

Hatton Mains Edinburgh

Inverdunning (Hatton Mains) Ltd



Ecological Assessment



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October
2018



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SUMMARY

Nigel Rudd Ecology was commissioned by Inverdunning (Hatton Mains) Ltd to undertake a Phase 1 Habitat Survey, extended to include protected species, badgers and bats, and local designated sites, over land at Hatton Mains, Edinburgh. There was no suitable habitat for water voles, otters and breeding great crested newts.

The field surveys were complemented by inspection of biological records for the site and the surrounding area to a radius of 5km. In addition, potential effects on European and UK statutory designated sites within a radius of 2.5km, and local designated sites within 1km were considered.

The survey is required to inform an application to develop the land, in respect of ecological constraints to the proposals. It is proposed to develop the land for housing and public open space. The proposal is to provide vehicle access to the site from Dalmahoy Road which passes north-south through the centre of the Site. The residential development will comprise flatted buildings and a range of house types.

There was found to be no potential adverse effect on European or UK designated sites as a consequence of development of the land.

There are three locally designated sites within 1km of the land; Gogar Burn – Hatton Bridge to Crow Wood LBS (Local Biodiversity Site), Greenburn and Gogar Burn to Hatton Bridge LBS; and the Union Canal – Ratho to Hermiston LBS. The Gogar Burn flows west-east to the south of the Site, south of the A71 Kilmarnock Road. The LBSs are remote from the sites and the features for which they are valued will be unaffected by development as proposed.

The Phase 1 Survey involved a walkover of the land noting habitats and plant communities and sought evidence of use of the land by badgers and bats.

The Phase I Habitat Survey revealed restricted habitat diversity. The Hatton Mains Site presented arable habitat, with strips of neutral grassland and hedges, on the edges of the fields. The habitat resource is unexceptional.

No evidence was found of badgers using the land. The species is found within 1km of the site, but the records were from locations separated from the site by major roads and similar habitat to the site. No bat roost opportunity was found on the land and there is negligible forage habitat forage habitat.

The development proposals for the Site comprise houses and flatted buildings with private gardens, public open space and SUDS provision. It is anticipated there will be slight enhancement of the biodiversity of the land.



1.0 INTRODUCTION

- 1.1 This report is commissioned by Inverdunning (Hatton Mains) Ltd in respect of residential development proposals for land at Hatton Mains, Edinburgh (the Site) (NT143694)
- 1.2 The Site is an irregularly shaped tract of land, with the aligned east-west, bounded on the south by the A71 Kilmarnock Road, and to the north, east and west by farmland. Dalmahoy Road, aligned north-south, divides the Site into two halves. (Fig 1)
- 1.3 The land is crowned and falls to the north and south. The site comprises entirely arable land with very few small trees along some field boundaries, a fringe of neutral grassland on field margins along the lines of hedges, post-and-wire fences, and stone walls. There is a small patch of tall ruderal vegetation in the north of the land, and a small burn on the north boundary of the west site of the Site.
- 1.4 There is no international or UK designated ecological site within 2.5km of the land. There are three locally designated sites within 1km of the land; Gogar Burn – Hatton Bridge to Crow Wood LBS (Local Biodiversity Site), Greenburn and Gogar Burn to Hatton Bridge LBS; and the Union Canal – Ratho to Hermiston LBS.
- 1.5 The proposal is to develop the land for housing and public open space. The proposal is to provide vehicle access to the site from Dalmahoy Road. The residential development will comprise flatted building and a range of house types.
- 1.6 It is important this is achieved with no adverse impact on biodiversity. The purpose of the survey is to ensure the wellbeing of protected species is safeguarded during construction and operation of the development and to ensure there is no adverse effect of development on designated sites.
- 1.7 The report is intended to: identify ecological constraints facing proposed development of the land; identify potential impacts of development; identify the need for further surveys where applicable; and inform mitigation proposals and recommendations to be made.
- 1.8 The report will set out the survey methods, the findings of the survey, an assessment of the impact of development and recommendations for planting and habitat creation.

