

Kintore Hydrogen Plant Otter and Water Vole Survey Report



December 2023

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EXECUTIVE SUMMARY

EnviroCentre Ltd. were commissioned by Kintore Hydrogen Limited to undertake otter and water vole surveys within the site known as Kintore Hydrogen Plant, in land south of Kintore. The surveys were required to inform development of a Hydrogen electrolysis plant.

One otter couch and two otter lay-ups were identified along the bank of the River Don. Due to the limited evidence of otter, these features they were considered as a low status rest sites as they are likely to provide a temporary 'stop off' for otters when moving through their territory. A number of spraints of varying age classes were present along the south bank of the River Don and Silver Burn. However, no evidence of otter was identified throughout the remainder of the site.

No field evidence of water vole was identified within the areas of suitable habitat during the targeted survey. Overall, the site provides suitable habitat for water vole, but the lack of evidence suggests that water vole are not present within the site.

The known and likely potential impacts to otter as a result of the development based on the current information include:

- Destruction and/ or disturbance of 'low' rest sites for otter to facilitate access/works (abstraction point).
- Removal or fragmentation of sheltered commuting route for otter from vegetation clearance to facilitate works.
- Death or injury to otter due to increased machine activity during proposed works.
- Enhanced noise, vibration, lighting and human disturbance during works which may displace existing otter activity.

An annual update surveys of the site for otter should be completed every 12 months until project completion to keep the baseline data valid. Monitoring of the known otter features should be scheduled following a review of the works programme. Assuming mitigation as outlined below is enacted, a licence for the disturbance of an otter rest site is not currently required.

No evidence of water vole was identified during the survey, however suitable habitat does exist for the species, therefore regular updates for water vole should be undertaken to keep baseline data up to date and to inform development works. No NatureScot Licence is currently required for water vole.

The following broad mitigation should be applied to the project:

- Detailed design to ensure a 30m buffer form each rest site is incorporated into detailed design.
- Monitoring of the known otter features should be scheduled following a review of the works programme.
- A species protection plan should be in place ahead of works commencing to ensure site specific mitigation and compensation is enacted prior to, during and post works.
- A pre-works check of the site for otter and water vole should be completed prior to any further site works, by a suitably qualified ecologist.

Opportunities for compensation are provided in regards to National Planning Framework 4:

- Planting of connective native trees and shrubs in areas where vegetation removal to facilitate works is required is encouraged utilising species that are native and match those in the locale landscape.
- Tree planting along riverbanks and enhancing riparian zones, utilising more water tolerant species would enhance sheltered commuting and in the long term opportunities for otter rest sites, as well as create dark corridors.

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1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd. were commissioned by Kintore Hydrogen Limited to undertake otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) surveys within the site known as Kintore Hydrogen Plant, in land south of Kintore. The surveys were required to inform development of a Hydrogen electrolysis plant.

The 'site' is defined as the area demarcated by the red line boundary as shown in Appendix A.

1.2 Background

A Preliminary Ecological Appraisal (PEA) was undertaken in May 2023¹ of the whole site boundary by EnviroCentre, where the habitats on site were assessed as offering suitability for otter and water vole and some field evidence of otter was identified, therefore a targeted survey for these species was recommended.

1.3 Scope of Report

The aim of the survey was to inform future development works in regards to ecological constraints pertaining to otter and water vole. The main objectives were as follows:

- Search for field evidence of otter and water vole;
- Identify suitable habitat for otter and water vole;
- Make an assessment of site use and identify potential impacts to otter and water vole in the absence of mitigation; and
- Make recommendations for any further survey and/or species licensing requirements and outline appropriate mitigation methods.

