

Kintore Hydrogen Plant Preliminary Ecological Appraisal Addendum



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CONTROL SHEET

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1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd. was commissioned by William Summerlin on behalf of Statera Energy Ltd. to conduct an addendum Preliminary Ecological Appraisal (PEA) of the updated site boundary of a site south of Kintore, Aberdeenshire.

The 'site' is defined as the area demarcated by the red line boundary as shown in Appendix A. The 'survey area' constitutes the area of the 'site' plus appropriate buffers.

The results and recommendations in this document relate to the updated site boundary as provided by the client at the time of the survey.

This report addendum is required to provide current ecological baseline of this new part of the site and determine potential ecological constraints regarding future development. This addendum should be read in conjunction with;

- ECREP 13628 Kintore Hydrogen Plant PEA FinalV2 (2023)
- Confidential ANNEX 1 FinalV2 (2023)

1.2 Context

An updated site boundary was provided by the client in February 2024, to include access routes and temporary compound locations associated with the water pipeline route, rerouting of a section of the water pipeline connection route and abstraction discharge point, and the addition of a compensatory area along the north bank of the River Don proposed for habitat creation/enhancement/compensation.

1.3 Report Usage

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2 METHODS

The surveys were conducted on the 8th and 12th March 2024 by EnviroCentre Senior Ecologist Jennifer Paterson, who is a Full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Weather conditions during the survey were; 6-8 °C, light breeze and complete cloud cover.

Methodology details can be found in PEA survey report undertaken in 2023¹ by EnviroCentre and are therefore not repeated within this Addendum, although included:

- Habitats using UKHab methodology
- Ground Water Dependant Terrestrial Ecosystems (GWDTE)
- Invasive Non-Native Species (INNS)
- Bats
- Otter
- Badger
- Brown Hare
- Birds

2.1 Constraints

Although, the updated ecological assessment was undertaken during a suboptimal season for vegetation survey, findings are not considered compromised as broad habitat types were identifiable and previous 2023 ecological surveys were undertaken within the optimal vegetation season.

The Aberdeen-Inverness railway line within the survey area, was not directly accessible due to safety restrictions. However, due to the survey results this was not considered to have impacted the findings.

¹ ECREP13628_Kintore Substation PEA_FinalV4

3 RESULTS

3.1 Habitats

The UKHab plan is detailed in Appendix B.

The ecological assessment, of the site comprised a mix of habitats. The majority of habitat characterisations align with survey results from the 2023 PEA survey. Those with additional species or different characterisation are detailed below.

Nine UKHab primary habitat types and one boundary feature are present within the site, as summarised in Table 3-1:

Table 3-1: On-site habitats

Habitat Type	Habitat	Primary Code	Secondary Codes
Grassland	Other neutral grassland	g3c	102 – Sheep grazed
	Modified grassland	g4	10 – Scattered scrub
			101 – Cattle grazed
			102 – Sheep grazed
			114 Dry stone wall
			200 – Tree
Woodland	Other broadleaved	w1g	33 – Line of trees
	woodland		
Heathland & Shrub	Gorse scrub	h3e	
	Mixed scrub	h3h	
Arable & Horticulture	Temporary grass and	c1b	50 - Ditch
	clover leys		114 Dry stone wall
			612 – Fence
	Cereal crops	c1c	114 Dry stone wall
			612 - Fence
Rivers and Lakes	Rivers (priority habitat)	r2a	
Urban	Built linear features	u1e	209 – Avenue
			800 - Road

3.1.1 Other Neutral Grassland

The compensatory area along the north of the River Don comprises other neutral grassland. In some areas, it has been heavily grazed and poached by livestock (sheep) (Page 7). A small area of other neutral grassland is also present along a section of pipeline route in the north of the site (Pages 5 and 6). The other neutral grassland varied in species composition between locations, however in general the species assemblage was noted to have >8 species per m² and comprised of dominant cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*) and sheep's fescue (*Festuca ovina*), with abundant broadleaved dock (*Rumex obtusifolius*), willowherb sp. (*Epilobium spp.*), dandelion (*Taraxacum officinale*), ribwort plantain (*Plantago lanceolata*), white clover (*Trifolium repens*), mouse-ear chickweed (*Cerastium fontanum*), perennial ryegrass (*Lolium perenne*), bitter dock (*Rumex obtusifolius*) and false oat grass (*Arrhenatherum elatius*) were present. Occasional rosebay willowherb

(Chamaenerion angustifolium), nettle (Urtica dioica), ragwort (Jacobaea vulgaris), creeping buttercup (Ranunculus repens), hairy bittercress (Cardamine hirsuta), spear thistle (Cirsium vulgare) and common knapweed (Centaurea nigra) were also present. Garlic mustard (Alliaria petiolata), daffodil (Narcissus sp.), snowdrop (Galanthus), sweet cicely (Myrrhis odorata) and ground elder (Aegopodium podagraria) were rarely observed. Reed canary grass (Phalaris arundinacea) was present in intermittent patches.

Lesser celandine (*Ficaria verna*) and water starwort (*Callitriche sp.*) were present along the edges of the grassland where the River Don occasionally spills over.

Scattered broom (*Cytisus scoparius*), gorse (*Ulex europaeus*), hawthorn (*Crataegus monogyna*), mature sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), rowan (*Sorbus aucuparia*), young goat willow (*Salix caprea*), young alder (*Alnus glutinosa*).

Other neutral grassland falls within the important habitats within the NESBiP Grassland Statement and are therefore of regional importance.

3.1.2 Other Broadleaved Woodland

A line of Norway maple (*Acer platanoides*) trees was present in the north west of the compensatory area (Page 8).

Other broadleaved woodland falls within the important habitats within the North East Scotland Biodiversity Partnership (NESBiP) Woodland Statement and are therefore of regional importance.

3.1.3 Built Linear Features

A number of tracks and roads were present within the site (Page 5-8).

An existing access track is present north of the Aberdeen – Inverness railway line. An avenue of mature beech (*Fagus sylvatica*), oak (*Quercus robur*), ash, lime (*Tilia x europaea*), sycamore, elm (*Ulmus procera*), Scot's pine (*Pinus sylvestris*) and horse chestnut (*Aesculus hippocastanum*) trees line either side of the track (Page 8).

Tracks are not considered to provide resources for wildlife, however the avenue trees are and are considered to be of site value.

3.2 GWDTE

No ground water dependant terrestrial ecosystems were identified within the survey area.

3.3 INNS

Protected Species and INNS Survey Results Plan can be found in in Appendix C.

Giant hogweed (*Heracleum mantegazzianum*) was identified along the River Don within the compensatory area (Page 7).

3.4 Faunal Species and Species Groups

Photographic record of protected species in Appendix D.

Faunal species are transient and can move between favoured habitats regularly throughout and between years. This survey provides a snapshot of field signs present in the survey area in March 2024.

No field evidence of water vole (*Arvicola amphibius*), red squirrel (*Sciurus vulgaris*), pine marten (*Martes martes*), hedgehog (Erinaceus europaeus), reptiles, amphibians or invertebrates were identified during the survey, however suitable habitat exists for these species in the site and within the locale.

Field evidence was identified for the following species:

3.4.1 Bats

Two trees were identified as having suitability for roosting bats:

- A tree with PRFs (lifted plated bark and storm damage) along the access track north of the Aberdeen-Inverness railway line was identified during the survey (Page 8; Photograph 1); and
- A semi mature rowan tree with a PRF was identified along a field boundary on the pipeline route (Page 6; Photograph 2).

The trees were assessed as low suitability.

A building located adjacent to the access track to the compensatory area (north of the River Don) was considered unsuitable for roosting bats due to a combination of unsuitable construction materials (corrugated metal roof) and being open sided on the south aspect, both of which would not offer suitable thermal properties for roosting bats and no suitable gaps in stone wall structure. Therefore, the building was considered to offer negligible suitability for roosting bats (Photograph 3).

The woodland, scattered tree, grassland, scrub, watercourses and treeline habitat within the site offers suitable foraging, commuting and potential roosting resources for bats. These habitats are well connected to other foraging, commuting and roosting resources within the locale. Residential housing in the locale may also provide additional resources for bats. Therefore, the site was assessed as offering high suitability for commuting bats

All UK bat species are European Protected Species (EPS) and are therefore of international importance.

3.4.2 Otter

A potential otter (*Lutra lutra*) holt was identified within scrub on the bank top of the River Don, within the compensation area (Page 7; Photograph 4). The feature comprised a large burrow which had spraints (four dry intact (Di) and three dry fragmented (Df)). This feature was considered to be of moderate status due to a rage of age classes but none of which were present in significant quantities.

Otter footprints, anal jelly and spraints were also identified along the bank of the River Don within the site boundary (Page 7; Photograph 5-7).

The River Don and other watercourses within and adjacent to the site offer suitable in-channel and bankside vegetation for otter commuting, foraging and resting, as well as habitat suitable for holt creation.

The site also provides opportunities for foraging otter including fish, amphibians, small mammals and birds.

Otter are European Protected Species (EPS) and are therefore of international importance.

3.4.3 Badger

Field signs of badger were identified during the survey. Refer to Confidential Annex in Appendix E for details.

The coniferous and broadleaved woodland, arable fields, treelines and scrub habitats provide linear features for sheltered commuting and offer habitat connectivity within the site and habitats in the wider landscape.

Primary and secondary foraging habitat is present across the survey area via arable fields, short grazed modified grassland, scrub and woodland habitats. The watercourses, pond and wetland areas would also provide a regular drinking water supply to badger.

Badgers are protected (for welfare reasons) under the Badger Protection Act 1992 as amended by the Wildlife and Natural Environment (Scotland) Act 2011, and so are of national (UK) importance.

