
Kronospan North Access Road
on behalf of Axis PED
Environmental Statement
Appendix 7.1: Baseline Ecology Report



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1 INTRODUCTION

1.1 Background

1.1.1 This appendix has been prepared to accompany ES Chapter 7: Biodiversity and Nature Conservation.

1.1.2 It identifies and describes baseline habitats, protected and/or notable flora and fauna, which may be impacted by the Proposed Development.

1.1.3 It should be read with reference to **Figure 7.1** to **Figure 7.8** presented in Volume 2 of the ES and the following additional appendices presented in Volume 3:

- Appendix 7.2 Breeding Bird Survey
- Appendix 7.3: Great crested Newt eDNA Survey; and
- Appendix 7.4 Otter and Water Vole Survey

2 METHODOLOGY

2.1 Desktop Study

2.1.1 A desktop study was undertaken to identify any known existing features or species of ecological importance within the study area (as defined below).

2.1.2 The desk study included a review of relevant policy and guidance and sought to identify any statutory designated sites for nature conservation through a review of the Natural Resource Wales, JNCC, Multi Agency Geographic Information for the Countryside (MAGIC)¹ websites and Lle Geo-Portal website². A 5km search radius surrounding the Application Site boundary was adopted for all statutory designated sites, extending to 10km for international protected sites.

2.1.3 The search for statutory designated sites included the following:

- Internationally Designated Sites:
 - Special Protection Areas (SPA) and potential SPA;
 - Ramsar Wetlands of International Importance (Ramsar) and proposed Ramsar; and,
 - Special Protection Areas (SAC) and possible SAC
- Nationally designated Sites:
 - Sites of Special Scientific Interest (SSSI);
 - National Nature Reserve (NNR); and,
 - Local Nature Reserve (LNR).

2.1.4 Biological records data on non-statutory designated sites and records of protected and notable species was requested from Cofnod³ the local record centre for North Wales. The search area comprised a 2km radius from the Application Site boundaries.

2.1.5 Throughout this report only recent records of notable species have been used, defined as those dating within the last 10 years.

2.1.6 The Ancient Woodland Inventory was accessed through MAGIC and Lle to determine the presence and location of ancient woodland blocks recorded on the inventory, and the Woodland Trust Ancient Tree Inventory⁴ was consulted for locations of individual ancient or veteran trees.

2.1.7 The MAGIC website also includes details of granted EPS license applications in England (registered up to January 2022) and great crested newt class license return results in England (registered up to August 2022). A 2km search radius around the Site boundary was adopted for EPS license and class license returns.

¹ <https://magic.defra.gov.uk/>

² <http://lle.gov.wales>

³ <https://www.cofnod.org.uk/Home>

⁴ <https://ati.woodlandtrust.org.uk/>

2.1.8 Reference was also made to Ordnance Survey maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area.

2.2 Field Survey

2.2.1 A habitat survey of the Application Site was undertaken on the 13th January 2022 by Mr K. Love *BSc (Hons)*, a suitably qualified and experienced ecologist. The survey followed the methodology outlined in the UK Habitat Classification Use Manual (V1.1) (UKHab, 2020⁵) with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM), Technical Guidance Series *Guidelines for Preliminary Ecological Appraisal – Version 2* (CIEEM, 2017⁶).

2.2.2 The study area comprised the Application Site and immediately adjacent habitats (e.g., hedgerows).

2.2.3 During survey all habitats within the study area were mapped and described using a series of ‘target notes’ (TNs).

2.2.4 The survey was also extended to include the additional recording of specific features indicating the presence, or likely presence, of protected faunal species, invasive species and other species of conservation significance.

2.2.5 Trees were inspected for their potential to support roosting bats from ground level and valued following the descriptions provided within Collins (2016)⁷:

- Low: A tree of sufficient size and age to contain potential roost features (PRFs) but with none seen from the ground or features seen with only very limited roost potential
- Moderate: A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status
- High: A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

2.2.6 Habitats within the Stie were assessed for their potential suitability for foraging and commuting bats and valued following the descriptions provided within Collins (2016):

- Low: Suitable but isolated habitat that could be used by small numbers of bats
- Moderate: Continuous habitat connected to the wider landscape
- High: Continuous, high-quality habitat that is well connected to the wider landscape. Habitats close to and connected to known roosts.

