John Walter Burke of Rhatigan Architects
Russborough House,
Newtownholmes Road,
Caltragh,
Co. Sligo
F91 YY13
Date: 19th April 2024

RE: AEMP 310 (RA-T6) Ecological Statement: Caltragh LRD, Newtownholmes Road, Caltragh, County Sligo

Dear Mr John Walter Burke,

This ecological statement has been produced by AVRIO Environmental Management for the proposed development located at Newtownholmes Road, Caltragh, Co. Sligo (IGR: G 68897 34438). The proposed development includes:

- Construction of 118 no. residential units to include; 8 no. 2 bedroom semi-detached houses, 40 no. 3 bedroom semi-detached houses, 41 no. 4 bedroom detached houses, 1 no. 5 bedroom semi-detached house, 8 no. 1 bedroom apartments, 20 no. 2 bedroom apartments;
- Development of 1 no. creche facility with associated outdoor play areas and parking;
- Ancillary structures including ESB substation and associated switch rooms, bicycle, and bin stores
- Provision of public and communal open spaces, private open space, site landscaping, public lighting, footpaths, roads, parking, foul and surface water drainage, and all associated site development works;
- The application includes provision 2 no. access roads and construction of footpath & cycle path along the Newtownholmes Road;

The location of the site is provided in Figure 1, attached as an Appendix to this report. This application also aims to achieve Biodiversity Net Gain; this is discussed further in the report.

A site visit was undertaken by Amy Gallagher, BSc (Hons), MSc, QCIEEM, an ecologist at AVRIO Environmental Management. She has over 4 years of experience in the ecological sector. Amy has experience contributing to Ecological Impact Assessments (EcIA), including assessments for priority species such as Bats, Badgers, Otters, Red Squirrel, Pine Marten, Marsh Fritillary, Dragonfly and Damselfly, and habitats assessments including Phase I and Fossitt Habitat Surveys. Amy has experience in Habitat Regulation Assessment (HRA/AASR/NIS), Invasive Species Surveys and Management, and the production of site-specific mitigation proposals for various developments throughout Northern Ireland and the Republic of Ireland. Amy is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Survey assistance was provided by Katie Teague who is a placement student at AVRIO Environmental Management. Katie is currently undertaking an undergraduate degree in Environmental Management from Queens University Belfast. Katie has been undertaking environmental surveys in Northern Ireland and the Republic of Ireland since 2022, including Preliminary Ecological Appraisal (PEA), Preliminary Roost Assessments (PRA) and bat emergence/re-

entry surveys on a variety of sites. Katie has experience contributing to habitat assessments including Phase I and Fossitt Habitat Surveys. Additionally, Katie has experience contributing to Habitat Regulation Assessment (HRA/AASR/NIS) and Invasive Species Surveys for a range of developments throughout Northern Ireland and the Republic of Ireland.

This statement was produced by Callum Neill. Callum is an ecologist at AVRIO Environmental Management. Callum has a master's degree in marine biology from Queen's University Belfast. Callum has been undertaking environmental surveys in Northern Ireland and the Republic of Ireland since 2020 including Preliminary Ecological Appraisal (PEA), Preliminary Roost Assessments (PRA) and bat emergence/re-entry surveys on a variety of sites. Callum also has vast experience in leading intertidal and at-sea/marine surveys, working for various non-governmental organisations and academic institutions. Callum has experience contributing to habitat assessments including JNCC Phase I Habitat Surveys and Fossitt Habitat Surveys as well as producing a range of ecological reports including Preliminary Ecological Appraisals, Invasive Species Management Plans, Habitat Regulation Assessments (HRA/AASR/NIS).

The site is located approximately 1km south of Sligo City centre, 5.5km northeast of Ballysadare town centre, and 115km northeast of Galway city centre (IGR: G 68897 34438). To the north of the site is the Caltragh Roundabout and Caltragh Road, as well as residential housing, and improved grassland and hedgerows. To the east of the site is residential housing and commercial buildings associated with the area of Caltragh. To the south of the site is improved grassland, Carraroe Retail Park, and the N4 carriageway. To the west is the N4 roadway, improved grassland, treelines, and hedgerows. The site itself consists of improved grassland, hedgerows, and treelines.