3.4.4 Brown Hare

Two brown hare were observed during the survey, one present within the fields north of the compensatory area (Page 7) and one within a field where the water pipeline route spans south of the Aberdeen-Inverness railway line (Page 6).

The arable fields and margin habitats within the site and pockets of woodland offer suitable foraging, commuting and resting habitat for brown hare to utilise. The fields are open and well connected to other arable and grassland fields and woodland in the locale providing a mosaic of habitats which brown hare have a preference for.

Brown hare are listed on the SBL and are therefore of national (Scotland) importance.

3.4.5 Birds

Bird species were identified during the survey, including:

Table 3-2: Bird Species Identified During Survey

Species	Designation ²
Magpie (Pica pica)	BoCC – Green list ³
Robin (Erithacus rubecula)	BoCC – Green list

² Birds of Conservation Concern information available at: https://www.bto.org/sites/default/files/publications/bocc-5-a5-4pp-single-pages.pdf (Accessed April 2024)

single-pages.pdf (Accessed April 2024)

³ Green list criteria: naturally occurring species with self-sustaining populations meeting none of the criteria for BOCC Amber or Red list species.

Species	Designation ²
Wren (Troglodytes troglodytes)	BoCC – Amber list ⁴
Woodpigeon (Columba palumbus)	BoCC – Amber list
Blackbird (Turdus merula)	BoCC – Green list
Buzzard (Buteo buteo)	BoCC – Green list
Goldfinch (Carduelis carduelis)	BoCC – Green list
Dunnock	BoCC – Amber list
Herring Gull	BoCC – Red list⁵
House Sparrow	BoCC – Red list
Hooded Crow	BoCC – Green list
Great Spotted Woodpecker (Dendrocopos major)	BoCC – Green list
Pheasant (Phasianus colchicus)	Introduced
Black-headed Gull	BoCC – Amber list
Sand Martin (<i>Riparia riparia</i>)	BoCC – Green list

The remnants of a Barn Owl were identified along the access track north of the Aberdeen-Inverness railway line (Page 6 and 7; Photograph 8).

Bird nests from the 2023 nesting season were identified throughout the site within trees.

Suitable habitat for nesting, loafing and foraging birds is present within the woodland, scrub, agricultural fields and grassland habitats within the site.

Birds on the red list are of national importance, those on the amber list are of regional importance and green listed birds are of local importance in line with Birds of Conservation Concern.

All wild bird species are protected under the Wildlife and Countryside Act 1981.

⁴ Amber-list criteria - Threatened in Europe, historical decline – recovery, moderate breeding population decline over 25 years/longer term, moderate non-breeding population decline over 25 years/longer term, moderate breeding range decline over 25 years/longer term, moderate non-breeding range decline over 25 years, breeding/non-breeding rarity, breeding/non-breeding localisation, breeding/non-breeding international importance.

⁵ Red-list criteria - Globally threatened, historical decline in the breeding population, severe breeding population decline over 25 years/longer term, severe non-breeding population decline over 25 years/longer term, severe breeding range decline over 25 years/longer term, severe non-breeding range decline over 25 years.

4 POTENTIAL IMPACTS, FURTHER SURVEY, LICENCING AND MITIGATION

4.1 Potential Impacts

No additional potential impacts other than those previously assessed during 2023 PEA are considered. Potential impacts relevant to the amended site boundary include:

- Loss or fragmentation of habitat if removed or altered (without mitigation or compensation) to facilitate the development.
- Loss or fragmentation of habitats which may include regionally important habitats other neutral grassland, modified grassland, mixed scrub, gorse scrub, rivers and burns and railway embankments if removed or altered (without mitigation or compensation) to facilitate the development.
- Pollution of River Don which is an Annex 1 priority habitat, during works and operation.
- Loss of potential bat roosts if trees containing PRFs are removed.
- The death, injury or disturbance of bats, badger, otter, brown hare and birds during site works and as a consequence of the development.
- The loss or fragmentation of foraging, nesting and commuting habitat for nesting birds (including barn owl and raptors), bats, badger, otter and brown hare as a result of habitat removal/alteration.
- Potential for destruction of nests, and death or injury to chicks if site works commence during the nesting bird season (March to August inclusive).
- Permanent/temporary lighting may illuminate vegetated habitat on site or adjacent habitats causing disturbance to nocturnal or crepuscular species (i.e bats, badgers and otter).
- Removal of suitable basking, pollinating, foraging, residing habitat for invertebrates as a result
 of the removal or alteration of grassland, scrub, stone walls and piles, arable fields, standing
 water and running water habitats.
- · Further spread of INNS during construction works.

The following positive options may be available within the scope of the project:

- Opportunities to improve biodiversity within the site through retention, enhancement and management of compensation area, plus a thoughtful scheme of landscaping aiming to increase habitat connectivity.
- New habitat creation within a focussed plan aiming to increase ecosystem services and provide resources for key fauna attributed to the site.
- Provide wildlife sheltering provisions through the development such as nest/roost boxes and natural features such as tree cavities and rock piles.

4.2 Further Survey

Habitats

There is no requirement for further targeted flora survey.

INNS

Update surveys to determine the spread and distribution of giant hogweed should be undertaken and an INNS management plan produced for its eradication.

Bats

The tree with PRFs along the access track is not to be removed as part of the development, and due to the location (adjacent to the railway line and an existing access track), passing vehicle associated with the development would be unlikely to cause disturbance due to the current conditions the tree is accustomed to. However, good practice mitigation should still be followed to reduce disturbance to bats in the locale.

The tree with PRFs adjacent to the cable route will not be removed as part of the development, however a pre-works check should be undertaken where works are within 30m of the tree.

A bat Protection Plan should be produced for the site.

Annual updates for bats should be undertaken to maintain a valid baseline in relation to the site, to inform the need for any licensing.

Badger

Further survey works are detailed within the Confidential Annex in Appendix D.

Otter

Although a moderate status ofter holt was identified during the survey this is present within the compensatory area and therefore no development works will be undertaken in proximity to this feature. Any habitat compensation/ enhancement can be undertaken with this feature in mind to avoid disturbing.

An otter Protection Plan should be produced for the site.

Annual updates for otter should be undertaken to maintain a valid baseline in relation to the site, to inform the need for any licensing.

A pre-works targeted otter survey, to assess the activity of badgers present within the site and surrounding environment should be undertaken prior to works commencing on site.

Brown Hare

It is advised that a valid ecological baseline dataset should be maintained for all species aforementioned, as well as brown hare via annual surveys, with pre-works checks by a suitably qualified ECoW to be undertaken at the construction stage.

4.3 Licensing

No species licences are required at this time; however this would be reviewed following further targeted survey works and detailed design.

4.4 Mitigation and Biodiversity Gains

Mitigation or biodiversity gains considered applicable to the additional areas surveyed include:

Construction Mitigation

- When clearing vegetation to facilitate construction, only clear the area required and aim to retain some varied vegetation to provide habitat continuity during construction.
- All contractors should be made aware of the potential presence of protected species via induction material, and what to do in the event that a protected species is discovered on site.
- Species Protection Plans in place so that appropriate mitigation can be implemented prior to any construction commencing.
- Vegetation clearance should not be undertaken within the nesting bird season (March August) whilst cognisance of any overwintering bird resources during winter months.
- Any excavations created during works should not be left open for mammals to become trapped. Appropriate covers should be fitted, or a shallow sloping edge/ temporary ramp provided at the end of every working day.
- Any temporary or permanent lighting should be designed to be 'wildlife friendly' and should
 not illuminate habitats including scattered trees, scrub, wetland, watercourses and woodland.
 Screening techniques, dark buffer zones, low- or high-pressure sodium lamps and 'warm
 white' lighting (LED <2700K) are recommended.
- Implement a 15mph speed restriction to avoid RTAs with protected species.
- Vegetated buffers (minimum 10m) between works and watercourses should be implemented to reduce risk of pollution to running water and reduce impacts to otter and fish.
- Implement an INNS management plan (inclusive of a good practice biosecurity plan).