1.4 Legislation and Policy

Otter

Otter are European Protected Species (EPS) and are protected under the Conservation (Natural Habitats &c.) Regulations 1994 (the "Habitat Regulations") as amended. Under this legislation it is an offence to deliberately or recklessly:

- capture, injure or kill such an animal;
- harass an animal or group of animals;
- disturb an animal while it is occupying a structure or place used for shelter or protection;
- disturb an animal while it is rearing or otherwise caring for its young;
- obstruct access to a breeding site or resting place, or otherwise deny an animal use of a breeding site or resting place;
- disturb an animal in a manner or in circumstances likely to significantly affect the local distribution or abundance of the species;

¹ ECREP13628_Kintore Hydrogen Plant PEA_FinalV3

- disturb an animal in a manner or in circumstances likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young;
- disturb an animal while it is migrating or hibernating;
- possess, control, transport, sell or exchange specimens of any animal listed on Annex IV of the Habitats Directive. This applies to living or dead specimens and to their derivatives.

It is an offence of strict liability to damage or destroy a breeding site or resting place of such an animal. These sites and places are protected even when the animal isn't present.

A licence may be issued to permit the otherwise unlawful activities listed above if these three tests are satisfied:

- There must be a licensable purpose which includes 'preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;'
- There is 'no satisfactory alternative'; and
- The derogation (i.e. any permission/licence granted) is 'not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range'.

Water Vole

Water voles are partially protected under Schedule 5, Part 4 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to 'intentionally or recklessly':

- damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection; or to
- disturb a water vole while it is occupying a structure or place which it uses for that purpose.

Knowingly causing or permitting any of the above acts to be carried out is also an offence.

In some cases licenses may be issued by NatureScot to enable certain otherwise illegal activities to take place for social, economic or environmental reasons (including development) as long as:

- the licensed activity will contribute to significant social, economic or environmental benefit;
- there is no satisfactory alternative; and
- there will be no significant negative impact on the conservation status of the species.

1.5 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre Limited.

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2 METHODS

2.1 Desk Study

Records and sites

2.2 Field Survey

EnviroCentre Ecologists Gemma Nixon, Scott Fraser and Jennifer Paterson, who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM), conducted the field survey on 24th-27th July 2023, when the weather on survey days and the days prior to survey were dry and temperatures ranged from 12-16°C.

The survey area included a search of all suitable habitat within the site boundary (plus a 250m buffer upstream and downstream of watercourses where accessible). Suitable habitat within and adjacent to the site comprised watercourses, ponds, wetland, ditches and woodland.

2.2.1 Otter

The otter survey followed best practice guidelines², and aimed to identify field signs, including:

- Spraints (otter faeces/droppings used as territorial signposts. Often located in prominent positions and can be placed on deliberate piles of soil or sand). Three categories are used for describing otter spraint: Dried fragmented (Df); Dried intact (Di); and Not fully dry (Nd);
- Footprints;
- Feeding remains (can often be a useful indication of otter presence);
- Paths/slides (otter can often leave a distinctive path from and into the watercourse);
- Holts (underground shelter) are generally found:
 - Within trees roots at the edge of the bank of a river;
 - Within hollowed out trees;
 - In naturally formed holes in the river banks that can be easily extended;
 - Or preferably in ready-made holes created by other large mammals such as badger setts, rabbit burrows or outlet pipes; and
- Couches/lay-ups (couches or lay-ups are places for lying up above ground are usually located near a watercourse, between rocks or boulders, under dense vegetation).

In order to assess their importance, the status of otter resting sites was assigned from Low to High according to Table 2-4 below³.

Table 2-1: Status of Otter Resting Sites

Resting Site Status	Definition
Low	Feature with limited evidence of otter activity – low number of spraints, not all age classes present. Insufficient seclusion to be a breeding site or key resting site, unlikely to have links to the key otter requirements. Most likely to provide a temporary 'stop off'

² Chanin, P. (2003). *Monitoring the Otter Lutra Lutra. Conserving Natura 2000 Rivers, Monitoring Series (No. 10)*. Peterborough: EN, CCW, EA, SEPA, SNH & SNIFFER (accessed July 2021).

³ Bassett, S., & Wynn, J. (2010). *Otters in Scotland: How Vulnerable Are They to Disturbance?* CIEEM In Practice, (70), 19–22 (accessed July 2021).