The application site is located within 2km of 2-no. European-designated sites. Cummeen Strand SPA is located 1.75km to the north of the site, and Lough Gill SAC is 2km east of the site. The site is not located within 1km of any nationally designated sites, with the closest Slieveward Bog NHA 6.6km southwest of the site.

A search of records held on the NBDC website revealed the following protected species within the 2km grid square incorporating the site:

- Brown Long-eared Bat (*Plecotus auritus*) – Last Recorded 31/12/2009;
- Common Frog (*Rana temporaria*) – Last Recorded 19/02/2017;
- Common Pipistrelle (*Pipistrellus pipistrellus*) – Last Recorded 31/12/2009;
- Common Seal (*Phoca vitulina*) – Last Recorded 05/12/2012;
- Daubenton's Bat (*Myotis daubentonii*) – Last recorded 19/08/2014;
- Eurasian Badger (*Meles meles*) - Last recorded 02/03/2015;
- Eurasian Pygmy Shrew (*Sorex minutus*) – Last recorded 22/06/2015;
- Eurasian Red Squirrel (*Sciurus vulgaris*) - Last recorded 01/04/2023;
- European Otter (*Lutra lutra*) - Last recorded 03/12/2015;
- Grey Seal (*Halichoerus grypus*) – Last Recorded 30/01/2014;
- Irish Hare (*Lepus timidus subsp. hibernicus*) – Last Recorded 03/06/2015;
- Lesser Noctule (*Nyctalus leisleri*) – Last Recorded 18/08/2013;
- Marsh Fritillary (*Euphydryas aurinia*) – Last Recorded 31/12/2010;

- Natterer's Bat (*Myotis nattereri*) – Last recorded 31/12/2009;
- Pine Marten (*Martes martes*) – Last Recorded 07/09/2021;
- Soprano Pipistrelle (*Pipistrellus pygmaeus*) – Last Recorded 18/08/2013; and,
- West European hedgehog (*Erinaceus europaeus*)—Last recorded 11/09/2022.

A search of records held on the NBN Atlas website revealed the following protected species within a 5km grid square incorporating the site:

- European Otter (*Lutra lutra*) - Last Recorded 1956.

A survey of the site was undertaken on the 18th of December 2023. The weather during the survey was dry and overcast. There were no limitations during the survey. The site was surveyed in accordance with standard guidance produced by Fossitt, BCT, NPWS, and CIEEM for habitats, Bats (preliminary survey only), Badgers, Otters, breeding Bird habitat suitability, and habitat suitability for Common Lizard, Smooth Newt, Common Frog, and Butterfly. The site was walked, and habitat features were noted. The site consists of Improved Agricultural Grassland (GA1), Wet Grassland (GS4), Scrub (WS1), Treelines (WL2), Hedgerows (WL1), Stone Walls and Other Stonework (BL1), Underground Artificial Habitats (EU2), Scattered Trees and Parkland (WD5), Buildings and Artificial Surfaces (BL3), and Refuge and Artificial Waste (ED5). Ornamental/Non-Native Shrub (WS3) was identified outwith the eastern site boundary. A Dry Ditch was identified outwith the western site boundary. Figure 2 in the appendix illustrates the habitats recorded on-site.

Picture 1: Improved Agricultural Grassland (GA1) on-site

Picture 2: Wet Grassland (GS4) on-site

Picture 3: Scrub (WS1) on-site

Picture 4: Treelines (WL2) on-site

Picture 5: Hedgerow (WL1) on-site

Picture 6: Ornamental/non-native Shrub (WS3) – Buddleia outwith the eastern site boundary

Picture 7: Stonewalls and Other Stonework (BL1) and Buildings and Artificial Surface (BL3) on-site