2.0 LEGISLATION & POLICY

- 2.1 The following legislation and policies are relevant to the current assessment:
 - The Wildlife & Countryside Act 1981 as amended;
 - The Wildlife and Natural Environment (Scotland) Act 2011;
 - The Conservation (Natural Habitats &c) Regulations 1994
 - The Nature Conservation Scotland Act 2004;
 - The Protection of Badgers Act 1992;
 - Scottish Planning Policy 2014;
 - Edinburgh Local Development Plan (2016); and



- Edinburgh LBAP (Local Biodiversity Action Plan)
- 2.2 The Wildlife & Countryside Act 1981 as amended - The Act consolidated and amended existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain, Council Directive 79/409/EEC which was updated by Directive 2009/147/EC.
 - 2.3 The Act is one of the most important pieces of environmental legislation in Britain. The Act provides for the protection of wild animals, birds and plants as well as the protection of areas of natural heritage value and the designation of protected areas including, Sites of Special Scientific Interest (SSSIs), National Nature Reserves, (NNRs) and Marine Nature Reserves (MNRs).
 - 2.4 The Act has been variously amended over the years by legislation including the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment Act 2011.
 - 2.5 Wildlife and Natural Environment (Scotland) Act 2011 – The Act makes changes to existing legislation covering deer management, game management, species licensing, muirburn, snaring, badgers, invasive non-native species and protected areas protected areas; SSSIs and ASPs.
 - 2.6 The Conservation (Natural Habitats &c) Regulations 1994 – The Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (The Habitats Directive) into national law. The Regulations have been amended several times in Scotland, the most recent of which was 2012. Irrespective of the amendments, the purpose of the Regulations has remained the same; containing five Parts and four Schedules, the Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.
 - 2.7 The Nature Conservation Scotland Act 2004 – The Act imposes a wide-ranging duty on the Scotland's public sector to conserve biodiversity and protect the nations natural heritage. The Act strengthens protection of SSSIs and increases maximum fines for deliberate or reckless damage to Scotland's important natural land and wildlife habitat from £5000.00 to £40,000.00.
 - 2.8 The Protection of Badgers Act 1992 – The Act protects badgers by making it an offence to: wilfully kill, injure, take or attempt to kill a badger; possess a dead badger or any part of a dead badger; cruelly ill-treat a badger; use badger tongs in the course of killing, taking or attempting to kill a badger; dig for a badger; possess, sell or offer for sale any live badger; or mark, tag or ring a badger.
 - 2.9 It is also a crime to interfere with a badger sett by intentionally or recklessly causing or allowing: damage to a sett or any part of it; destruction of it; sett access to be obstructed, or any entrance of it; a dog to enter it; disturbance to a badger when it is occupying it.
 - 2.10 There is provision in the Act for licensing any otherwise illegal activity if it can be demonstrated this is in pursuit of a legitimate purpose.
 - 2.11 Scottish Planning Policy 2014 – SPP sets out its principles for safeguard of Scotland's Natural Heritage. They are:



- facilitate positive change while maintaining and enhancing distinctive landscape character;
 - conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;
 - promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and co-ordinated way;
 - seek to protect soils from damage such as erosion or compaction;
 - protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
 - seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
 - support opportunities for enjoying and learning about the natural environment.
- 2.12 Planning authorities are required to adhere to the principles by preparing Development Plans and Development Management Plans, The Development plans should identify International, national and locally designated sites and afford them protection appropriate to their level of designation.
- 2.13 Edinburgh Local Development Plan – Policy Env 12 protects against the loss to development of trees protected by a Tree Preservation Order. Should felling of a tree be permitted the policy requires replacement planting to offset the loss of amenity.
- 2.14 Policies Env13, Env 14 and Env 15 cover protection of international, national and local designated sites stating that development will not be permitted which adversely affects these sites, unless there is overriding public interest in development affecting international and national sites, or the benefits from development outweigh the biodiversity value of locally designated sites.
- 2.15 Policy Env 16 states that development that would adversely affect a species protected by European legislation would not be permitted unless:
- There is overriding public need and no satisfactory alternative;
 - a species protection plan is submitted, based on survey, which includes information on the status of the species and the potential adverse impact of development;
 - suitable mitigation is proposed and agreed;
 - and if it is established that the European protected species are present, and the development is not detrimental to the maintenance of the species at a favourable conservation status.
- 2.16 The Edinburgh BAP – The plan addresses the need for co-ordination of work across habitat types in the promotion of biodiversity opportunity. The plan recognises the importance of the built environment to some rarer species. The relationship between built



and natural environment is considered important in terms of water management, flooding and pollution.

