible, the ponds be restored. Clearings around the ponds could be managed as wildflower grasslands with maintenance pathways cut through the vegetation. Details for management of this area should be included within the EMP.

#### 8.1.2 Grassland

The areas of mown amenity grassland could be enhanced by the following management prescriptions:

- ⌘ Planting or sowing selected areas as biodiverse lawns with a high proportion of flowering ground cover plants tolerant of frequent mowing, which would be beneficial to invertebrates, which in turn

are a food source for a variety of species. This could include native species such as Yarrow (*Achillea millefolium*), Oxeye Daisy (*Leucanthemum vulgare*) and Common Bird's-foot-trefoil (*Lotus corniculatus*); and

- ¿ Plug planting a mix of wildflowers comprising species typically found locally and of local provenance to increase the variety of plant species.
- ¿ Reducing the frequency of cutting to once or twice a year, preferably in late summer / early autumn after the majority of floral species have flowered and seeded;
- ¿ Not applying any fertilisers and removing any grass cuttings;
- ¿ Sowing Yellow-rattle (*Rhinanthus minor*), a hemi-parasite plant, which will reduce the vigour of the grasses and some wildflowers allowing more wildflowers to establish.

### 8.1.3 Woodland

The small areas of woodland within the site could be managed to increase the diversity of habitats and, as such, create niches for a variety of plant and animal species, thereby increasing biodiversity. This could be achieved by:

- ¿ Retaining suitable amounts of standing, fallen and dead wood (where possible, leaving it in situ rather than moving it, and avoiding cutting it into shorter lengths);
- ¿ Planting native shrubs within the plantation woodland, to vary the structure of the woodland;
- ¿ Using locally native species if any further planting is required. The particular inclusion of flowering and fruiting species would provide food sources for a variety of animals.

## 8.2 Species

In addition to the above, the following management recommendations could improve the suitability of the site for protected and notable species:

- ¿ Retaining dead wood and brash from any vegetation removal, and placing it in piles within sheltered areas, to provide refuge and hibernation habitats for amphibians and small mammals. These would also be of value to invertebrates. These features would be particularly valuable in the Biodiversity Area when re-instatement works begin;
- ¿ Creating invertebrate mounds as per guidance from Plantlife (n.d.) or bug hotels as per guidance from the Royal Society for the Protection of Birds (2019) to benefit invertebrates. These could be created within the grassland areas in the southern section of the site. These structures can be made with re-purposed materials such as pallets and bricks;
- ¿ Planting a diverse mix of native wildflowers to provide food sources for invertebrates. Night-scented flowers are particularly beneficial for bats as they attract their prey. Guidance is available from Bat Conservation Trust (2015). This would also provide foraging habitat for birds.
- ¿ Installing bat boxes and further bird boxes on trees and buildings and replacing any rotten or damaged ones throughout the site. Bat and bird boxes could be handmade using re-purposed timber, as has already been undertaken on site, or bought from suppliers. Guidance to make and install bat and bird boxes can be obtained from the Bat Conservation Trust (2015) and the Royal Society for the Protection of Birds (n.d.).
- ¿ Creating green walls on suitable facades, planted with native climbing species within which bat boxes, bird boxes and habitats for invertebrates (e.g. insect hotels) could be incorporated.
- ¿ Providing green / brown roof spaces on suitable buildings to create new habitats for wildlife.

## 9 Conclusions

The HMP Ford site supported habitats that are common and widespread throughout the UK. The site was split into two parcels, the residential site and the industries site. The residential site supported buildings, hardstanding roads, pathways and car parking areas with amenity grassland and introduced (ornamental) shrub planting. The 'Biodiversity Area' on the northern edge of the residential sites was covered by dense scrub.

The industries site was a commercial nursery with large areas of arable land containing polytunnels with bedding plants, tree saplings and ornamental shrubs. Two Habitats of Principle Importance (HPI) were recorded within the industries site: Lowland Mixed Deciduous Woodland and Traditional Orchard. Other habitats included buildings, scrub, semi-improved grassland, species-poor semi-improved grassland, amenity grassland and scattered trees. The 2017 Phase 1 survey report stated that dormouse was present on site (Moj, 2017) indeed there are habitats present on site suitable for supporting this species. Dormouse is a Species of Principle Importance (SPI).

The site was considered to have moderate biodiversity value at a local level.