Picture 8: Underground Artificial Habitats (EU2) on-site

Picture 9: Scattered Trees and Parkland (WD5) on-site

Picture 10: Refuge and Artificial Waste (ED5) on-site

As mentioned previously, the application aims to achieve Biodiversity Net Gain as a result of the development; this is an approach to development management that leaves biodiversity of a site in a measurably better state than before the development took place[1]. Habitats removed as a result of works on-site are compensated into the design plans for the site, to ensure impacts to site and local biodiversity are mitigated for. The distinctiveness of a habitat is assessed on its species richness and rarity, its ability to support species which other habitats cannot, and its level of

[1] Biodiversity Net Gain Brochure – Natural England

protection. Standardised Habitats Scores (SHS) have been developed by Department for Environment Food & Rural Affairs[2]; lower scores indicate habitat with a lesser importance etc.

The majority of the site consists of Improved Agricultural Grassland (GA1), which includes common species such as Creeping Buttercup (*Ranunculus repens*), Ribwort Plantain (*Plantago lanceolata*), and Creeping Bent (*Agrostis stolonifera*). There are also patches of Wet Grassland (GS4) to the western site boundary, where Soft Rush (*Juncus* effusus), Meadow Sweet (*Filipendula ulmaria*), and Pondwater Starwort (*Callitriche stagnalis*) were noted. When considered in unison, 31,934.98m² of grassland will be removed in accordance with current site plans. These habitats lack biodiversity, and offer limited suitability to protected fauna; additionally, they are widespread throughout the surrounding environs. They have been assessed as having a distinctiveness rating of "2", described as "low". To compensate for this loss, 3575m² of native Wildflower meadows have been incorporated into the design plans. This habitat provides suitable foraging resources for invertebrates and provides suitable habitat for small priority mammals and Common Lizard[3]; it has a distinctiveness rating of "8", described as "very high". Overall, a Biodiversity Net Gain of -55.3% is achieved for this habitat. This is described in Table 1-1 below.

Table 1-1: Biodiversity Net Gain of Grassland Habitat

Habitat	Area Lost/Gained (m²)	Distinctiveness (Natural England)	Score (Distinctiveness x Area)
Grassland (Removal)	31,934.98	2 (Low Distinctiveness)	63,869.96
Wildflower Meadows (Planting)	3575	8 (Very High Distinctiveness)	28,600
Percentage: **55.3% Loss** in terms of Biodiversity Net Gain			

Scrub (WS1) was identified throughout the site, consisting of native species such as European Bramble (*Rubus fruticosus*), Male Fern (*Dryopteris filix-mas*), Common Nettle (*Urtica dioica*), and Mouse-ear Chickweed (*Cerastium fontanum*). 4561.56m² of this habitat will be removed in accordance with current site plans. Scrub habitat is assessed as being of moderate ecological value at the site level, as it may be utilised by nesting/breeding birds, or as part of an ecological corridor for commuting and foraging Bats or terrestrial mammals e.g., Badger. This habitat has a distinctiveness rating of "4", described as "medium". To compensate for this loss, 2157m² of native Scrub mix and 729m² of native Hedgerow mix will be planted, as well as the enhancement of 1350m² of existing Scrub habitat on-site. Overall, a Biodiversity Net Gain of –7.14% is achieved for this habitat. This is described in Table 1-2 below.

Table 1-2: Biodiversity Net Gain of Scrub Habitat

Habitat	Area Lost/Gained (m²)	Distinctiveness (Natural England)	Score (Distinctiveness x Area)

[2] The Statutory Biodiversity Metric: User Guide (Feb 24) – Department for Environment Food & Rural Affairs
[3] Forest Research – Grassland Habitats: Grassland habitats - Forest Research

Native Scrub (Removal)	4561.56	4 (Medium Distinctiveness)	18,246.24
Native Scrub (Planting)	2157	4 (Medium Distinctiveness)	8628
Native Scrub (Enhancement)	1350	4 (Medium Distinctiveness)	5400
Native Hedgerow (Planting)	729	4 (Medium Distinctiveness)	2916
Percentage: **7.2% Loss** in terms of Biodiversity Net Gain			