- 2.17 The plan also seeks to influence aspects such as development proposals, open space management, rural areas, woodland management, and greening of the built environment.

3.0 THE SURVEY

3.1 Desk Study

3.2 The desk study comprised:

- Inspection of biological data from the National Biodiversity Network Atlas (NBN Atlas);
- Acquisition of data from The Wildlife Information Centre (TWIC);
- Acquisition of information on designated sites within 2.5km of the land from Scottish Natural Heritage (sitelink); and
- Consultation of historical maps of the land and its surroundings.

3.3 Field Survey

3.4 The survey was undertaken by Nigel Rudd (Appendix 1) in August 2018.

3.5 The survey area extended to the site boundary (Fig1) and an area 50m beyond the boundary, where accessible. The weather was dry and bright.

3.6 The survey comprised a walkover of the land consistent with Phase 1 Habitat Survey methodology (JNCC 2010), noting habitat structure and component plant species, augmented by assessment for potential for use by, or inspection for signs of the presence of, species protected under legislation listed above.

3.7 The species sought were badgers and bats, there was no suitable habitat for water voles, otters or great crested newts.

3.8 The findings of the survey are set out below.

3.9 The survey findings are complemented by consideration of recorded data available from the NBN Atlas, and TWIC.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated sites

4.2 International sites



- 4.3 There is no international site within 2.5km of the Hatton Mains land.
- 4.4 *National sites*
- 4.5 There is no UK designated site within 2.5km of the Hatton Mains land.
- 4.6 *Local sites*
- 4.7 There are three Local Biodiversity Sites within 1km of the Site.
- 4.8 The Gogar Burn – Hatton Bridge to Crow Wood LBS (Local Biodiversity Site) and Greenburn and Gogar Burn to Hatton Bridge LBS, sites are contiguous comprising a stretch of the burn corridor. The two sites combine to cover an area of 60ha.
- 4.9 The sites present a shallow burn with associated grassland, wetland and semi-natural woodland habitats with locally notable plants and protected mammals. The burn issues into the River Almond near Edinburgh.
- 4.10 Notable species include water plantain *Alisma plantago-aquatica*, peppermint *Mentha aquatica x spicata*, green figwort *Scrophularia umbrosa*, wintergreen *Pyrola rotundifolia*, badger *Meles meles*, and otter *Lutra lutra*. There are badger setts within the sites.
- 4.11 **Habitats**
- 4.12 The land proposed for development is the entirely arable farmland divided into five fields; with very narrow marginal habitats along field boundaries. There are stone walls on the east and south boundaries of the north-west field. There are intact hedges in the west of the Site and defunct hedges in the east. The south end of Dalmahoy Road is bounded on both sides by intact hedges. There is a wet ditch on the north-west boundary of the land. Neutral grassland bounds all the fields at the base of the hedges and boundary elements. Tree cover is restricted to a few trees scattered along boundaries of the north-west field.
- 4.13 The arable field were either recently harvested for cereals or recently ploughed. Each field had some fallow headland which supported neutral grass and scattered herbaceous plants. The habitat had simple structure, was species poor and intensively farmed. **The habitat attracts site value.**
- 4.14 Neutral grassland forms a narrow fringe around the fields. The plant community is species poor, simple in structure, and affected by biocide and fertiliser treatment. The habitat has value as low-grade linear habitat, providing cover, forage and possibly corridor opportunities for wildlife. The habitat has **site value**.
- 4.15 The dominant hedge species is hawthorn. Most of the hedges are single-species but in places sycamore, beech and elder occur. The hedges had been cut before the survey was undertaken. The hedgerow habitat has similar value to wildlife as the associated neutral grassland habitat. The habitat has variable connectivity with similar habitat beyond the site boundary and attracts a **site value**.
- 4.16 Tree cover is restricted to a few trees, sycamore, Scots pine and ash, on the boundaries of the north-western field. The trees are in fair condition and offer negligible roost