⁵ Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at www.ukhab.org

⁶ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal – Second Edition - <https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea/>

⁷ Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. The Bat Conservation Trust, London.

2.3 Limitations

- 2.3.1 The survey methodology employed does not seek to provide a detailed botanical survey or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of an area in order to:
- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
 - Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).
- 2.3.2 The survey was undertaken in January 2022 and therefore outside the optimal period for botanical surveys (approximately April to September) limiting the number of species that can be accurately identified. However, the habitat types could still be accurately classified. Therefore, due to the limited range of habitat types present within the Application Site, the timing of the surveys is not considered to represent a significant constraint.
- 2.3.3 During the survey in January 2022 a small are of the Site was not able to be accessed. Broad habitat types were however recorded during the survey and therefore the exclusion of this small area is not considered to be substantial limitation when the assessing the habitats present within the Application Site.

3 BASELINE

3.1 Designated Sites for Nature Conservations

Statutory Designated Sites

- 3.1.1 A review of MAGIC identified the Application Site does not form part of, or is situated adjacent to, any statutory designated site for nature conservation.
- 3.1.2 Four internationally designated sites are located within 10km and a further four nationally designated sites are located within 5km of the Application Site. The closest site, Bryniau Clwyd a Dyffryn Dyfrdwy / Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB), is located approximately 450m west from the Application Site.
- 3.1.3 SSSI Impact Risk Zones (IRZ) are publicly accessible for SSSI in England only, however the Application Site does lie within a SSSI IRZ in relation to the River Dee SSSI and the Proposed Development is considered to fall within the assessment category for Infrastructure as it is a transport proposal for including new road. Therefore, the Local Authority should consult the relevant statutory conservation organisation(s) on the potential for impacts to the River Dee SSSI.
- 3.1.4 Statutory designated sites are summarised in **Table 3.1** below, and locations are shown on **Figure 7.2** in Volume 2 of the ES.

Table 3.1: Statutory Designated Sites for Nature Conservation

AONB: Area of Outstanding Natural Beauty; SSSI: Site of Special Scientific Interest; LNR: Local Nature Reserve; SAC: Special Area of Conservation; SPA: Special Protection Area.

Site Name	Designation	Distance and Direction from Application Site	Description
Bryniau Clwyd a Dyffryn Dyfrdwy / Clwydian Range and Dee Valley	AONB	450m west	The Clwydian Range and Dee Valley form a dramatic upland frontier in North Wales, with scenic landscapes, dramatic summits and historic towns and villages.
Chirk Castle and Parkland	SSSI	940m south-west	Designated for being one of the best examples of ancient wood pasture and parkland in Wales. It contains a large number of veteran and ancient trees. It is also of interest for the important invertebrates that the trees support. Breeding roosts of lesser horseshoe bat <i>Rhinolophus hipposideros</i> are present within the castle buildings. One area of grassland supports a diverse assemblage of grassland fungi which is of special interest and of national importance, including 15 species of waxcap <i>Hygrocybe</i> spp.
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid	SAC	1.26km north	Designated features: <ul style="list-style-type: none"> Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Atlantic salmon <i>Salmo salar</i> Floating water-plantain <i>Luronium natans</i> Sea lamprey <i>Petromyzon marinus</i>