Opportunities for Biodiversity Gain

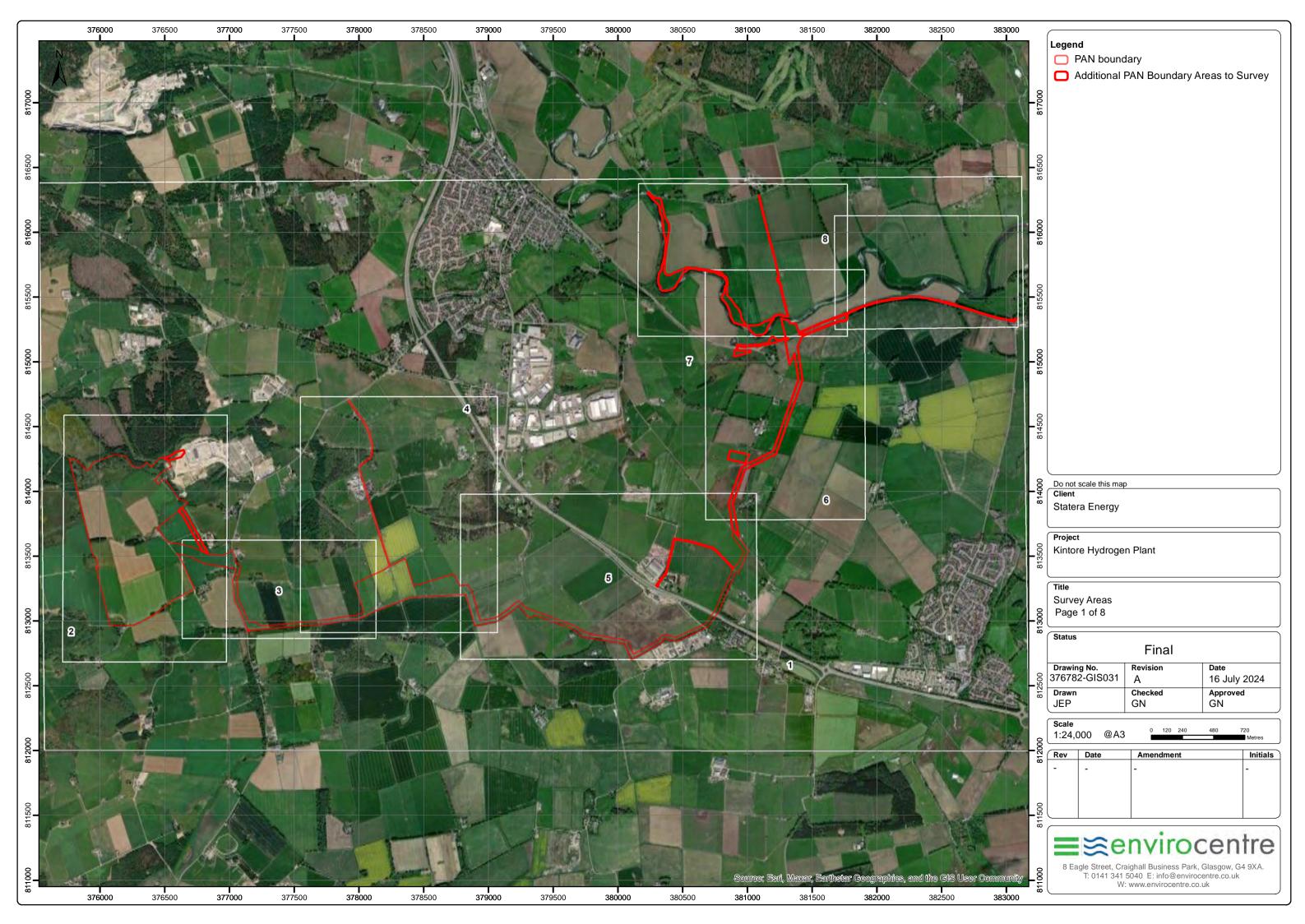
- Sensitive landscaping and planting regimes to augment retained habitat, with a wide range of native tree and shrub species of local provenance, including berry or nectar producing plants being planted. These will serve to increase and possibly connect existing woodlands to other habitats in the wider landscape, promote longevity of the tree and woodland features, as well as encourage good conditions for plants, invertebrates and, therefore a wider functioning ecosystem. This would comply with Aberdeenshire Council Supplementary Guidance (SG) Natural Environment2: Protection of the wider biodiversity and geodiversity C3⁶.
- Create and manage diverse wildflower meadows and margins. Boundary features could be formed using native mixed hedging.
- Habitat connectivity across, around and beyond the site can exponentially increase the
 success of delivering on site and landscape scale biodiversity gains. The site's soil resource
 may contain a great deal of biological activity and as such including consideration for soils in
 landscaping may be beneficial. This would comply with Aberdeenshire Council Supplementary
 Guidance (SG) Natural Environment2: Protection of the wider biodiversity and geodiversity
 C3⁴⁵.
- Bat and bird boxes can be affixed to trees within the retained woodland and trees and on any buildings to increase nesting/roosting provisions.
- Installing owl boxes⁷ into the woodland habitats to increase overall nesting provisions.