- opportunity for bats. There was no evidence of their use by nesting birds. **The habitat is so restricted as to be insignificant.**
- 4.17 The ditch on the north-west boundary issues to the west of the Site and it is culverted to the east. There is no surface connection with downstream water courses. The ditch comprises a 1.5m trench with a very shallow and narrow water channel. The bank support neutral grasses and tall ruderal species. Standing/running water habitat is a UK BAP priority habitat because of its value to wildlife. The habitat has **very local value** in respect of the Hatton Mains land.
- 4.18 There is a narrow strip of trees on the north-east boundary of the easternmost field. The stand is 'longstanding woodland of plantation origin' and appears on the ancient and longstanding woodland inventory. The value of the woodland is in its species diversity and habitat continuity. The site has **local value** and should be protected from development.
- 4.19 The Site habitat diversity is low as is the species diversity.
- 4.20 **Species**
- 4.21 The only protected species anticipated as resident on the land were badgers and bats. Inspection of the land revealed no significant habitat potential for great crested-newts, otters or water voles.
- 4.22 Badgers
- 4.23 The ecology of badgers (*Meles meles*) and bats (*Chiroptera*) is outlined in Appendix 2. The survey
- 4.24 The land was inspected for evidence of use by badgers (Appendix 2). **No evidence was found of the species using the site.**
- 4.25 The NBN Atlas and TWIC hold records of badgers within 1km of the site but the locations of the record are remote from the site and separated from it by main roads and habitat similar to that presented on the site.
- 4.26 It is considered very unlikely badgers will use the land and therefore development as proposed will not disturb the species or damage their setts. The conservation status of the species will not be compromised.
- 4.27 Bats
- 4.28 There are few trees on the Site. The trees were inspected and exhibited negligible bat roost potential. There are mature trees in a strip of longstanding plantation on the north-east boundary, which offer represent negligible roost potential. The plantation woodland offers forage potential for bats.
- 4.29 NBN Atlas records show Daubenton's (*Myotis daubentonii*), Common and soprano pipistrelle (*Pipistrellus pipistrellus* & *P. pygmaeus*), and brown long-eared bat (*Plecotus auritus*) records within 5km of the site. There are records within 1km of the site.



- 4.30 **It is considered unlikely bats forage over the site and there is negligible opportunity for roosting. There appears to be no threat to the conservation status of bat populations as a result of implementation of development as proposed.**

5.0 ECOLOGICAL CONSTRAINTS, OPPORTUNITIES and RECOMMENDATION

- 5.1 The proposal is to develop land at Hatton Mains for housing.
- 5.2 The proposed development land is arable farmland.
- 5.3 **Designated sites**
- 5.4 International sites – there is no European designated site within 2.5km of Hatton Mains and therefore **no constraint to development in respect of European designated sites.**
- 5.5 UK designated sites - there is no UK designated site within 2.5km of Hatton Mains, and therefore **no constraint to development in respect of nationally designated sites.**
- 5.6 There are three locally designated sites within 1km of the land; Gogar Burn – Hatton Bridge to Crow Wood LBS (Local Biodiversity Site), Greenburn and Gogar Burn to Hatton Bridge LBS; and the Union Canal – Ratho to Hermiston. These sites are discrete from the site and it is not considered the features for which they are valued will be adversely affected by development as proposed.
- 5.7 **It is not considered the presence of the locally designated sites represent a constraint to development as proposed, and no recommend is made in respect of these sites.**
- 5.8 **Habitats**
- 5.9 There will be significant loss of semi-natural habitat because of development as proposed. The only significant habitat loss is that of arable land. **The habitat has low value and their loss represents no constraint to development.**
- 5.10 The habitats lost will be replaced by private houses, private/public garden ground, and public open space. There will be a neutral effect on biodiversity as there will be a loss of relatively simple habitats and replacement with different habitats with similar value. Development as proposed therefore **represents an opportunity to slightly enhance the biodiversity of the Hatton Mains Site by creation of more structurally and species diverse habitats, by making use of native or floribundant and freely fruiting species.**
- 5.11 **Species**
- 5.12 There was no evidence of badgers using the Site and but there are records of the species within 1km of the Site. It is anticipated there will be no risk to the wellbeing of badgers during the construction process but building construction raises potential threats