Treelines (WL2) were identified along the northern and southwestern site boundary, and to the middle of the site. These treelines consisted of species such as Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), and Ash (*Fraxinus excelsior*). Scattered Trees and Parkland (WD5) habitat was also identified on-site, consisting of the aforementioned tree species and others. 51-no. Trees will be felled in accordance with current site plans. These habitats are assessed as being of moderate ecological value, as the trees offer optimal nesting locations for breeding birds and may be utilised as part of ecological corridors to wider environs by commuting or foraging terrestrial mammals or bats. This habitat has a distinctiveness rating of "4", described as "medium". To compensate for this loss, 152-no. native Trees will be planted. Their positioning will create several linear features on-site to enhance commuting corridors for Bats and commuting and foraging terrestrial mammals. Overall, a Biodiversity Net Gain of 198.03% is achieved for this habitat.

Table 1-3: Biodiversity Net Gain of Tree Habitat

Habitat	Trees Lost/Gained (Number)	Distinctiveness (Natural England)	Score (Distinctiveness x Area)
Native Trees (Felling)	51	4 (Medium Distinctiveness)	204
Native Trees (Planting)	152	4 (Medium Distinctiveness)	608
Percentage: **198.03% Gain** in terms of Biodiversity Net Gain			

Hedgerows (WL1) were identified along the western site boundary, and part of the eastern site boundary. Hedgerows consisted of Willow (*Salix alba*), Osier Red Twig Dogwood (*Cornus sericea*), and Monterey Cypress (*Cupressus macrocarpa*). This habitat is assessed as being of moderate ecological value, as it offers optimal nesting locations for breeding birds, and may form part of ecological corridors for commuting or foraging terrestrial mammals or bats. All hedgerows will be retained in accordance with current site plans and will not be impacted as a result of site works.

Other habitats were identified on-site. Stone Walls and Other Stonework (BL1) was identified along the western and southern site boundary. The stonewall itself was low, around 1 metre in height; it was assessed as being of negligible ecological value. This habitat will be removed as part of works on-site, according to current site plans. Refuge and Artificial Waste (ED5) was identified on-site; this consisted of old rubber tyres. This habitat was assessed as being of negligible ecological value. This habitat will be removed as part of works on-site, according to current site plans. Underground Artificial Habitat (EU2) was identified on-site; this consisted of manhole covers, leading to underground sewage/drainage systems. This habitat was assessed as being of negligible ecological value. These habitats will not be removed as part of work on-site.

Overall, the site achieves a Biodiversity Net Gain of 135.53% based on current design plans. The baseline conditions of the site (%) are described as 100; it loses 62.5 and gains 198.03 leaving an overall site value of 235.53 post-development. For a site to achieve Biodiversity Net Gain, it must achieve an increase of at least 10% in Biodiversity[4]. The site at Caltragh, Co. Sligo exceeds the required 10% increase in site biodiversity, and therefore achieves Biodiversity Net Gain. Table 1-4 below outlines the overall Biodiversity Net Gain.

Table 1–4: Overall Biodiversity Net Gain of Site in Caltragh, Co. Sligo

Habitat Lost	Compensatory Measure	Percentage of Biodiversity Lost/Gained given compensatory measures (%)
Grassland	Wildflower Meadows	-55.3
Scrub (Native Species)	Native Scrub (Planting & Enhancement); Native Hedgerow (Planting)	-7.2
Tree	Native Tree (Planting)	+198.03
Total Biodiversity Net Gain: (-55.3) + (-7.14) + (198.03) = **135.53%**		

Certain vegetation will be pruned/trimmed to facilitate development. All vegetation, including scrub, trees, and hedgerows, should be removed, or trimmed outwith the nesting season for breeding Birds, to mitigate any ornithological issues as a result of site works. It is also recommended that these practices are left until late winter, to allow Bird species to foraging within these habitats over the winter.

Ornamental/Non-native shrub (WS3) was identified outwith the eastern site boundary, in an adjacent garden. The species identified was Buddleia (*Buddleja davidii*), located at G 68909 3498 (Picture 6 above). Figure 2 in the appendix highlights the position of the non-native invasive species.