⁶ https://www.aberdeenshire.gov.uk/media/11692/sgpolicies.pdf

⁷ https://www.nhbs.com/barn-owl-nest-box

APPENDICES

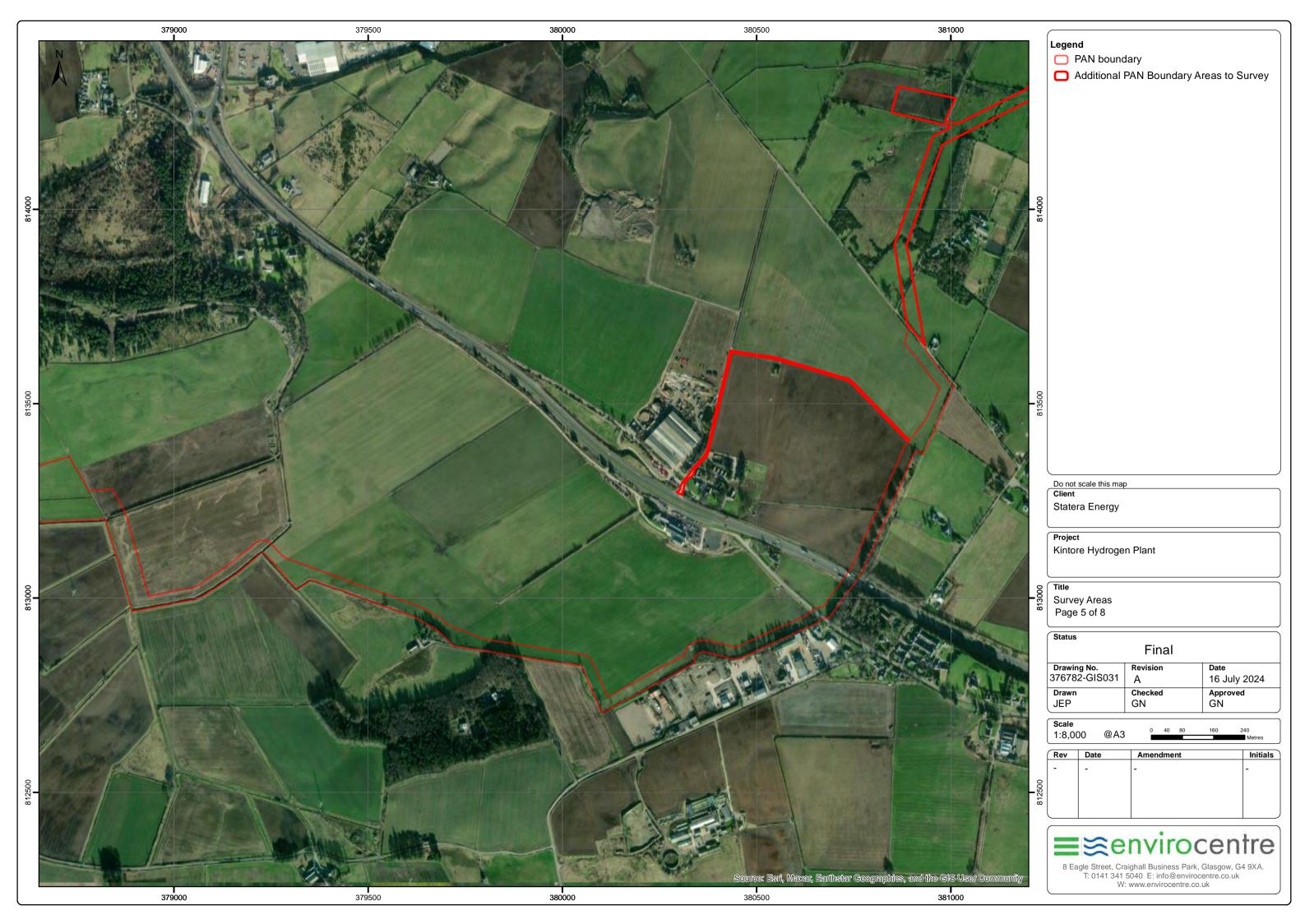
A SURVEY AREA



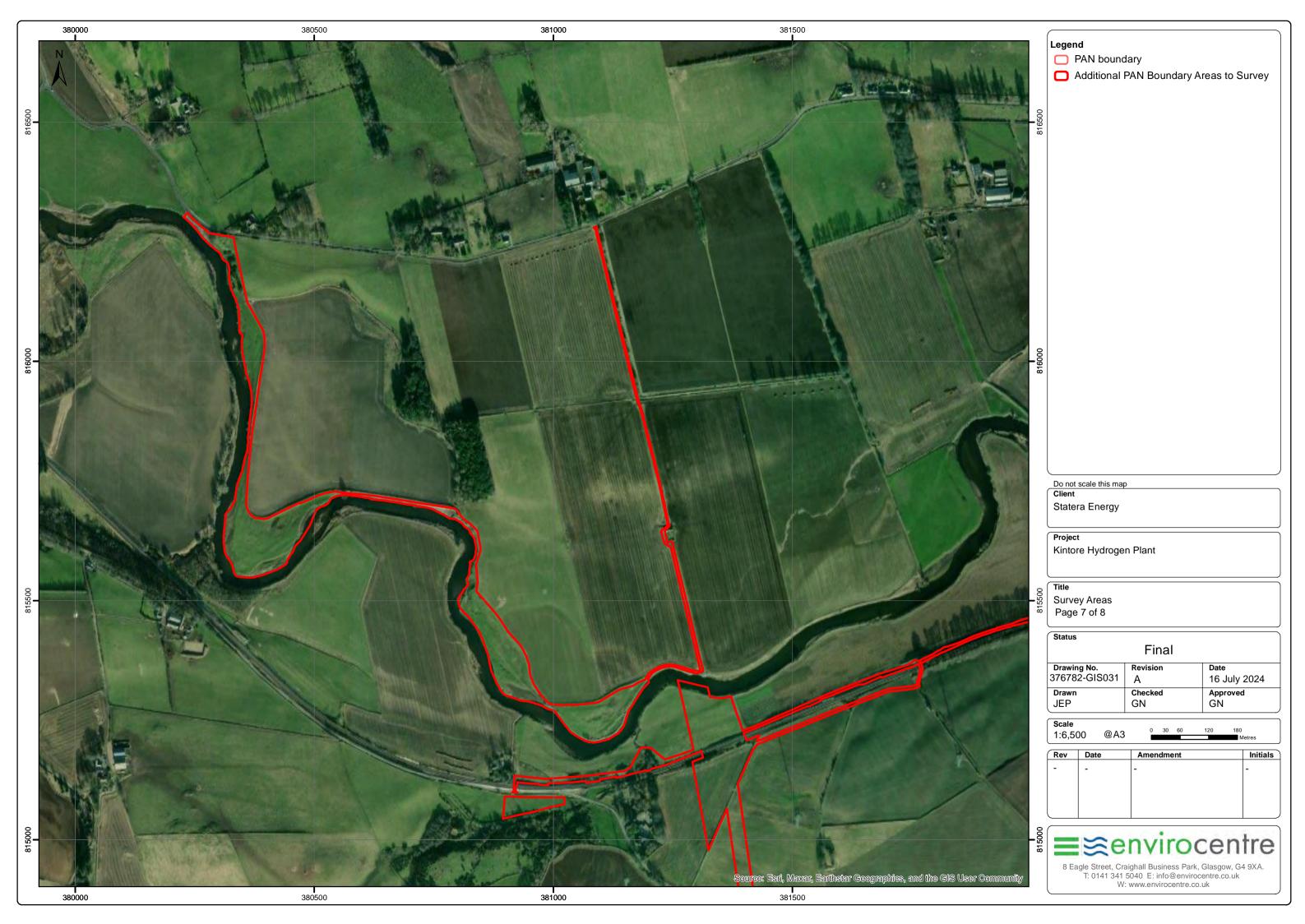






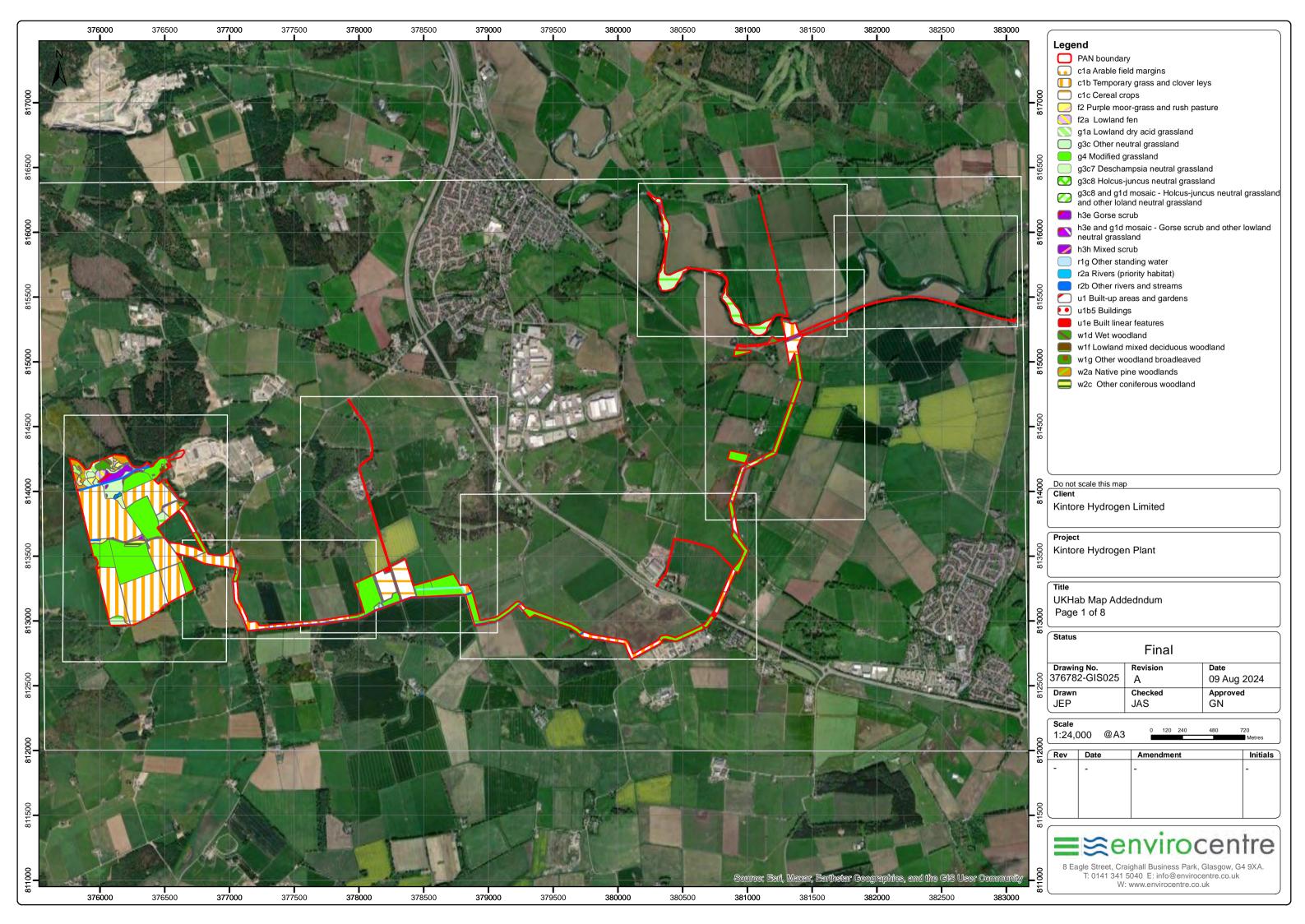