Resting Site Status	Definition
	for otters when moving through their territory. Loss/disturbance of such a feature is unlikely to be significant in terms of the individual or population.
Moderate	Feature containing sprainting with a range of age classes, but not in significant quantities. Availability may be limited by season, tides or flow. Unlikely to be suitable as a breeding/natal site but will be a key resting site and may be linked to other important features within the territory. The impact arising from a loss or disturbance of such a feature will be determined by the availability of more suitable or well used sites within the otter's territory.
High	Feature has a high level of otter activity, including an abundance of sprainting of all age classes, large spraint mounds, well used grooming hollows, paths and slides. Affords a high degree of cover and is linked to key features such as fresh water and abundance of prey. May be suitable as a breeding area (spraints may be absent from natal holts). The site is usually available at all times of year and at high and low tide/flow. The loss/disturbance of such as feature will often be considered significant in terms of the individual or population.

2.2.2 Water Vole

This water vole survey was undertaken during activity season for water vole (between April to October) to search for field evidence of water vole within or adjacent to the site.

The water vole survey focussed on searching for field evidence of water vole within suitable habitats identified during the PEA whilst undertaking a survey for field evidence following standard survey guidelines⁴.

Factors that influence the suitability of habitat for water voles include:

- Positive: The presence of riparian vegetation along the banks and in the water.
- Positive: A steep bank on a watercourse reducing the risk of burrow inundation.
- Positive: Slow-flowing, relatively deep (over 1m) watercourses.
- Negative: The presence of rocky or otherwise impenetrable substrates.
- Negative: Over-shading by trees.
- Negative: Fast flowing or shallow water, and flashy watercourses.
- Negative: The presence of American mink.

The presence of water vole field evidence was searched for and noted where present. Field evidence includes:

- Faeces: 8-12 mm long, 4-5 mm wide; cylindrical and blunt ended pellets; colour variable with food type. Most droppings left in latrines near the nest, at range boundaries and at water entry points;
- Latrine sites: concentrations of faeces, often with fresh droppings on top of old ones;
- Runways: often 5-9 cm broad and multi-branched; usually within 2m of water's edge and often forming tunnels through vegetation; leading to water's edge or burrows;
- Burrows: 4-8 cm diameter, wider than high; eroded entrances then contract down to typical size; entrances located at water's edge; however some entrances can be up to 3m from the water; no spoil heaps;
- Nests: size and shape of a rugby ball, often in base of rushes, sedges or reeds;
- Feeding stations: located along runways, or at platforms along water's edge; usually a pile of cut/chewed vegetation in sections approximately 10cm long; vegetation ends show marks of two large incisors. Piles of chopped grass, sedge or rush stems, rush pith and leaves;

⁴ Dean, D. M. Strachan R. Gow, & Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds: Fiona Mathews and Paul Chanin. The Mammal Society, London.

- Lawns: short, grazed vegetation around land entrances, often used during nursing periods;
- Footprints: difficult to tell from rat; adult hind foot 26-34 mm (heel to claw); stride 120mm (smaller than rat); occur at water's edge and lead into vegetation; and
- Sound: characteristic 'plop' when a vole enters the water.

Generally, survey emphasis is placed on locating latrine sites as these are the main sign indicating definite presence.

2.3 Disclaimer

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 July 2023.

3 RESULTS AND ASSESSMENT

This section should be read in conjunction with Appendix B: Otter and Water Vole Survey Plan and Appendix C: Photographic record.

3.1 Otter Survey Results

Five records of otter were identified between 2013 – 2016, two records of roadkill on the A96 immediately to the east of the site, and two recorded feeding along the bank of the River Don 1.6km to the north of the site. The River Don and its catchment is known to host a strong otter population.

One otter couch and two otter lay-ups were identified along the bank of the River Don (Appendix B).

Otter Couch

An otter couch was identified on the south bank of the River Don, within the site. The feature was located within a sand bank and grass area where a clear depression was present and otter footprints were also identified in this area (Photograph 1 and 2). Due to the limited evidence of otter, this feature was considered as a low status rest site as it is likely to provide a temporary 'stop off' for otters when moving through their territory.

Layup 1

A layup (L1) was present on the south bank of the River Don, approximately 17m east of the site boundary. The feature was located on a sandbank and grass with potential spraint present (Photograph 3 and 4). Due to the limited evidence of otter, this feature was considered as a low status rest site as it is likely to provide a temporary 'stop off' for otters when moving through their territory.