Buddleia is not listed under Regulation 49 or 50 of the Third Schedule in the Republic of Ireland. However, the species is included in the NRA Guidelines on the Management of Noxious Weeds and Non-Native Species on National Roads as the species has been shown to have an adverse impact on landscape quality, native biodiversity, or infrastructure. The species is considered as a non-native, medium-impact invasive species. While the species was not identified on-

[4] Biodiversity Net Gain Brochure – Natural England

site, due to its proximity to future development works on-site, it should be managed appropriately were necessary, to mitigate the potential for any accidental spread. Recommended management options are outlined below.

Management Options for Buddleia

1. Physical Control

Management methods such as digging the species out are applicable only to minor infestations at the initial stage of invasion. Hand-picking of young plants is feasible but should be undertaken with care to avoid soil disturbance which can give rise to a flush of new seedlings. Grubbing of mature stands as a sole attempt at control is not recommended for the same reason. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth. When Buddleia is cut, the species grows back from the stump very vigorously. Mowing of young plants does not provide control as they re-sprout with vigour. Where removal of mature plants is not feasible in the short term, the flower heads should be cut off in June before the seeds are set.

2. Chemical Control

Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix. Foliar application of triclopyr or glyphosate may be adequate for limited infestations of younger plants but should be followed up at 6 monthly intervals. At this point, it must be restressed that all Plant Protection Products must be used in accordance with the product label and with Good Plant Protection Practices as prescribed in the European Communities (Authorization, placing on the Market, Use and Control of Plant Protection Products) Regulations, 2003 (S.I. No. 83 of 2003). Again, it should be noted that it is an offence to use Plant Protection Products in a manner other than that specified on the label. These methods outlined are not in accordance with the product label; therefore, it will be necessary to discuss the use of such methods with the Pesticides Control Service with a view to seeking approval under the derogation procedures provided under the Plant Protection Regulations.

The application site is located within 15km of 11-no. European Designations. A stage 1 Appropriate Assessment Screening was required in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended), to assess the direct and indirect impacts of the development on European designated sites. The application site screened out at Stage 1 and was not required to advance to Stage 2.

Whilst no watercourses were identified on-site, all works should be undertaken in a manner that should prevent impacts to any downstream environments. To ensure this, and due to the medium-scale of the development site, it is recommended that a Construction Environmental Management Plan (CEMP) is produced for this site. This will ensure that appropriate mitigation is in place to ensure negligible impact on any designated site or downstream environment.

A Preliminary Roost Assessment (PRA) for Bats was undertaken on-site of any buildings, trees, and other structures. No buildings were identified on-site. Stone walls were identified on-site, along the eastern and southern site boundary These were assessed as having negligible bat roosting potential due to their low height of 1m. 3-no. trees

were assessed as having bat roosting potential on-site. All trees assessed as having Bat roost potential will be retained in accordance with current site plans. The trees which possessed Bat roosting potential are detailed in Table 2 below.

Table 2 – Bat Roost Potential Trees

Tree No.	Grid Reference	Roosting Features	Classification	Requirements if removed.
T1	G 68876 34324	Thick Ivy was identified around the trunk of this ash tree; however, the branches had no cover of ivy. No other potential roosting features were visible from the ground.	**Low** - A tree of sufficient size and age to contain Potential Roosting features seen with only very, limited roosting potential.	This tree will be retained as part of site works. If this tree were to be removed, as a precaution, and where possible, it is recommended that works are conducted in September/October, to avoid maternity and hibernation seasons when bats are most vulnerable to disturbance. If the tree is to be felled then we recommend soft felling, where tree limbs are cut and left grounded overnight to allow any bats to make their way out.
T2	G 68890 34339	Two knotholes were identified on this ash tree. A knothole approximately 10cm in diameter was identified on the northern face of the tree. Another knothole was identified on the south-eastern face of the tree within a branch. The hole measured approximately 10cm tall and 5cm wide. Several branches of the tree exhibited notable splits, and small sections of loose or flaking bark were observed on the south side of the tree. Additionally, sparse ivy was detected on the tree. A bird nest was also identified within this tree.	**Moderate** - Potential Roosting Features provide a more secure form of roost for small groups of bats and individuals	This tree will be retained as part of site works. If this tree were to be removed it will require 2 emergence/re-entry surveys between May and September in accordance with BCT guidance or will require an endoscope survey of potential roosting features.
T3	G 68959 34226	A knothole was identified on the western face of the ash tree, approximately 6m from the ground, the hole was approximately 3cm tall and 3cm ideationally thick ivy was identified	**Moderate** - Potential Roosting Features provide a more	This tree will be retained as part of site works. If this tree were to be removed it will require 2 emergence/re-entry surveys between May