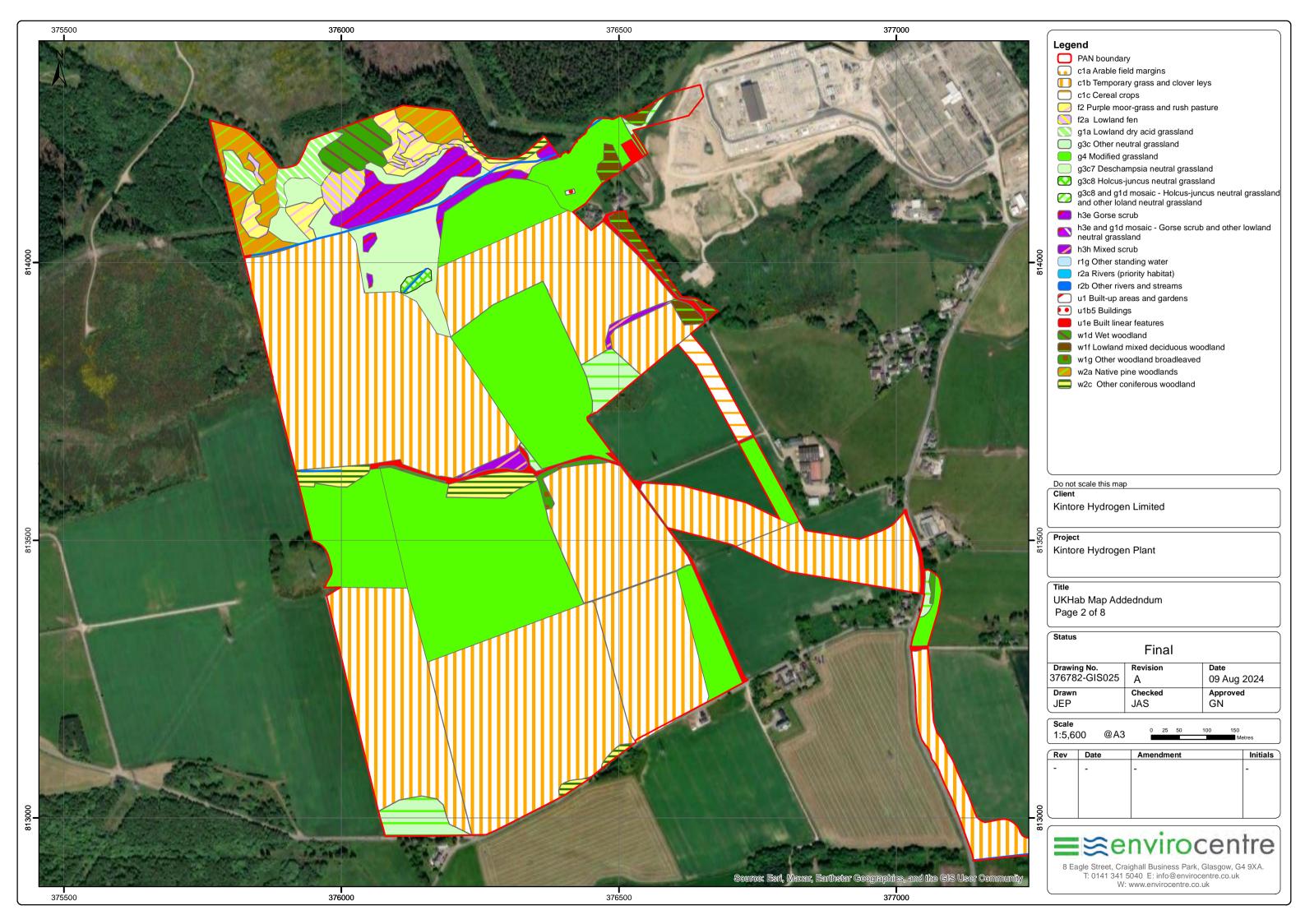


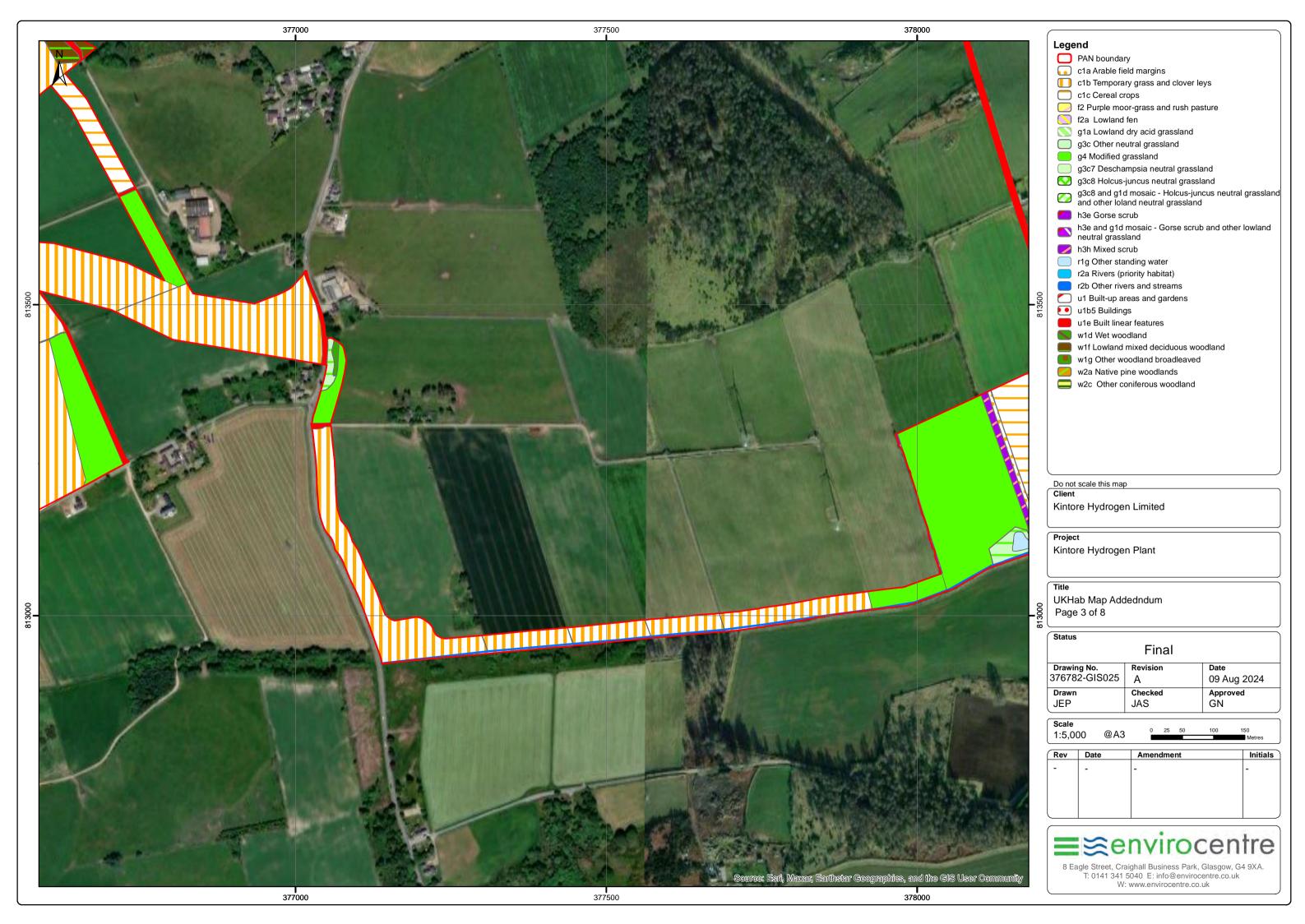


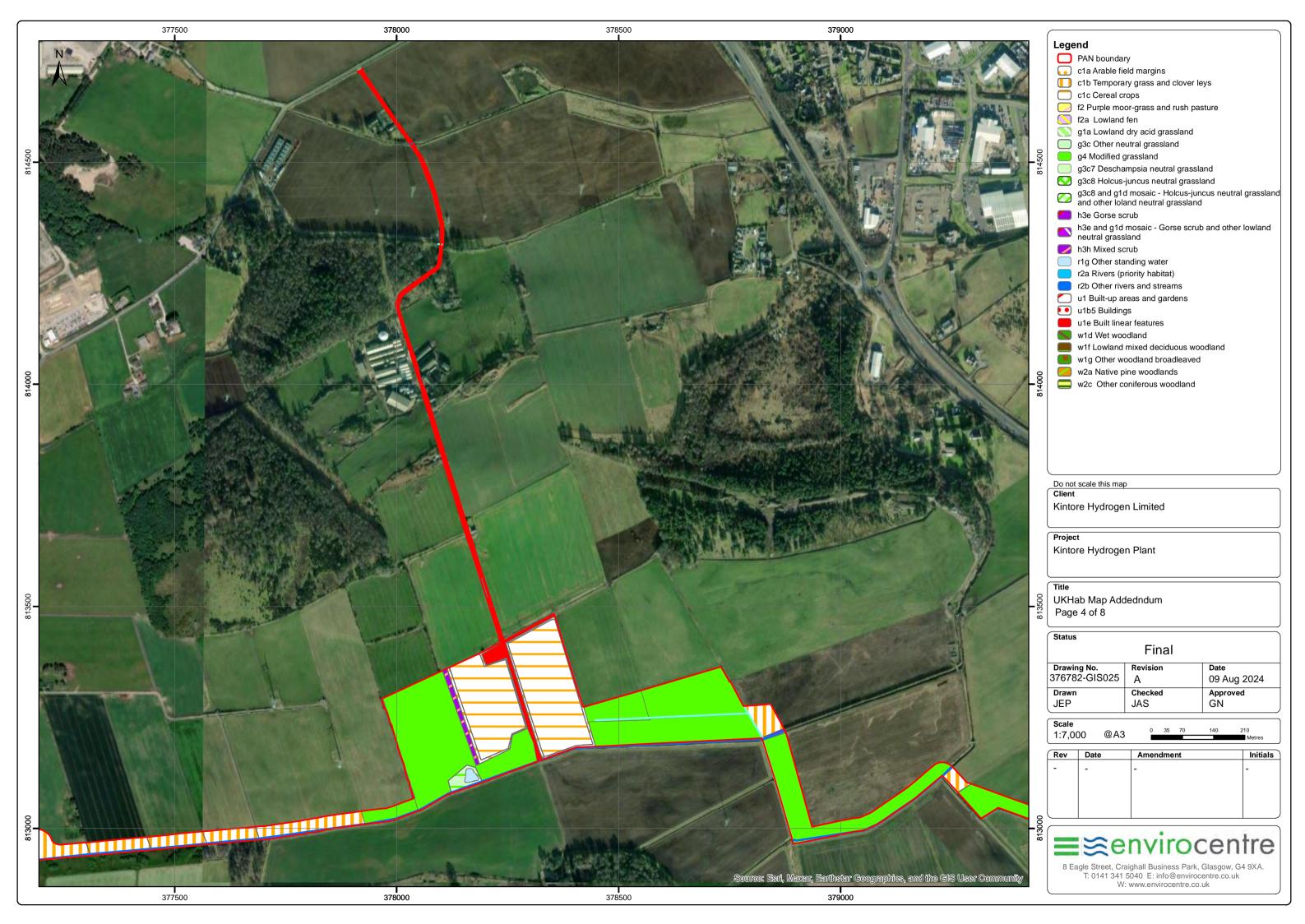


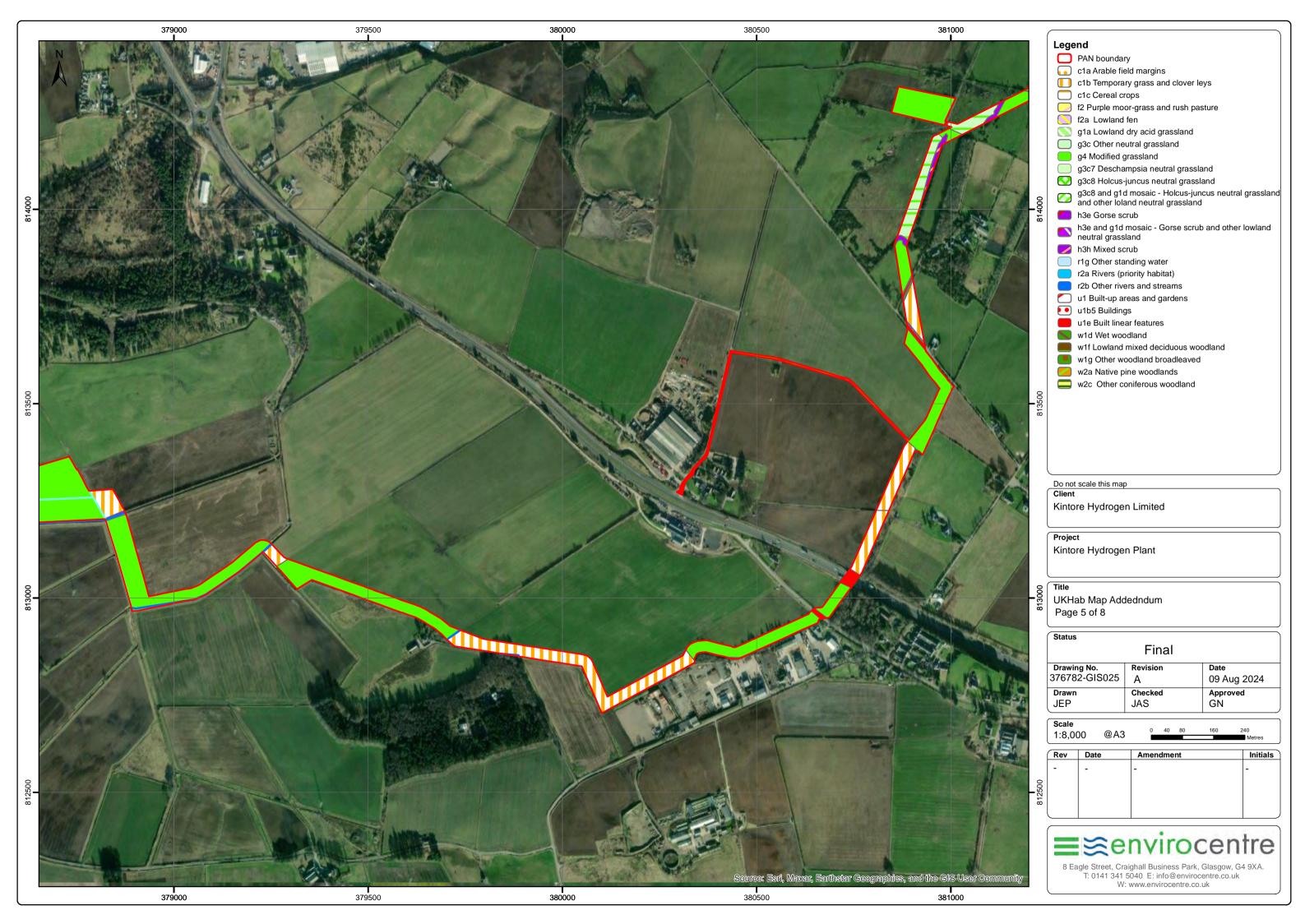
B UKHAB MAP



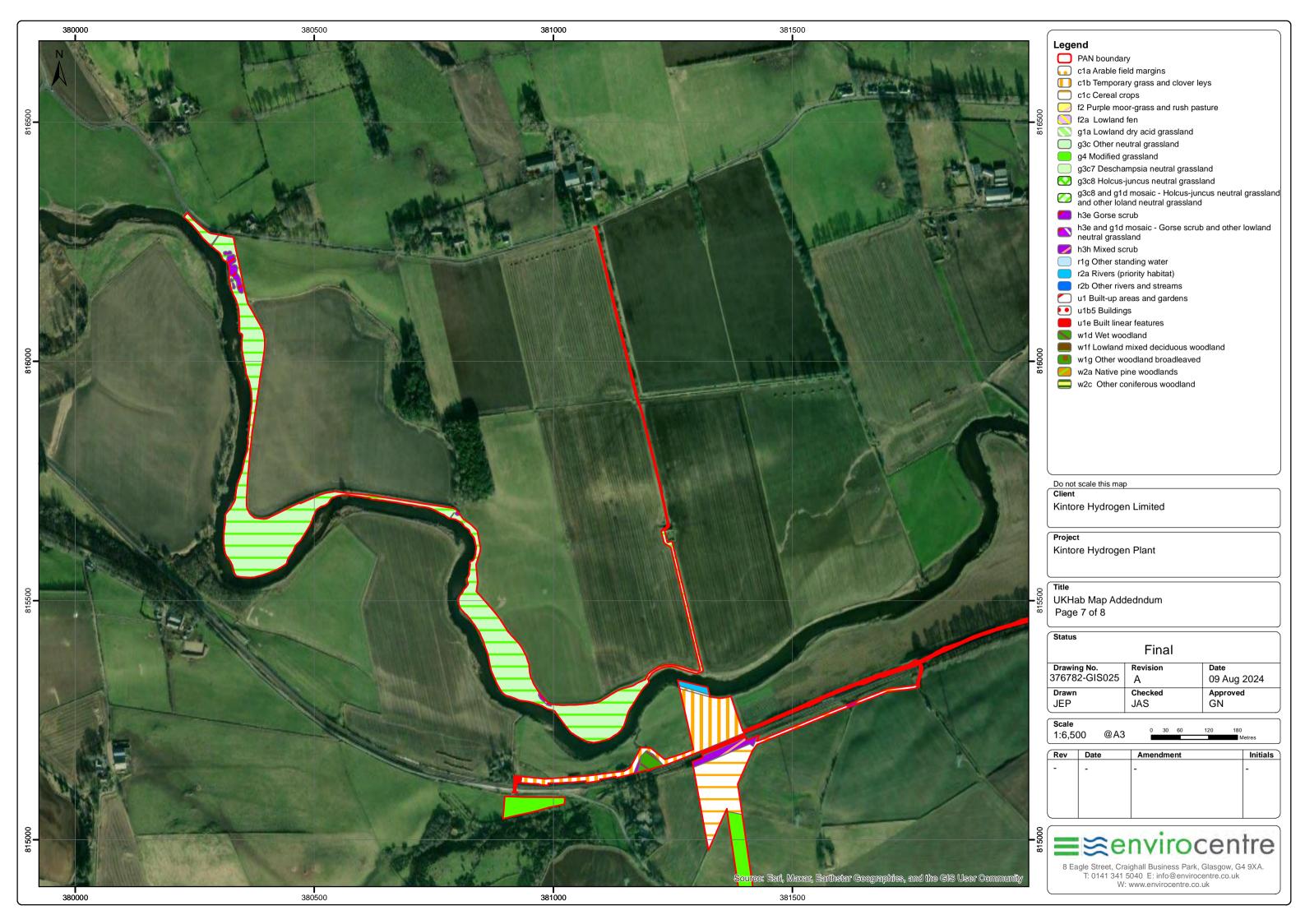






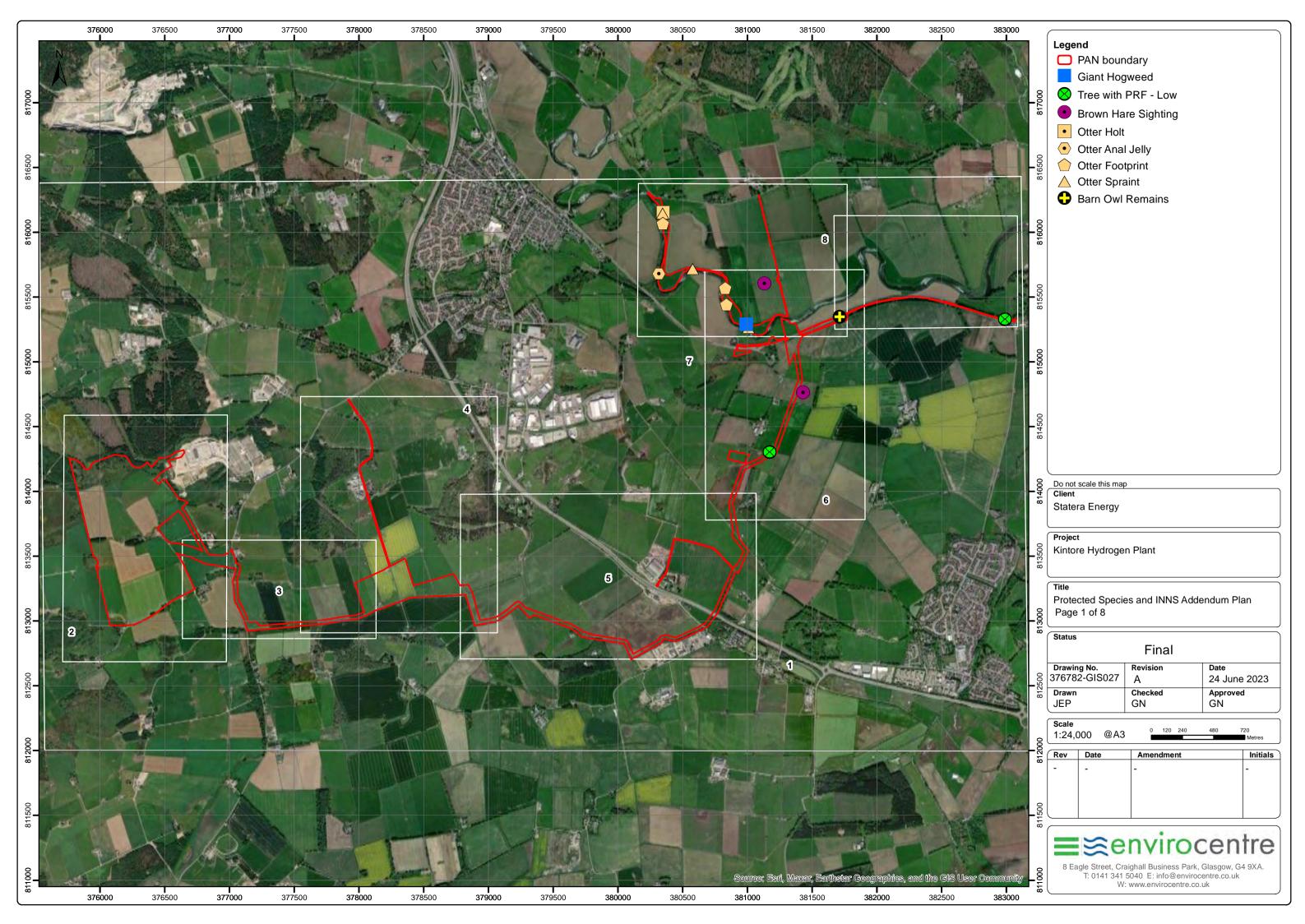




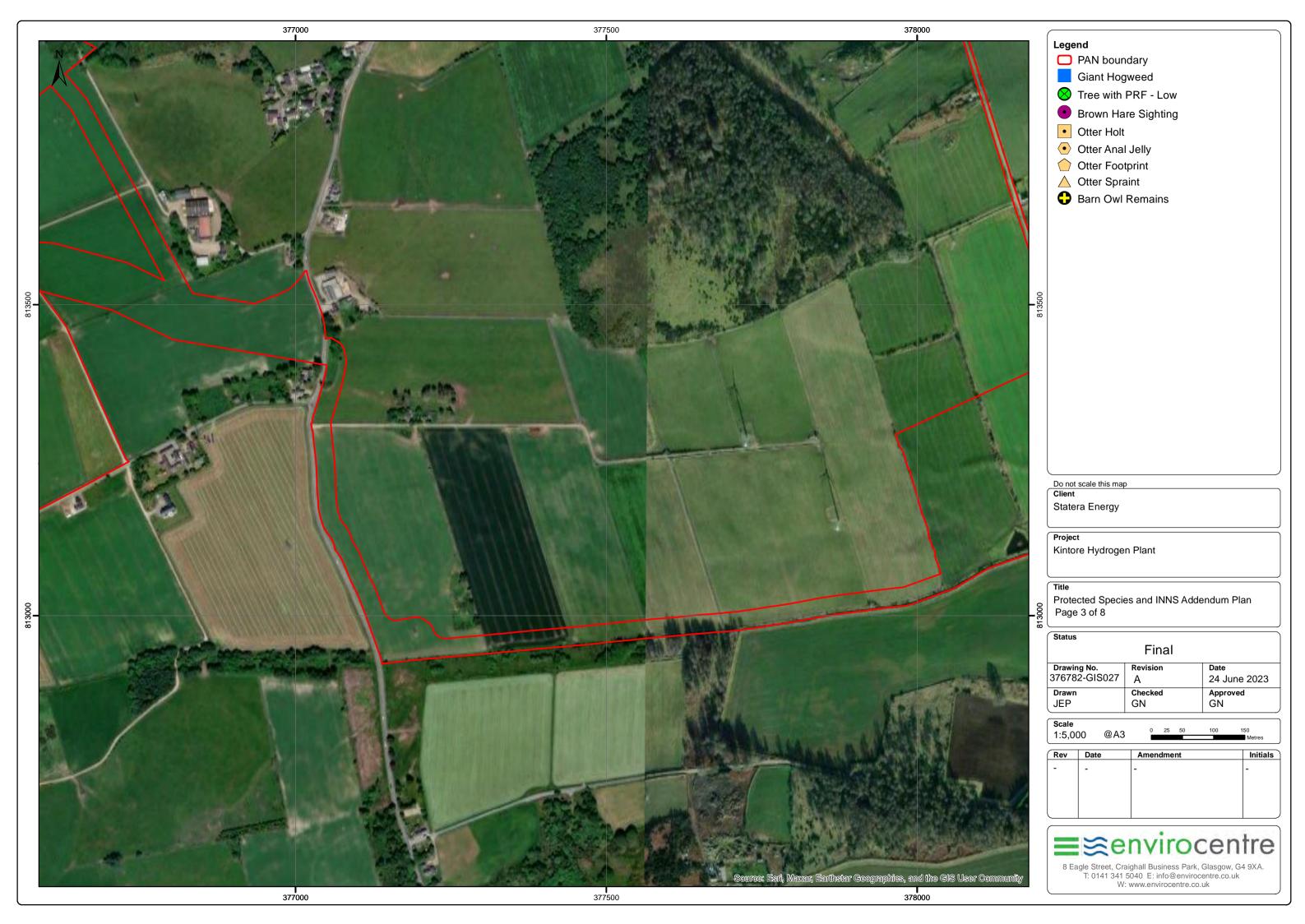