Layup 2

A layup (L2) was present on the north bank of the River Don, approximately 43m north of the site boundary. The feature was located below a tree and two spraints (Di) were identified in this location also. Due to the low number of spraints and not all age classes present, this feature was considered as a low status rest site as it is likely to provide opportunities for otter when moving through their territory but would not be considered a key resting site (Photograph 5).

Other Evidence

A number of spraints of varying age classes were present along the south bank of the River Don, near where it joins with the Silver Burn and on the Railway line bridge over the Silver Burn (Photograph 6). The River Don is known to host a population of otter.

No evidence of otter was identified throughout the remainder of the site.

Other watercourses, pond and wetland areas within the site and adjacent offer suitable in-channel and bankside vegetation for commuting otter. In addition, the site offers opportunities for otter to rest, shelter or create a holts within and under hollowed out tree roots, overhanging banks, excavations of sandy soils along the edge of the riverbank and within the dense vegetation present along banksides and in adjacent woodland.

Foraging opportunities are present for otter including fish within the River Don, other watercourses, ponds, as well as on bankside habitats and wetland which could provide suitable habitat for small mammals, birds' eggs, amphibians and invertebrates, an additional prey resource for otter.

3.2 Water Vole Survey Results

No field evidence of water vole was identified within the areas of suitable habitat during the targeted survey.

The River Don is considered to be unsuitable for water vole due to the moderate flow speed, as water vole are not strong swimmers.

The smaller watercourses and drainage ditches within and adjacent to the site which were steep sided, heavily vegetated and relatively slow flowing still are considered to offer suitable foraging, commuting and burrow creation habitat for water vole. These watercourses also help connect the site to suitable habitat further afield within the locale.

In general, the site provides the following positive and negative features for water vole:

- Positive: The presence of riparian vegetation along the banks.
- Positive: A steep bank on a watercourse reducing the risk of burrow inundation.
- Positive: Slow-flowing watercourses.
- Negative: Fast flowing or shallow water, and flashy watercourses.

Therefore, overall, the site provides suitable habitat for water vole, but the lack of evidence suggests that water vole are not present within the site.

4 POTENTIAL IMPACTS, FURTHER SURVEY AND LICENSING

4.1 Potential Impacts

The known and likely potential impacts to otter as a result of the development based on the current information include:

- Destruction and/ or disturbance of 'low' rest sites for otter to facilitate access/works (abstraction point).
- Removal or fragmentation of sheltered commuting route for otter from vegetation clearance to facilitate works.
- Death or injury to otter due to increased machine activity during proposed works.
- Enhanced noise, vibration, lighting and human disturbance during works which may displace existing otter activity.

4.2 Further Survey and Licensing

Otter

No further survey other than pre- works checks are currently recommended.

An annual update survey of the site should be completed every 12 months until project completion to keep the baseline data valid.

Monitoring of the known otter features should be scheduled following a review of the works programme.

Assuming mitigation as outlined below is enacted, a licence for the disturbance of an otter rest site is not currently required.

Water Vole

No evidence of water vole was identified during the survey, however suitable habitat does exist for the species, therefore regular updates for water vole should be undertaken to keep baseline data up to date and to inform development works.

Ecological data is considered valid for a period of 12 months.

No NatureScot Licence is currently required for water vole at this time.

5 MITIGATION AND COMPENSATION

5.1 General Good Practice Mitigation

The following broad mitigation should be applied to the project prior and during works to ensure any potential impacts to otter and water vole are avoided or reduced.