Some habitats present were considered to have potential for supporting protected species and further surveys to ascertain the presence or absence of these species have been recommended. These included:

- ¿ Reptile presence/ absence surveys;
- ¿ Bat surveys;
- ¿ Breeding bird surveys;
- ¿ Invertebrate surveys; and
- ¿ Dormouse surveys.

It is recommended that a site EMP is produced, to identify targets for biodiversity enhancement and provide detail of the management measures required to achieve these targets.

Initial management recommendations have been made, focussed on enhancing the biodiversity value of the habitats present on site and improving the suitability of the site for protected and notable species.

Implementing these would ensure that biodiversity at the site is maintained and enhanced, thus contributing to the aims of the Moj Estates Directorate Biodiversity Policy (2018).

## 11 References

Atherton, I., Bosanquet, S. and Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland. A Field Guide. British Bryological Society.

Bat Conservation Trust (2015) Encouraging Bats. Available at:

[https://cdn.bats.org.uk/pdf/Resources/Encouraging\\_Bats.pdf?mtime=20181101151549&focal=none](https://cdn.bats.org.uk/pdf/Resources/Encouraging_Bats.pdf?mtime=20181101151549&focal=none)

CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. & Gregory, R.D. (2015). Birds of Conservation Concern 4: the Population Status of Birds in the United Kingdom, Channel Islands and Isle of Man.

Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Harris, S., Cresswell, P. and Jefferies, D. (1989). Surveying Badgers. The Mammal Society Publication No. 9. Mammal Society.

HMSO (2006). Natural Environment and Rural Communities Act 2006. Available at:

<https://www.legislation.gov.uk/ukpga/2006/16/contents>

HMSO (1981). The Wildlife and Countryside Act 1981 (as amended). Available at:

<https://www.legislation.gov.uk/ukpga/1981/69/contents>

JNCC (2010). Handbook for Phase 1 Habitat Survey: A technique for environmental audit. JNCC, Peterborough.

MAGIC (2014). Magic Interactive Mapping Application. Available at: <https://magic.defra.gov.uk>

Ministry of Justice (March 2018). Estates Directorate Biodiversity Policy. Available at:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/692532/biodiversity-policy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692532/biodiversity-policy.pdf)

Ministry of Justice (2017). Phase 1 Habitat Survey of HMP Ford. Internal document.

National Biodiversity Network (2017). NBN Atlas. Available at: <https://nbnatlas.org>

Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcott, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

Plantlife (n.d.). How to Create Invertebrate and Reptile Mounds. Available at:

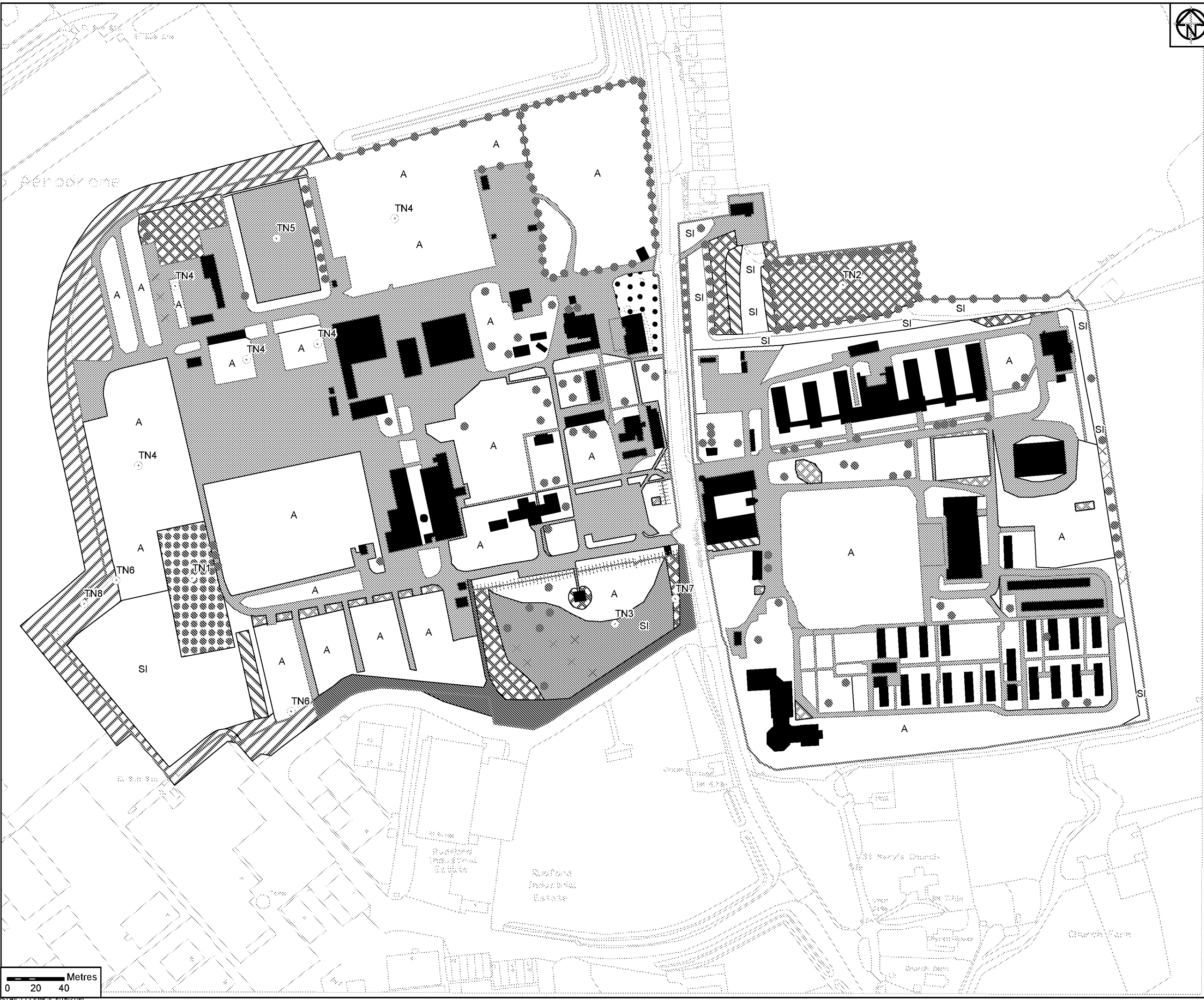
[http://www.magnificentmeadows.org.uk/assets/pdfs/How\\_to\\_create\\_an\\_earth\\_mound\\_for\\_wildlife.pdf](http://www.magnificentmeadows.org.uk/assets/pdfs/How_to_create_an_earth_mound_for_wildlife.pdf)

Royal Society for the Protection of Birds (2019). Build a Bug Hotel. Available at: <https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/>

Stace, C. (2019). New Flora of the British Isles, Fourth Edition. C&M Floristics, Stowmarket.

## Figures

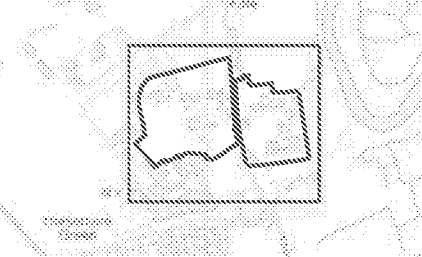
Figure 1: Phase 1 habitat survey map



- Legend**
- Site Boundary
  - Semi-natural Broad-leaved Woodland
  - Broad-leaved Plantation Woodland
  - Dense Scrub
  - Scattered Tree
  - Scattered Scrub
  - Semi-improved Neutral Grassland
  - Poor Semi-improved Grassland
  - Amenity Grassland
  - Tall Ruderal
  - Introduced Shrub
  - Species-poor Native Hedgerow
  - Standing Water
  - Arable
  - Hardstanding
  - Buildings
  - Bare Ground
  - Target Note

- NOTES:**
- 1.This plan is derived from a Land Registry digital conversion and is illustrative only.
  - 2.Please refer to the individual title plans for precise features of the estate.

© Crown copyright and database rights 2019  
Ordnance Survey 0100031673



|     |        |           |                     |       |         |          |
|-----|--------|-----------|---------------------|-------|---------|----------|
| 01  | S2     | 28-04-20  | Initial Issue       | YG    | RT      | GS       |
| Rev | Status | Rev. Date | Purpose of revision | Drawn | Checked | Approved |

Client  
 Ministry of Justice

Designer  
 ARCADIS  
Registered office:  
Arcadis House  
54 York Way  
London  
N1 8AB  
Coordinating office:  
2 Glass Wharf  
Bristol  
BS2 0PR

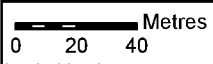
Project  
MoJ Provision of Ecological Consultancy