Site Name	Designation	Distance and Direction from Application Site	Description
			<ul style="list-style-type: none"> • Brook lamprey <i>Lampetra planeri</i> • River lamprey <i>lampetra fluviatilis</i> • Bullhead <i>Cottus gobio</i> • Otter
Afon Dyfrdwy (River Dee)	SSSI	1.26km north	Designated for its range of river habitat types and saltmarsh transition habitats. Supports a diverse flora community including populations of floating water plantain, slender hare's-ear <i>Bupleurum tenuissimum</i> , sea barley <i>Hordeum marinum</i> and hard-grass <i>Parapholis strigose</i> . Also important for animal species such as otter, salmon, bullhead, brook lamprey, river lamprey, sea lamprey, club-tailed dragonfly <i>Gomphus vulgatissimus</i> and other aquatic invertebrates.
Nant-Y-Belan and Pynela Woods	SSSI	1.60km north-east	Significant area of semi-natural woodland in an area largely affected by replanting with conifers and non-native hardwoods.
Lfton Meadows	LNR	2.73km south-east	Former colliery now supporting a variety of habitats including woodland, stream and grassland.
Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains	SAC	5.09km north-west	<p>Features of interest</p> <ul style="list-style-type: none"> • Hen harrier <i>Circus cyaneus</i> (breeding) • Red kite <i>Milvus milvus</i> (breeding) • Merlin <i>Falco columbarius</i> (breeding) • Peregrine <i>Falco Peregrinus</i> (breeding) • Golden plover <i>Pluvialis apricaria</i> (breeding) • Short eared owl <i>Asio flammeus</i> (breeding)
Johnstown Newt Sites	SAC	5.68km north-east	Designated for its great crested newt (GCN) population.
Berwyn	SPA	9.09km west	<p>Features of interest</p> <ul style="list-style-type: none"> • Blanket bog • Plants in crevices in base-rich rocks • Dry heath • Dry grasslands and scrublands on chalk or limestone • Wet mires ('quaking' surfaces)

Non-statutory Designated Sites

3.1.5 A review of data provided by Cofnod indicates the Application Site is not within any non-statutory designated sites.

3.1.6 Coed Y Camlas/Canal Woods Wildlife Site is the closest Wildlife Site located within 2km of the Application Site, located approximately 200m south-west from the Application Site.

- 3.1.7 Non-statutory designated sites are summarised in **Table 3.2** below, and locations are shown on **Figure 7.3** in Volume 2 of the ES.

Table 3.2: Non-statutory Designated Sites for Nature Conservation.

Site Name	Designation	Distance and Direction from Application Site	Description
Coed Y Camlas/Canal Woods	Local Wildlife Site	200m south-west	Semi-natural broad-leaved woodland on embankments either side of the canal. The canopy is dominated by sycamore <i>Acer pseudoplatanus</i> , but ash <i>Fraxinus excelsior</i> is abundant and sessile oak <i>Quercus petraea</i> and birch <i>Betula sp.</i> are frequent. In the understorey hawthorn <i>Crataegus monogyna</i> is frequent with hazel <i>Corylus sp.</i> , elder <i>Sambucus sp.</i> and elm <i>Ulmus Ulex sp.</i>
Barracks Field	Local Wildlife Site	730m east	Tall coarse semi-improved neutral grassland dominated by cock'sfoot <i>Dactylis glomerata</i> , with abundant tall oat grass <i>Arrhenatherum elatius</i> and scattered gorse <i>Ulex sp.</i> scrub, black knapweed <i>Centaurea nigra sp.</i> and nettles <i>Urtica dioica sp.</i>
Ty Mawr and Tan y Cut Wood	Local Wildlife Site	1.45km north-east	No information available
Bolas dingle	Local Wildlife Site	1.78km east	No information available.

3.2 Priority Habitats

- 3.2.1 Review of the MAGIC and Lle websites, together with information sourced from Cofnod and the extended habitat survey, identified one habitat of Principal Importance (also known as priority habitat) within the Application Site and five within 2km of the Application Site boundary. Priority habitats are listed under Section 7 of the Environment (Wales) Act 2016 (S7) and/or the UKBAP.
- 3.2.2 Priority habitats as identified in the review of MAGIC and Lle websites are presented in **Table 3.3** below. Where numerous records of a particular habitat were recorded, only the closest record to the Application Site has been provided, in order to provide context for the Application Site and surrounding area.
- 3.2.3 The lagoons within the existing Kronospan site are not considered to meet the definition of priority ponds.