- to wildlife. **This is not a constraint on development, but a precautionary approach is recommended, putting measures in place to ensure small mammals do not come to harm during this time; open pipes should be closed up at the end of each working day, and trenches should be covered, or a ramp provided to permit animals that fall in a means of exit, to prevent animals becoming trapped. Chemicals and materials should be stored securely.**
- 5.13 There is no bat roost opportunity on the land and the restricted tree cover offers negligible forage opportunity. The potential presence of bats in the vicinity of Hatton Mains represents **no constraint to development. There is negligible forage opportunity, so no potential impact on the conservation status of bat populations.**
- 5.14 There will be clearance of low value semi-natural habitat to make way for development. Nevertheless, **it is recommended that clearance is carried out outside the bird nesting season; March to August. If this is an obstacle to development, it is important that no clearance is undertaken before the land is inspected for nesting birds.**
- 5.15 **Summary**
- 5.16 Development of the Hatton Mains land will result in the loss of low value semi-natural habitat to a range of house types, flats, public open space and SUDS provision. There will be negligible adverse impact on biodiversity from the loss of unexceptional habitats and it is anticipated there is scope for biodiversity benefit as a consequence of habitat diversification.
- 5.17 There will be no impact on the badger population, but precautionary measures should be put in place to safeguard small mammals during construction.
- 5.18 There will be negligible loss of bat forage resource.
- 5.19 There will be no impact on designated or protected sites.
- 5.20 **It is anticipated that there will be a neutral/minor positive impact on biodiversity as a consequence of redevelopment as proposed.**

6.0 CONCLUSIONS

- 6.1 The proposal is to develop land at Hatton Mains, Edinburgh, for residential use. The proposals comprise blocks of flats and mixed housing across the site. Open space with tree and shrub planting will be distributed across the site and there will be creation of a SUDS facility. New planting will be brought under management for biodiversity enhancement.
- 6.2 The land and the immediate area around were surveyed in August 2018 to determine constraints to development of the site by assessing the habitat resource, potential for, or evidence of, badgers and bats using the site as well as potential effects of development on designated sites.
- 6.3 The site supports recently-harvested arable habitat with no buildings and negligible additional semi-natural habitat.



6.4 **Habitats**

6.5 There will be loss of low value habitat to development, which would be mitigated by tree and shrub planting within public open space throughout the site and the creation of private gardens. There will be no constraint to development because of habitat loss.

6.6 **Species**

6.7 Badgers and small mammals – there is no evidence of the badgers using the land, but they are found within 1km of the site. No further survey work is necessary in respect of badgers, but it is recommended the precautionary approach set out above is adopted during construction.

6.8 Bats – There will be negligible loss of forage opportunity and no loss of roost opportunity. No further inspection/survey is required.

6.9 Birds – there is potential for bird nesting in the semi-natural habitats. No further survey work is necessary, but site clearance should be undertaken outside the bird nesting season.



Bibliography

Collins, J. (ed) (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London.