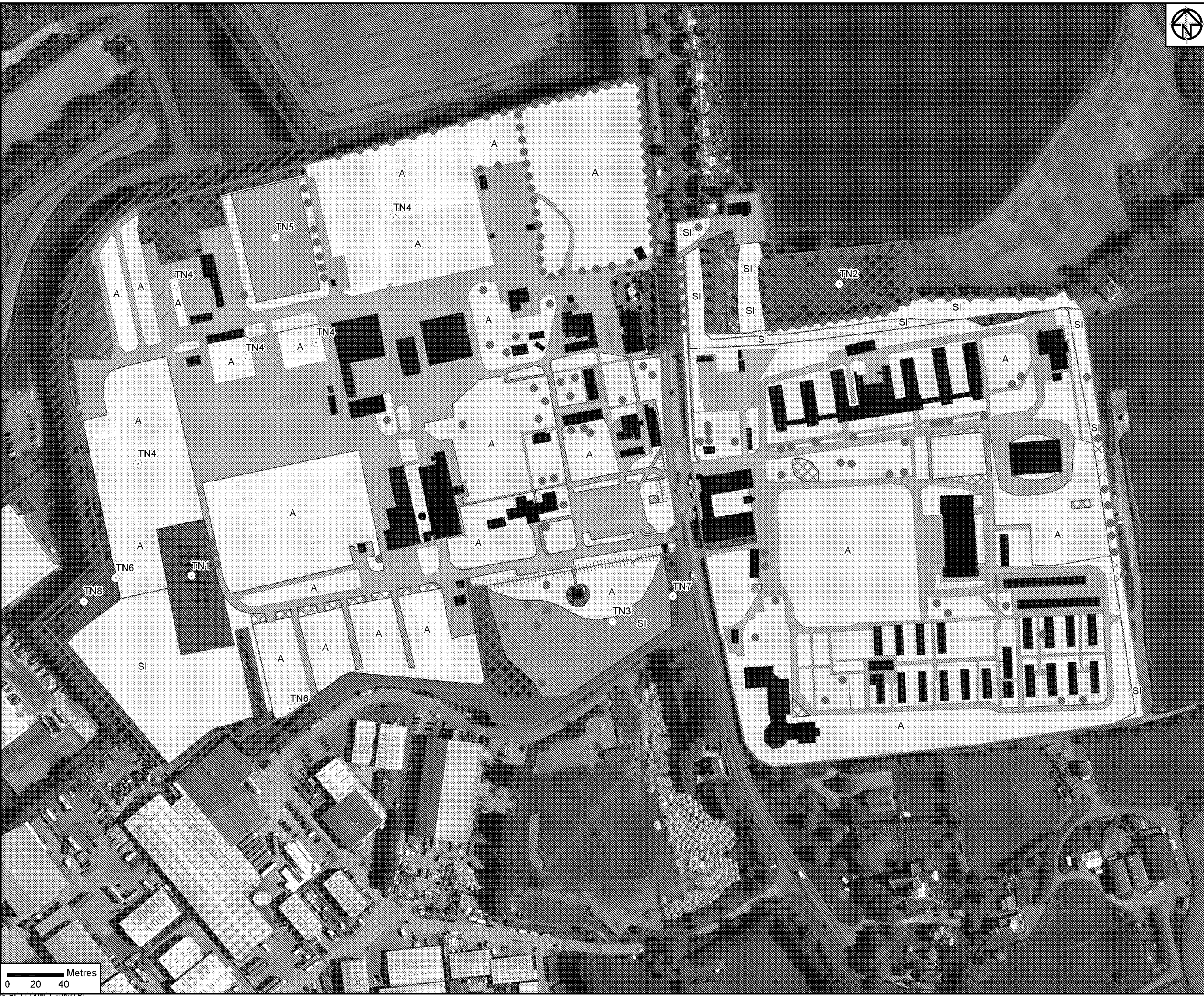
Drawing Title  
**HMP FORD -  
PHASE 1 HABITAT MAP**

|        |         |          |            |
|--------|---------|----------|------------|
| Status | S2      | Revision | 01         |
| Scale  | 1:2,500 | Date     | 28-04-2020 |

Drawn By: Yogesh Giri  
Checked By: Rothera Thomas  
Approved By: Guy Stone  
PINS No.