		around the tree, providing a potential roosting feature for bats.	secure form of roost for small groups of bats and individuals	and September in accordance with BCT guidance or will require an endoscope survey of potential roosting features.

Picture 11: Thick Ivy on T1 with Low Roost Potential on-site

Picture 12: Thick Ivy on T2 with Moderate Roost Potential on-site

Picture 13: Crevice on T2 with Moderate Roost Potential on-site

Picture 14: Crevice on T2 with Moderate Roost Potential on-site

Picture 15: Crevice on T3 with Moderate Roost Potential on-site

Picture 16: Thick Ivy on T3 with Moderate Roost Potential on-site

The site is considered optimal for commuting and foraging Bats; treelines and hedgerows on-site may form part of ecological corridors to the wider environs. Both habitats will be removed/altered as part of the development works on-site, according to current site plans. Planting proposals recommended above will ensure the development will

not have an adverse impact on commuting and foraging Bats. There is also no current proposal for additional external lighting on the site. Should future plans include external lighting, boundary vegetation and/or hedgerows and trees should remain in darkness and should not be subject to light levels greater than 1 lux.

A Badger survey was undertaken on-site, incorporating a 30m buffer around the site. 2-no. mammal holes were identified on-site, located at G 68853 34525 (M1) and G 68855 34478 (M2); M1 had an entrance hole of 10cm in height, and 18cm in width; M2 had an entrance hole of 22cm in height, and 26cm in width. No snuffle holes, guard hairs, or latrines were identified in the area. The habitat on-site is suitable for Badgers. The scale of M1 was too small for use by badger, and based on the shape of the entrance hole, and the dimensions of the entrance and tunnel, it is likely in use by European Rabbit (Oryctolagus cuniculus), however, the use of M2 by Badgers could not be ruled out, and therefore monitoring of M2, using trail cameras, was undertaken to establish the mammal species utilising this hole. Trail cameras monitored M2 for 1-no. month, both day and night. Red Fox (*Vulpes vulpes*) was observed emerging and entering M2; it was confirmed Red Fox was the occupant of M2. No further survey is required of M1 or M2. A further 1-no. mammal hole (M3) was identified on-site, located at G 68945 34275. This mammal hole was also associated with the European Rabbit (*Oryctolagus cuniculus*), based on its location, the shape of the entrance hole (circular/round), and the dimensions of the entrance and tunnel. European Rabbit is assessed as a non-native medium-risk invasive species in the Republic of Ireland. This species will not be considered further in this report.

Picture 17: Entrance hole of M1 on-site

Picture 18: Entrance hole of M1 on-site

Picture 19: Entrance hole of M2 on-site

Picture 20: Entrance hole of M2 on-site

Picture 21: Red Fox in M2 on-site

The site was considered suitable for commuting and foraging Badgers. The site itself consists of favourable habitat for the species such as improved agricultural grassland, and foraging opportunities for the species; however, the surrounding environs are not favourable for Badgers e.g., development sites, residential dwellings, and high-frequency carriageways. Precautionary measures should be implemented to ensure no adverse impacts on the species, or other terrestrial mammals which may utilise the site for commuting and foraging purposes. It is recommended that once construction works have begun on site, any open excavation pits or trenches should have wooden planks placed within them overnight and outside construction periods to provide a means of escape and to avoid accidental trapping of mammals or other wild/domestic animals within them. Soil mounds on-site should be minimised to prevent badgers from excavating setts within them.