- Detailed design to ensure a 30m buffer from each rest site is incorporated into detailed design.
- Monitoring of the known otter features should be scheduled following a review of the works programme.
- A species protection plan should be in place ahead of works commencing to ensure site specific mitigation and compensation is enacted prior to, during and post works.
- A pre-works check of the site for otter and water vole should be completed prior to any further site works, by a suitably qualified ecologist.
- Contractors should be made aware of the possibility of encountering otter at the site and in the locale prior to works commencing.
- A protection zone around the rest site features should be clearly communicated to the project team and included in works planning/site induction material.
- In the event that otter and water vole are discovered on site, all works in that area must stop and an ecologist contacted for advice.
- Temporary lighting used during works, and any replacement lighting, should be designed to be 'wildlife friendly' and should not illuminate the rest sites features, River Don (as well as other watercourses), drainage ditches and dark corridors, such as riparian habitat along River Dee which is utilised by otter for commuting and foraging routes. Screening techniques, dark buffer zones, low- or high-pressure sodium lamps and 'warm white' lighting (LED <2700K) are recommended.
- Works should be undertaken during daylight hours to avoid disturbance to crepuscular species (otter) in the locale.
- Vehicular access into and out of the site must be made slowly and cognisant of the possibility of striking an otter with a vehicle. A maximum speed limit of 15mph is suggested.
- Any trenches or pits made during construction must be covered when unattended or a shallow angled plank inserted to allow animals to escape, should they become trapped inside them.
- A minimum 6m strip of vegetation along watercourses should be retained to provide a buffer for commuting and foraging otter.
- Measures should be in place to preserve water quality and prevent pollution of the river and watercourses following SEPA Guidelines for Pollution Prevention (GPPs).

5.2 Compensation

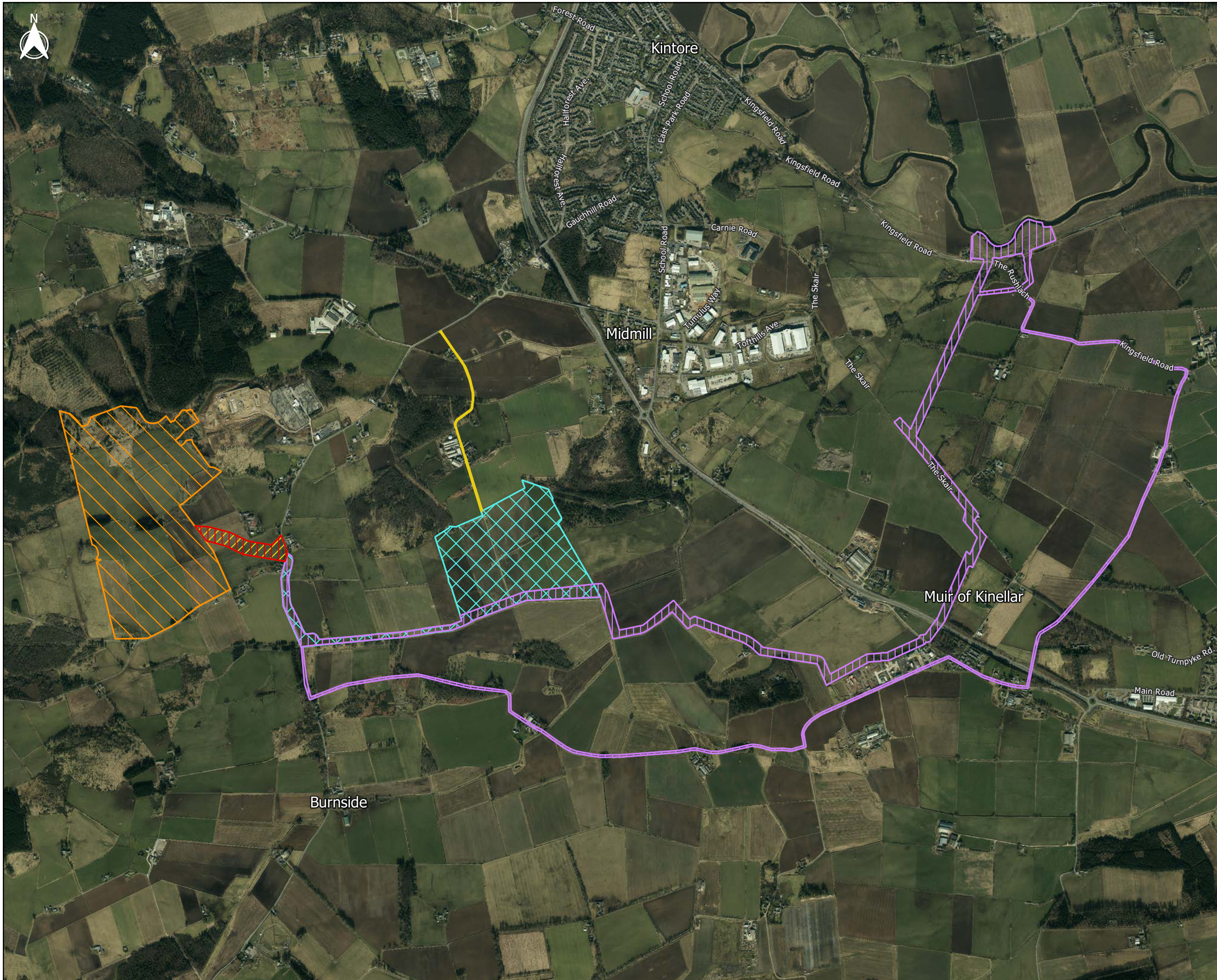
Opportunities for compensation are provided in regards to National Planning Framework 4:

- Planting of connective native trees and shrubs in areas where vegetation removal to facilitate works is required is encouraged utilising species that are native and match those in the locale landscape, including hawthorn (*Crataegus monogyna*), elderberry (*Sambucus nigra*), wild cherry (*Prunus avium*), yew (*Taxus Baccata*), brambles (*Rubus fruticosus*), Scots pine, European Larch, wych elm (*Ulmus glabra*), Norway spruce to provide additional cover for commuting otter to utilise.

- Tree planting along riverbanks and enhancing riparian zones, utilising more water tolerant species such as species of birch, aspen and alder would enhance sheltered commuting and in the long term opportunities for otter rest sites, as well as create dark corridors.
- Restoration of any deteriorated banks could be undertaken via willow spiling, to prevent further erosion and provide bank protection.

APPENDICES

A SITE LOCATION PLAN

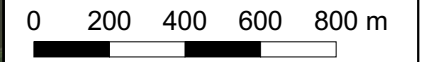


KINTORE HYDROGEN PLANT






Date: 07-07-2023

Paper size: A3

Scale: 1:20,000



Key:

-  Electrolysis plant and grid connection
-  Existing and proposed access roads
-  Hydrogen and water pipeline connections
-  Hydrogen pipeline and gas grid connection
-  Water pipeline connection options and abstraction discharge point