Drawing number: 001 P10 | Designer | Volume | Location | Type | Plot | Number





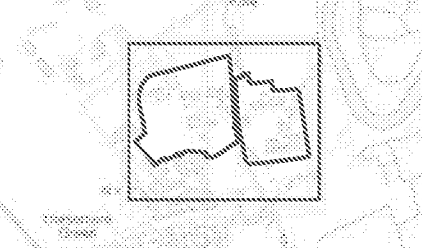
- Legend**
- Site Boundary
  - Semi-natural Broad-leaved Woodland
  - Broad-leaved Plantation Woodland
  - Dense Scrub
  - Scattered Tree
  - Scattered Scrub
  - Semi-improved Neutral Grassland
  - Poor Semi-improved Grassland
  - Amenity Grassland
  - Tall Ruderal
  - Introduced Shrub
  - Species-poor Native Hedgerow
  - Standing Water
  - Arable
  - Hardstanding
  - Buildings
  - Bare Ground
  - Target Note

**NOTES:**

1.This plan is derived from a Land Registry digital conversion and is illustrative only.

2.Please refer to the individual title plans for precise features of the estate.

© Crown copyright and database rights 2019  
Ordnance Survey 0100031673



|     |        |           |                     |       |         |          |
|-----|--------|-----------|---------------------|-------|---------|----------|
| 01  | S2     | 28-04-20  | Initial Issue       | YG    | RT      | GS       |
| Rev | Status | Rev. Date | Purpose of revision | Drawn | Checked | Approved |

Client

**Ministry of Justice**

Designer

**ARCADIS**

Registered office:  
Arcadis House  
54 York Way  
London  
N1 8AB

Coordinating office:  
2 Glass Wharf  
Bristol  
BS2 0PR

Project

**MoJ Provision of Ecological Consultancy**

Drawing Title

**HMP FORD -  
PHASE 1 HABITAT MAP**

|                |             |          |            |
|----------------|-------------|----------|------------|
| Status         | S2          | Revision | 01         |
| Scale          | 1:2,500     | Date     | 28-04-2020 |
| Drawn By       | Yogesh Giri |          |            |
| Checked By     | Ruth Thomas |          |            |
| Approved By    | Guy Stone   |          |            |
| PINS No.       |             |          |            |
| Drawing number | 001         | 01       | 01         |

## APPENDIX A

### Phase 1 habitat survey TN

The TN are indicated by red numbers of Figure 1

| Target Note | Description                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TN1         | Area of Traditional Orchard HPI supporting various types of Apple ( <i>Malus</i> sp.) trees.                                                                                                 |
| TN2         | Designated 'Biodiversity Area' overgrown with dense scrub, the 2017 report indicates that three ponds were created in this area, but the vegetation was too dense to confirm their presence. |
| TN3         | Smaller biodiversity area used as a park for staff with scattered trees and semi-improved grassland surrounded by broadleaved woodland (Lowland Mixed Deciduous Woodland HPI).               |
| TN4         | Areas of polytunnels and greenhouses within the commercial nursery on site.                                                                                                                  |
| TN5         | Reservoir provides water for irrigation for the nursery.                                                                                                                                     |
| TN6         | Wood and log piles present within the industries site.                                                                                                                                       |
| TN7         | Large insect hotel within scrub in the south east corner of the industries site.                                                                                                             |
| TN8         | Barn owl box within the plantation woodland.                                                                                                                                                 |

## APPENDIX B

### Photographs



Photograph 1: Traditional Orchard HPI within the industries site (TN1)



Photograph 2: Large expanse of amenity grassland within the residential site



Photograph 3: Poor semi-improved grassland within the industries site.



Photograph 4: Large greenhouse with bedding plants within the arable area of the industries site (TN4).



Photograph 5: Reservoir within the industries site (TN5).



Photograph 6: Wood pile within the industries site suitable for reptile hibernation feature (TN6)

Moj Provision of Ecological Consultancy  
Phase 1 Habitat Survey - HMP Ford



Photograph 7: Barn owl box within the plantation woodland on the western side of the industries site (TN8).



Photograph 8: Amenity grassland lawns between the building in the industries site



Photograph 9: Example of ornamental planting and introduced shrubs within the residential site.



Photograph 10: Hardstanding car parking area within the industries site.

Moj Provision of Ecological Consultancy  
Phase 1 Habitat Survey - HMP Ford

Arcadis (UK) Limited

Level 1  
2 Glass Wharf  
Temple Quay  
Bristol  
BS 2 0FR