The site and habitats therein are considered optimal for breeding Birds. No nesting Birds or Bird nests were identified during the survey. All species of breeding Birds and their nests are protected under legislation. Therefore, removal of vegetation on-site must be undertaken outside the breeding season, which extends from 1st March to 31st August inclusive. Should vegetation removal highlighted above be required during this period, it is recommended that a qualified ecologist is appointed to survey the areas of vegetation prior to removal for evidence of use by breeding birds. Should any breeding Birds be identified, the area will need to remain undisturbed until all dependent young have fledged the nest, and the nest is no longer in use.

An activity and habitat suitability survey of the site and the immediate environs was undertaken for Otter. No holts or evidence of Otters such as otter spraints, footprints, paths/slides, or urination 'green spots were noted on-site, and the site itself is considered suboptimal for commuting and foraging otters as no watercourses are located on-site.

The site and immediate environs were searched for evidence of Pine Marten. No field signs such as scatt, footprints or den sites were identified on-site or within the extended environs. The site lacked foraging resources for the species, with no connectivity to suitable habitat in the wider environs, and limited resource availability to create dens on-site, scoring 1.5 - poor habitat suitability in the methodology set out in Cresswell et al. (2012)[5].

[5] UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation – Pine Marten

The site and immediate environs were searched for evidence of Red Squirrel. No field signs such as droppings, footprints or dreys were identified on-site or within the extended environs. The site lacked foraging resources for the species, with no connectivity to suitable habitat in the wider environs, and limited resource availability to create dreys on-site. The site itself is considered sub-optimal for Red Squirrel, with both the site itself and the extended environs as being of poor habitat suitability in accordance with the methodology set out in Gurnell et al. 2009[6].

The site was assessed for habitat suitability for Common Lizard, in accordance with Surrey Amphibian and Reptile Group (SARG) Guide to Common Lizard[7]. The site did not possess any suitable breeding habitats for the species. Whilst scrub habitat may provide suitable refuge for the species, favourable habitats for basking e.g., grassland consisting of tussocky grasses, were not present. Additionally, the species has not previously been recorded on NBN Atlas or NBDC Maps.

The site was assessed for habitat suitability for Common Frog. The site did not possess any watercourses for the species to utilise and was therefore considered sub-optimal for Common Frog.

The site was assessed for habitat suitability for Smooth Newt. The site did not possess any watercourses for the species to utilise for breeding purposes and was therefore considered sub-optimal for Smooth Newt.

The site was assessed for habitat suitability for Butterfly, including the Annex II listed species Marsh Fritillary. The site did not possess suitable habitat; it lacked suitable swards and offered no habitat connectivity to suitable habitats in the wider environs. There was no evidence of Devil's Bit Scabious on-site, a food source for Marsh Fritillary. The site was assessed as being sub-optimal for Butterfly, including Marsh Fritillary.

Further Requirements:

1. A Construction Environmental Management Plan (CEMP) to ensure no adverse impacts on designations as a result of works on-site;

Quality Control:

Prepared By:

Callum Neill MSci (Hons)
Ecologist
AVRIO Environmental Management

Approved By:

Fergal Maguire
Principal Ecological Consultant
AVRIO Environmental Management

[6] BAP Mammals; Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation – Red Squirrel
[7] Surrey Amphibian and Reptile Group (SARG) – Guide to Common Lizard