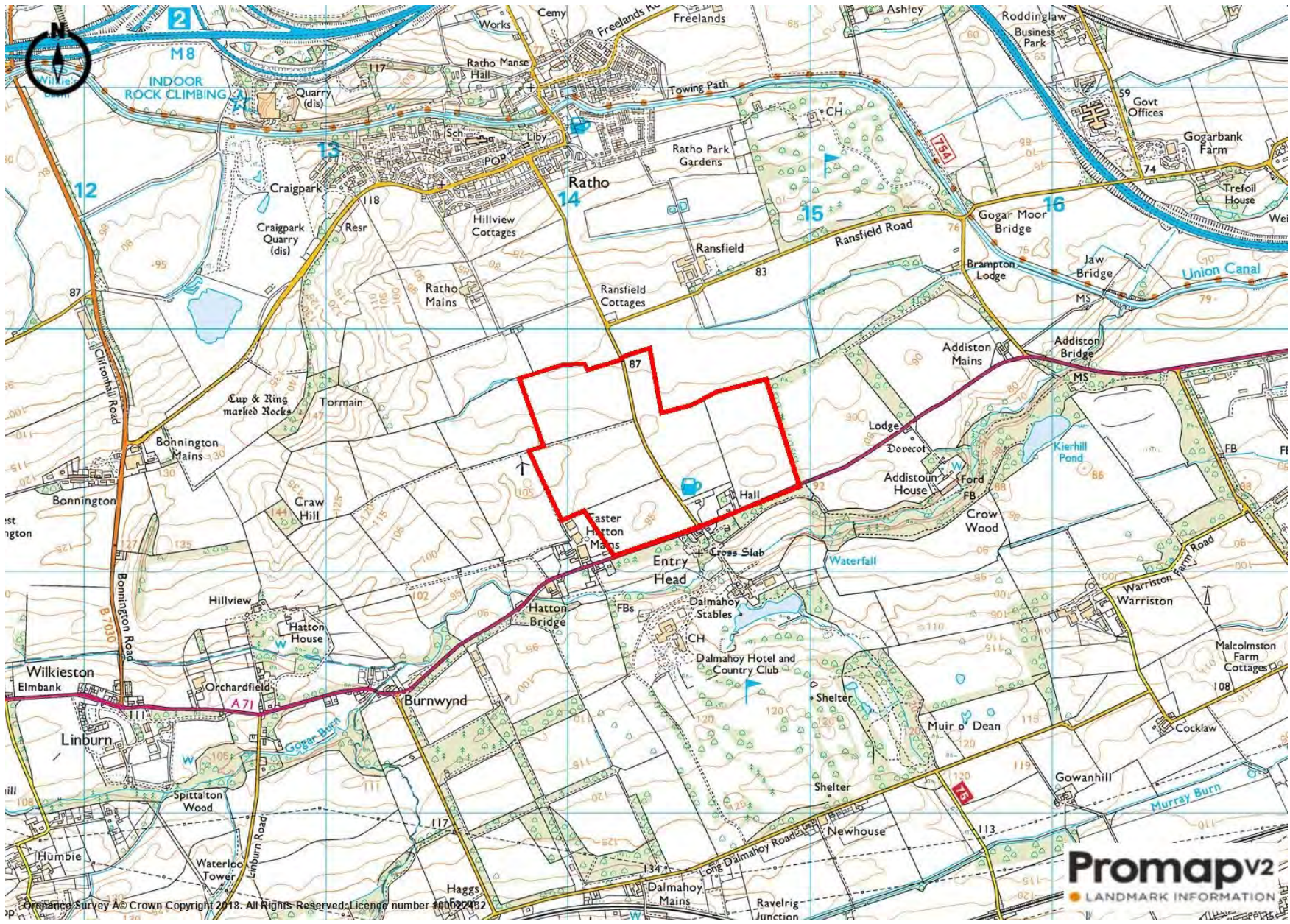
JNCC, (2010), *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*, ISBN 0 86139 636 7



Figure 1

Location Plan

Figure 1



**Hatton Mains
Edinburgh**

Location Plan

October 2018

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Figure 2

Phase 1 Habitat Plan

Figure 2



-  Scattered trees
-  Neutral grass
-  Tall ruderal
-  Ditch
-  Arable
-  Intact hedge
-  Defunct hedge

**Hatton Mains
Edinburgh**

Phase 1 Habitat Plan

October 2018

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Promap v2
LANDMARK INFORMATION



Appendix 1

Personnel

Nigel Rudd BSc CBiol MRSB CMLI

Consultant ecologist with thirty-seven years-experience. Twenty-three years part-time and thirteen full time. Over twenty-five years-experience in Phase 1 Habitat Survey, twenty in bat, otter, and badger survey and fifteen years in reptile, and formal great crested newt surveys.