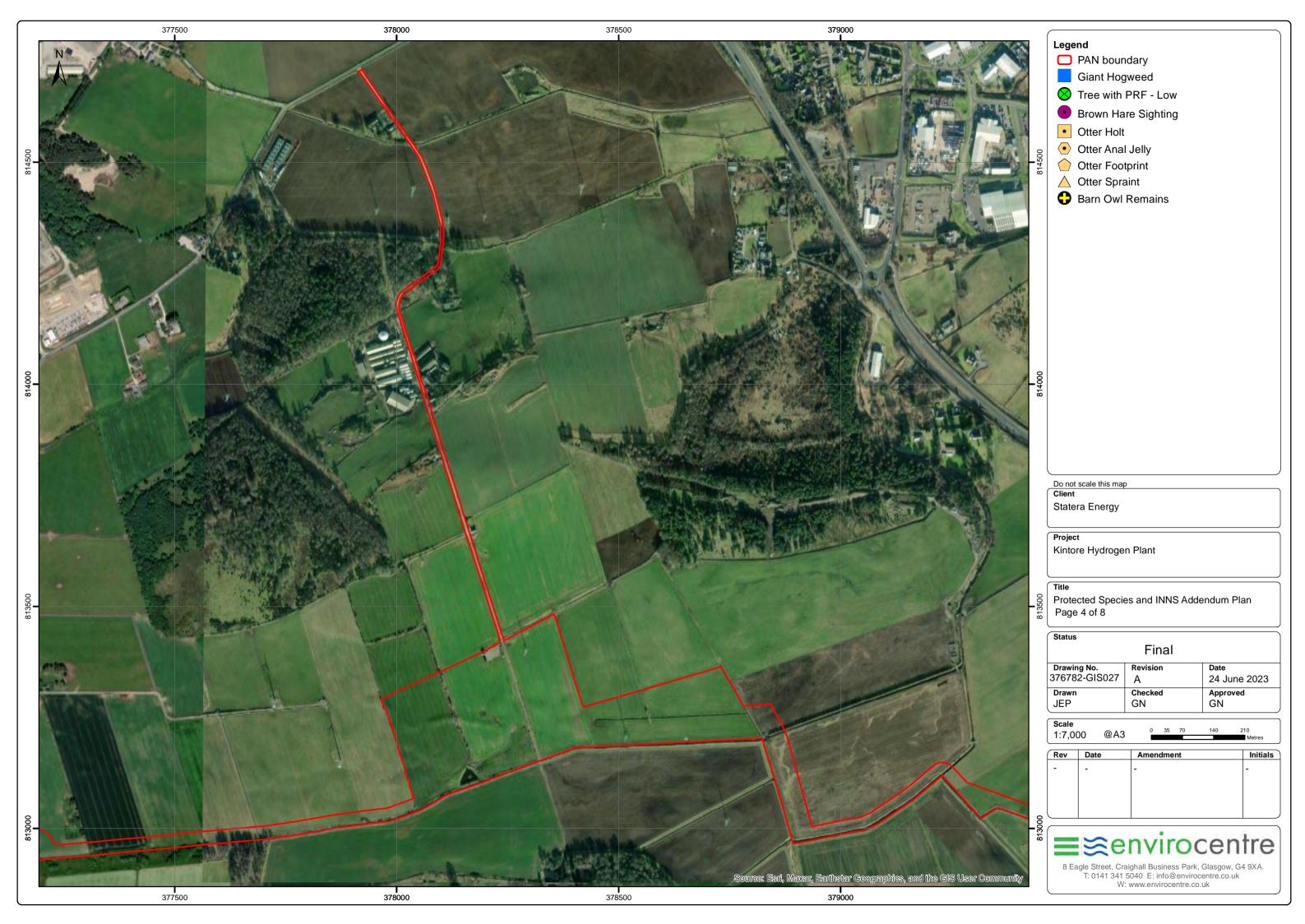


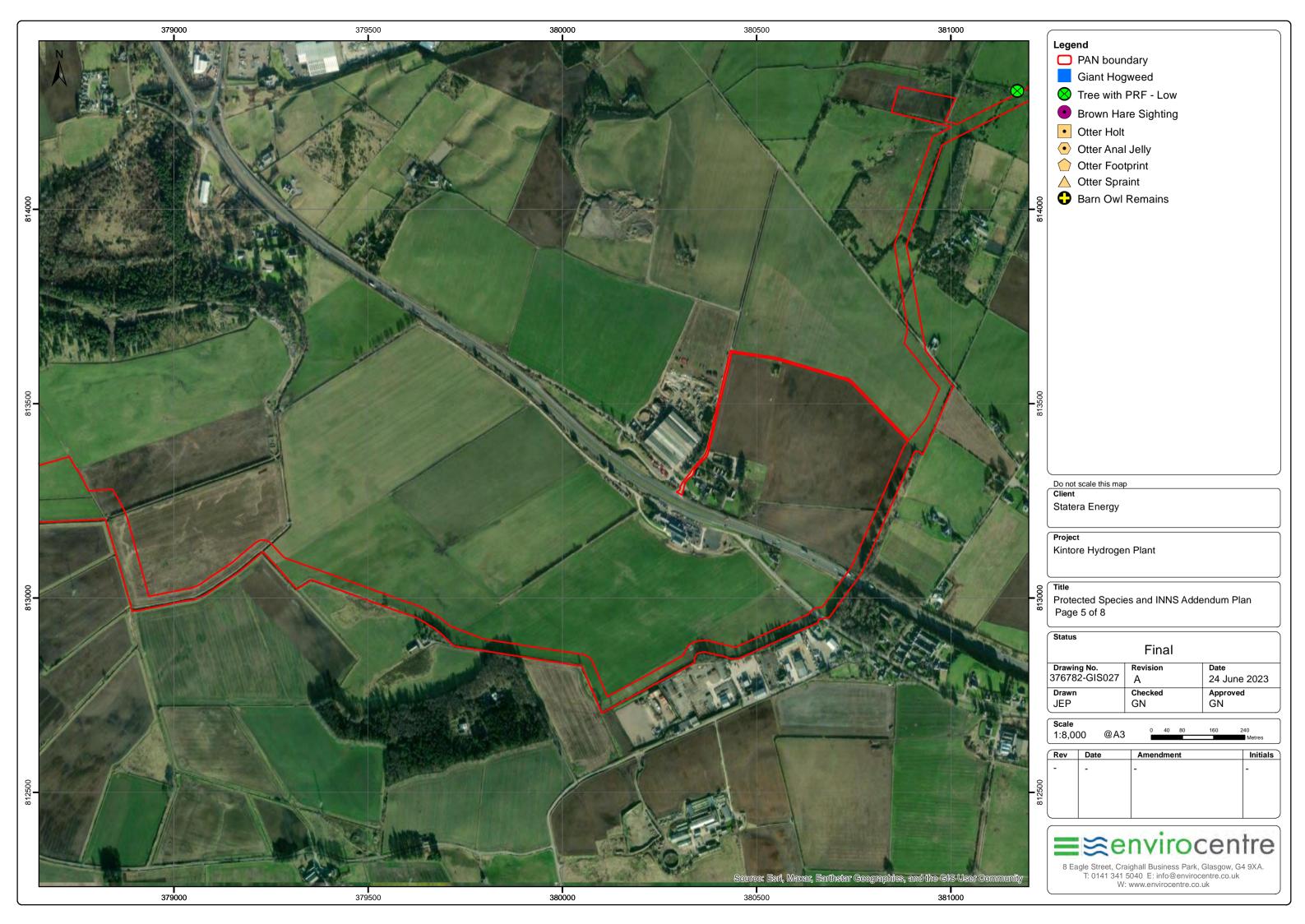
C PROTECTED SPECIES SURVEY RESULTS

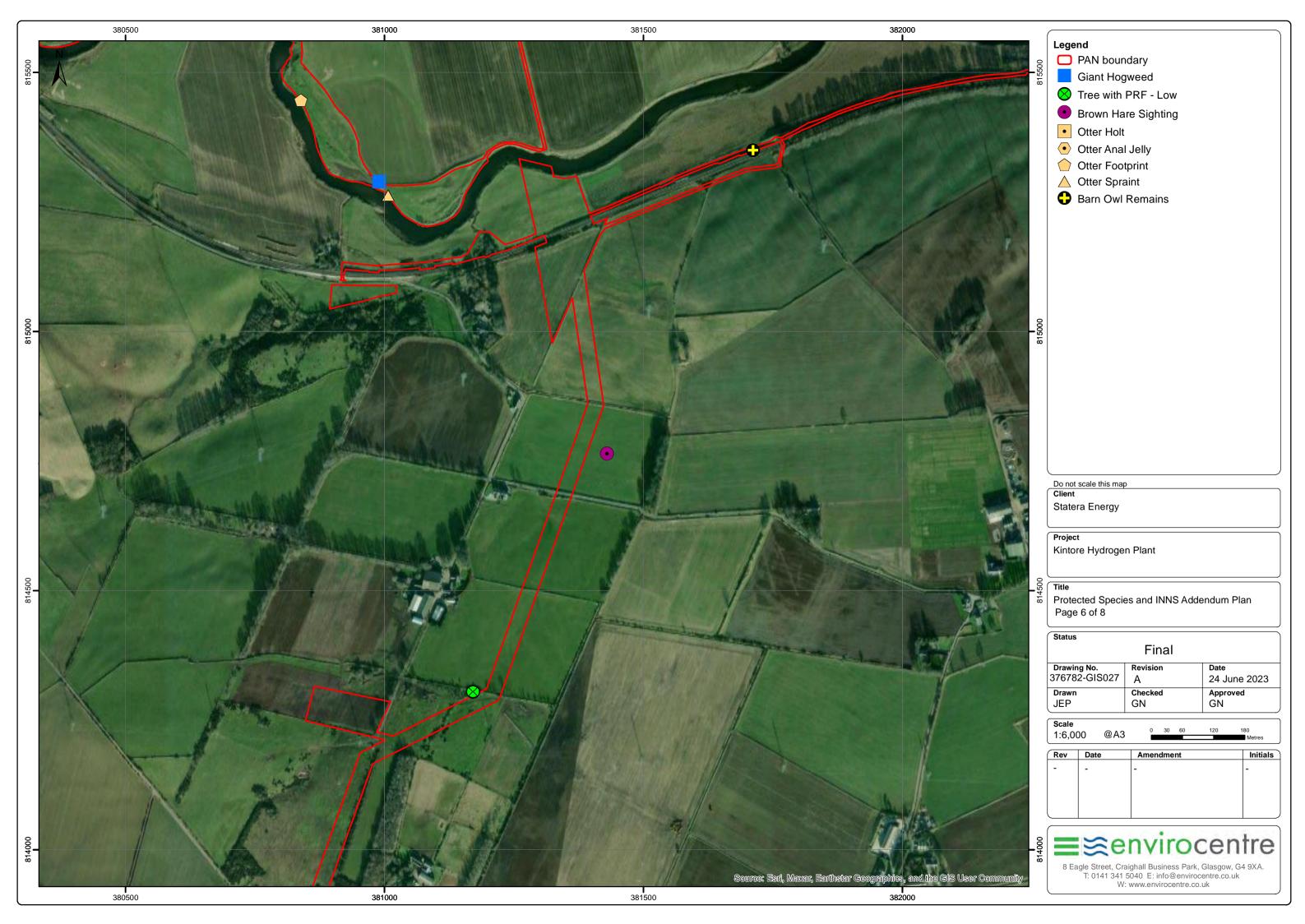


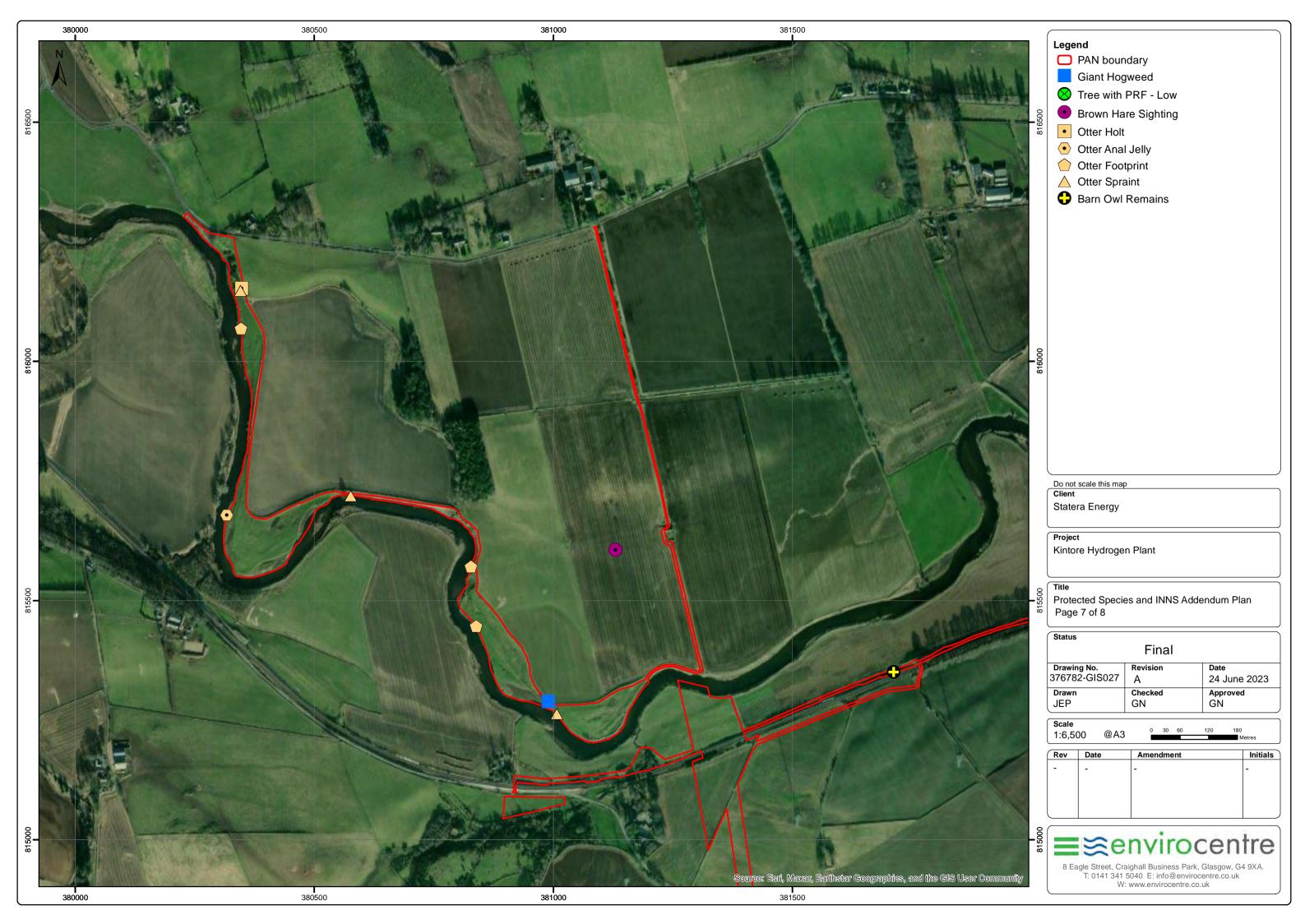














D PHOTOGRAPHS



Photograph 1: Tree with PRFs north of railway line along existing track



Photograph 3: Building adjacent to the site unsuitable for bats



Photograph 5: Otter footprint on bank of River Don



Photograph 2: Tree with PRF adjacent to pipeline route



Photograph 4: Otter holt and spraint on stone outside of entrance within scrub, in the compensatory area



Photograph 6: Otter annal jelly on bank of River Don



Photograph 7: Otter spraint on boulder on River Don



Photograph 8: Barn Owl remnants adjacent to the railway line

E CONFIDENTIAL BADGER ANNEX

Provided in separate confidential annex.