Table 3.3: Priority Habitats

Priority habitat name	Designation	Distance from site
Hedgerow	EW S.7, UKBAP, LBAP	Within the Site
Rivers	EW S.7, UKBAP, LBAP	Adjacent to the western and northern Site boundaries.
Traditional orchard	EW S.7, UKBAP, LBAP	675m south-east
Wood pasture and parkland	EW S.7, UKBAP, LBAP	1.05km south-east

Key

EW S.7: Environment (Wales) Act Section 7

3.3 Ancient and Irreplaceable Habitats

- 3.3.1 A veteran sycamore *Acer pseudoplatanus* tree (TN1 in **Table 3.4**; Photograph 5 in **Annex 1**) was located within the Application Site during the extended habitat survey.
- 3.3.2 No ancient woodland or other potentially irreplaceable habitats such as peaty soils were identified within or in close proximity to the Application Site. In the wider area, restored ancient woodland was located within 163m south-west, with ancient semi natural woodland located 485m north and plantation on an ancient woodland site positioned 725m north-east. A number of notable, veteran and ancient trees are located approximately 900m south-west in the Coed Y Camlas/Canal Woods LWS. Many notable, veteran and ancient trees representing a diverse range of species are also located 1km west of the Application Site in parkland and woodland associated with the National Trust owned Chirk Castel Estate.

3.4 Onsite Habitats

- 3.4.1 This section should be read in conjunction with the Habitat Plan presented as **Figure 7.4** in Volume 2 of the ES, as well as with photographs presented in **Annex 1** and Target Notes in **Table 3.4**.
- 3.4.2 The Application Site primarily comprises three modified grassland pasture fields that were grazed by sheep at the time of the survey (Photograph 1). The fields border the B5070 road and all incorporate an approximately 10m wide fenced off area of grassland adjacent to the eastern field boundary hedgerow. This fenced off area of grassland contains approximately seven rows of immature hawthorn *Crataegus monogyna* tree plantings (Photograph 2).
- 3.4.3 Fields are mostly bounded by a combination of post and wire fencing and species-poor hedgerow (Photograph 3). Hedgerows include managed, intact hedgerows ranging between 1.5m to 2m tall by 1.5m wide, as well as unmanaged hedgerows of approximately 4m to 5m tall by 2m wide. Hedgerows are dominated by blackthorn *Prunus spinosa*, with hazel *Corylus avellana*, elder *Sambucus nigra*, hawthorn and holly *Ilex aquifolium* also present. Some sections of hedgerow contain scattered trees of the forementioned hedgerow species assemblage.
- 3.4.4 The Afon Bradley flows north adjacent to the western and northern Application Site boundaries (Photograph 3). The stream is 1m to 1.5m wide and shallow throughout. Low banksides predominately include sections of hedgerow, as well as a line of pine *Pinus* sp. trees (Photograph 4) at the northern Application Site boundary. A veteran sycamore tree (TN1) is located on the stream bankside within the Site (Photograph 5).
- 3.4.5 Two northern fields bordering the eastern Application Site boundary contain a small area of mixed deciduous woodland plantation dominated by immature and semi-mature trees (Photograph 6). Tree species include birch *Betula pendula*, hawthorn, hazel, holly, blackthorn, poplar *Populus* sp. and pine. Bramble *Rubus* sp. and dogrose *Rosa canina* are scattered throughout the understory.

Table 3.4 Target Notes

Map Ref.	Details
TN1	Veteran sycamore tree with multiple holes and cracks. Moderate bat roost potential (Photograph 5).

3.5 Protected and Notable Species

Bats – Roosting and Foraging

- 3.5.1 No records of bat were returned by Cofnod within 2km of the Application Site for the most recent ten year period and a review of MAGIC identified no granted European protected species application (England) for bats within 2km of the Application Site.
- 3.5.2 In line with the guidance provided in Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed)⁸, the field boundary habitats within the Application Site have high foraging and commuting value for bats as the Application Site and directly adjacent land includes features such as hedgerow, line of trees, watercourses and woodland. Heavily grazed modified grassland fields are considered to have negligible value. Habitats in the wider area such as woodlands and potentially neutral grasslands may provide further opportunities for foraging and commuting bats, as well as key linear features such as the River Dee, Llangollen Canal (and waterway associated green linear features), hedgerows and railway line associated tree lines.
- 3.5.3 During the extended habitat survey, a veteran sycamore tree (TN1) with several holes and cracks was detected within the Application Site's southern pasture field bordering the Afon Bradley. The tree was considered to have moderate bat roost potential following a ground-based assessment.