DEVELOPMENT ELEMENTS PLAN

FIGURE 4

Status: DRAFT

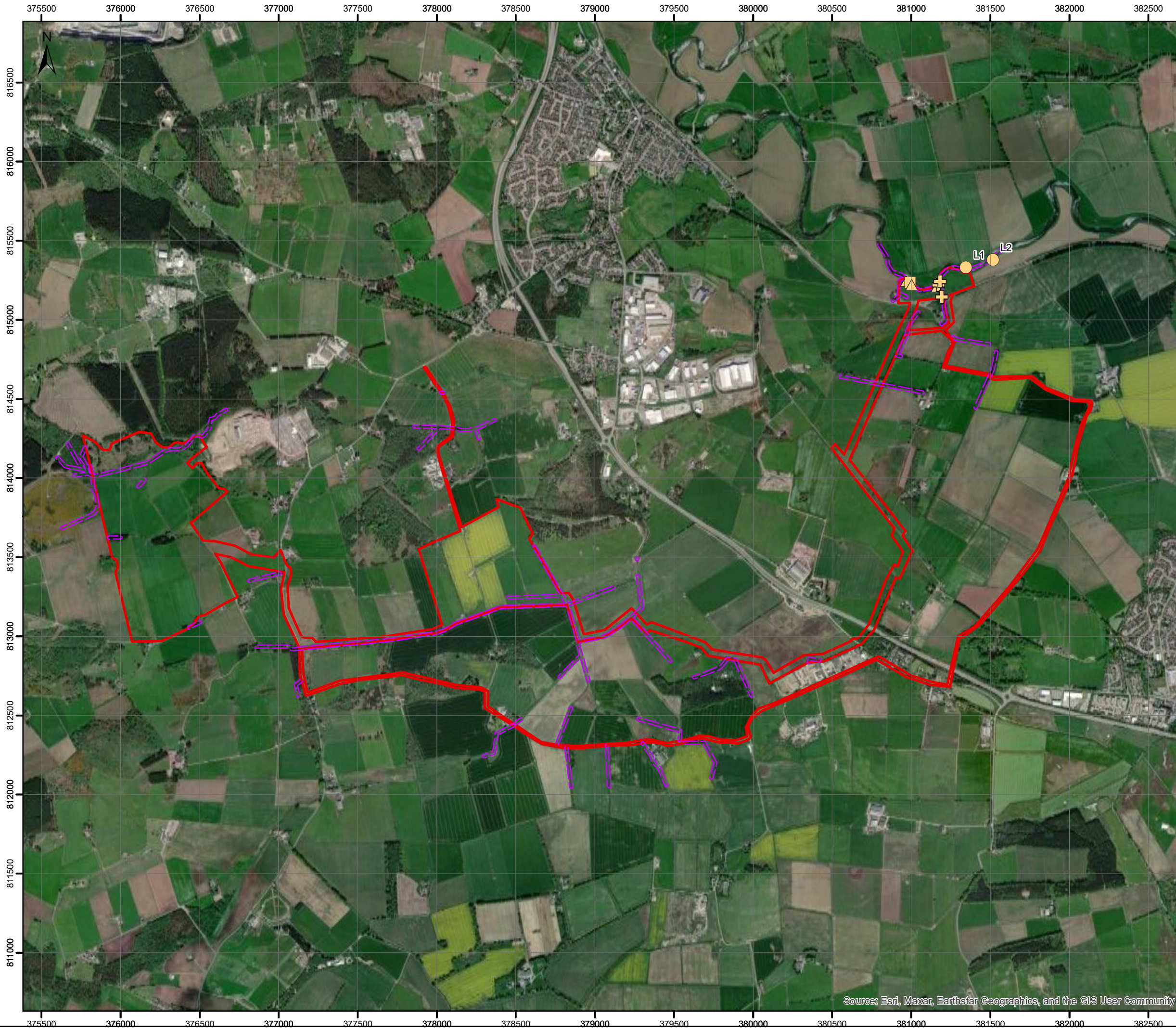
Revision: V2

Drawn by: Rhys Williams

Approved by: Tom Dearing

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B OTTER AND WATER VOLE SURVEY PLAN



- Legend**
- Hydrogen Development Area
 - Watercourse Buffer
 - Otter Couch
 - Otter Lay-up
 - Otter Footprint
 - + Otter Spraint

CONFIDENTIAL

Do not scale this map

Client
Statera Energy

Project
Kintore Hydrogen Plant

Title
Otter and Water Vole Survey Results
Full View

Status
Final

Drawing No. 376782-GIS007	Revision -	Date 09 Sept 2023
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Drawn JEP	Checked GN	Approved GN
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Scale
1:23,000 @A3

Rev	Date	Amendment	Initials
JAS	22/11/23	Added labels and changed map pages	JAS

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- Legend**
- Hydrogen Development Area
 - Watercourse Buffer
 - Otter Couch
 - Otter Lay-up
 - Otter Footprint
 - + Otter Spraint

CONFIDENTIAL

Do not scale this map

Client
Statera Energy

Project
Kintore Hydrogen Plant

Title
Otter and Water Vole Survey Results
Area of Interest

Status
Final

Drawing No. 376782-GIS007	Revision -	Date 09 Sept 2023
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Drawn JEP	Checked GN	Approved GN
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Rev	Date	Amendment	Initials
JAS	22/11/23	Added labels and changed map pages	JAS

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Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

C PHOTOGRAPHIC RECORD



Photograph 1: Otter couch along bank of River Don in grassy sand bank



Photograph 2: Otter footprints on bank of River Don



Photograph 3: Otter lay-up along bank of River Don



Photograph 4: Otter spraint along bank of River Don near rest site



Photograph 5: Otter lay-up along bank of River Don under a tree



Photograph 6: Otter spraint on railway line bridge over Silver Burn