Appendix

Appendix A – Species List

Common Name:	Scientific Name:	Common Name:	Scientific Name:
Ash	*Fraxinus excelsior*	Male Fern	*Dryopteris filix-mas*
Black Pine	*Pinus nigra*	Meadow Buttercup	*Ranunculus acris*
Blackthorn	*Prunus spinosa*	Meadow Sweet	*Filipendula ulmaria*
Broadleaf Dock	*Rumex obtusifolius*	Monterey Cypress	*Cupressus macrocarpa*
Buddleia	*Buddleja davidii*	Mouse-ear Chickweed	*Cerastium fontanum*
Common Ivy	*Hedera helix*	Multiflora Rose	*Rosa multiflora*
Common Nettle	*Urtica dioica*	Osier Red Dogwood	*Cornus sericea*
Common Ragwort	*Senecio jacobaea*	Pond Water Starwort	*Callitriche stagnalis*
Creeping Bent	*Agrostis stolonifera*	Ribwort Plantain	*Plantago lanceolata*
Creeping Buttercup	*Ranunculus repens*	Sitka Spruce	*Picea sitchensis*
Creeping Thistle	*Cirsium arvense*	Soft Rush	*Juncus effusus*
Elder	*Sambucus nigra*	Sycamore	*Acer pseudoplatanus*
European Bramble	*Rubus fruticosus*	Willow	*Salix alba*
Common Hawthorn	*Crategus monogyna*	Yellow Flag Iris	*Iris pseudacorus*

Appendix B – Photographs of Site

Picture 22: Fence on-site

Picture 23: Improved Agricultural Grassland (GA1) on-site

Picture 24: Scrub (WS1) on-site

Picture 25: Hedgerow (WL1) on-site

Picture 26: Improved Agricultural Grassland (GA1) on-site

Picture 27: Gate attached to Stonewall and Other Stonework (BL1) on-site

Picture 28: Refuge and Artificial Waste (ED5) on-site

Picture 29: Treeline (WL2) on-site

Picture 30: Treeline (WL2) on-site

Picture 31: Wet Grassland (GS4) on-site

Picture 32: Fence on-site

Picture 33: Mammal Hole (M2) on-site

Picture 34: Breach Points in Fence on-site

Picture 35: Scatted Trees and Parkland (WD5) on-site

Picture 36: Treeline (WL2) on-site

Picture 37: Improved Agricultural Grassland (GA1) on-site

Picture 38: Residential Dwelling to the east of the site

Picture 39: N4 Carriageway to the west of the site

Appendix C – Figures

Legend:

Site Boundary

Project Title: AEMP-2000310 Caltragh LRD	
Drawing Title: Site Boundary Map	
Drawn By: CN	Checked By: FM
Project No: 2000310	Drawing No: Figure 1
Scale: 1/2000	Date: 19th April 2024

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Legend:

- Site Boundary
- WS1- Scrub
- GA1- Improved Agricultural Grassland
- GS4- Wet Grassland
- EU2- Underground Artificial Habitats
- ED5- Refuge and Artificial Waste
- BL1- Stone Wall and Other Stoneworks- Thick Concrete Block
- BL3- Buildings and Artificial Surfaces
- BL1- Stone Wall and Other Stoneworks- Stone Wall
- WL1- Hedgerow
- WL2- Treeline
- WD5- Scattered Trees and Parkland
- WS3- Ornamental/Non-Native Shrub- Buddleia
- Dry Drain
- Fence

Project Title:
AEMP-2000310
Caltragh LRD

Drawing Title:
Fossitt Habitat Classification

Drawn By:	Checked By:
CN	FM
Project No:	Drawing No:
2000310	Figure 2
Scale:	Date:
1/2000	19th April 2024

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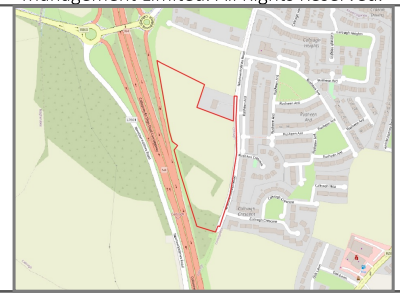

Legend:

- Site Boundary
- Mammal Holes
- Mammal Trails on-site
- Tree with Low Bat Roost Potential
- Tree with Moderate Bat Roost Potential

Project Title: AEMP-2000310 Caltragh LRD	
Drawing Title: Mammal Activity and Preliminary Roost Assessment	
Drawn By: CN	Checked By: FM
Project No: 2000310	Drawing No: Figure 3
Scale: 1/2000	Date: 19th April 2024

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