Badger

- 3.5.4 A total of four recent records of badger were returned by Cofnod. Of these, three records included observations (including roadkill), whereas one record involved badger field signs. An adult badger roadkill was returned within the Application Site along the B5070 during 2021, whereas the three other badger records were outside of the Application Site boundary.
- 3.5.5 During survey, a disused badger sett was identified within the Application Site as shown on **Figure 7.7**. This consisted a single, north facing hole blocked at the entrance by vegetation. No other evidence to suggest badger presence was recorded within the Application Site.
- 3.5.6 It is possible that badgers are present within the wider surrounding area, and it is possible that the species may occasionally utilise suitable habitats such as hedgerow bases and woodland within the Application Site.

Hazel Dormouse

- 3.5.7 No records of hazel dormouse *Muscardinus avellanarius* were returned within 2km of the Application Site.
- 3.5.8 Potentially suitable habitat is restricted only to species-poor hedgerows as woodland areas offered little understory. Overall due to the lack of recent records and presence of only sub-optimal habitats within the Application Site with little connectivity to larger areas of more suitable habitat, hazel dormice are considered likely to be absent from the Application Site.

Amphibians and Reptiles

- 3.5.9 The Cofnod data search identified ten recent records of amphibian and one record of reptile within 2km of the Application Site. No records were identified within the Application Site itself.

⁸ <https://www.bats.org.uk/resources/guidance-for-professionals/bat-surveys-for-professional-ecologists-good-practice-guidelines-3rd-edition>

- 3.5.10 The returned amphibians included one common toad *Bufo bufo*, two common frog *Rana temporaria*, three palmate newt *Lissotriton helveticus*, two smooth newt *Lissotriton vulgaris* and two unidentified newts (Palmate or Smooth) *Lissotriton* sp. The closest amphibian records are located 190m east of the Application Site and include three observations comprising common toad, common frog and smooth newt. A single reptile record included two slow-worms *Anguis fragilis* approximately 1.35km south of the Application Site.
- 3.5.11 eDNA surveys of lagoons within the existing Kronospan site returned negative results for great crested newt. No other waterbodies are present within 250m of the Application Site, with one additional pond located approximately 370m west of the application Site separated by the Llangollen canal. This pond is considered likely to be unsuitable for GCN breeding due to the presence of an in and outflow.
- 3.5.12 The Application Site is generally unsuitable for amphibian and reptile species being comprised of grazed agricultural grassland with little variation in vegetation structure. However the Afon Bradley, the small copse of woodland plantation and areas of long grass containing recently planted tree saplings within the Application Site provide some foraging and commuting opportunities for amphibians and reptiles.

Other notable Species

- 3.5.13 A number of records were returned by Cofnod for other notable species including polecat *Mustella putorius*, brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus* within 2km of the Application Site. Habitats within the Application Site are considered suitable for these species.
- 3.5.14 A single record of eel *Anguilla anguilla* was also returned by Cofnod, originating from the Llangollen Canal, approximately 230m west of the Application Site.
- 3.5.15 At the time of the habitat survey it was considered unlikely that eel could enter the connected Afon Bradley due to the low water levels present and culverts presenting a barrier to eel dispersal.
- 3.5.16 No notable invertebrate species were returned within the Application Site; however, 14 species were returned in the wider search area which predominantly comprised Lepidoptera species.
- 3.5.17 The habitats within the Application Site are not considered to be of a floristic or structural quality which could support significant assemblages of invertebrates or other notable species.

Invasive Non-native Species

- 3.5.18 Records returned by Cofnod included no invasive non-native species in the wider 2km search area.
- 3.5.19 No invasive non-native species were noted during habitat survey.

Annex 1: Photographs

Photographs	
	
<p>Photo 1: Modified grassland pasture field with the Kronospan facility located in the distance.</p>	<p>Photo 2: Fenced off area of modified grassland containing recently planted tree saplings.</p>
	
<p>Photo 3: Species-poor hedgerows adjacent to the Afon Bradley.</p>	<p>Photo 4: Line of conifer trees adjacent to the northern Application Site boundary</p>
	
<p>Photo 5: TN1- Veteran sycamore tree with moderate bat roost potential.</p>	<p>Photo 6: Small area of mixed deciduous woodland plantation.</p>