Graduated in Applied Biology – Honours Ecology in 1976. (Liverpool Polytechnic)

Three years' research in estuarine algae Heriot Watt University. Lectured Ecology to Landscape students at Edinburgh College of Art/Heriot Watt University 1979-2002, Dean of Faculty Environmental Studies 1998-2000.

Chartered Biologist – Member of the Royal Society of Biology since 1976
Chartered Landscape Architect – member since 1986

Clients – Major house builders, Local and Central Government, non-governmental organisations. Provided survey, EA and BREEAM reports. Professional witness. Co-authored policy and methodology reports.



Appendix 2

Species inspections



Badgers

Background – The badger is the largest member of the Mustelidae in Britain weighing up to 20kg and reaching a length of 1m. Badgers are strong animals, adapted to digging, have good hearing and a well-developed sense of smell.

Badgers live in setts. A sett is a network of underground tunnels, which can have a total length of several hundred metres, although individual tunnels reach only 15m. The tunnels incorporate nesting and sleeping chambers, which are usually lined with dry plant material.

Setts are recognised by the large volume of soil and rock deposited at their entrances and the shape of the opening, usually an oval/arch wider than it is high. Plant debris from the bedding is often found close to the entrances. Setts are only excavated where the soil is deep enough and dry.

The setts vary. Main setts are large and in continuous use and on average have ten to twelve entrances. Often close to a main sett (up to 150m away) there may be an Annexe sett linked to the main sett by established paths. Annexe setts have an average of eight entrances and may not be in continuous use. Subsidiary setts are close to the main sett and are not connected by a clear path and not continuously active the average number of entrances is four. The fourth kind of sett is an Outlying sett. These can be distinguished by having little associated spoil, no approach path and are seldom used. Often, they can be occupied by other species such as foxes and rabbits. The average number of holes is two.

The badger diet is mainly earthworms but also includes fruit, berries, small mammals, birds, carrion, insects and other invertebrates. Usually the badgers find the earthworms in areas of short grass, the most important forage resource used.

Badgers live in extended families or clans with up to 6 adults. They are territorial, often marking the boundary of their territory with latrines. The latrines can be used to establish the size of badger territories in bait marking exercises. The territory can extend to 120 hectares in areas with plenty of improved grassland. Where the forage resource is poorer the territory can be much larger.

Badgers mate at any time of the year and births are most common between December and June.

Badgers and the Law

Badgers are protected by the Protection of Badgers Act 1992, which is designed to protect the species against cruelty and incidental effects of lawful activity that might harm badgers.

Under the legislation it is an offence to wilfully or recklessly:

kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so
Interfere with a sett by damaging or destroying it
Obstruct access to, or any entrance of, a badger sett
Disturb a badger when it is occupying a sett.

A person is not guilty of an offence if the act was '*the incidental result of a lawful operation and could not have been reasonably avoided*'; what is reasonable often has to be determined by the courts.



A badger sett is defined as '*any structure or place which shows signs of current use by a badger*', including culverts, pipes, holes under sheds, piles of boulders, old mines and quarries.

Current does not mean current occupation but applies to any sett in an area of current badger activity. This applies if the sett is used for only short periods in the year.

The Act makes provision for the issue of licences permitting otherwise illegal operations. Scottish Natural Heritage (SNH) is the licence issuing authority for the purposes of development.

The Survey - The inspection was carried out in August 2018 and involved inspection the land for evidence of use by badgers.

In addition to setts, there are a number of signs that indicate badger activity. These include: hair on fences; paths or runs; footprints; latrines; snuffle holes in the ground; day nests and scratch marks on trees.

The site and surrounding accessible land to a radius of 50m was assessed for badger activity. A constant search method was employed in a thorough walkover of the land.

No evidence was found of badgers using the land.

Bats

Background - Bats are mammals. They are the only mammals capable of true flight and feed at night, on insects.

During the active seasons of the year, bats require a reliable source of insect food, and therefore habitat rich in insects is good for bats. The preferred feeding habitats are well vegetated, moist, sheltered and warm areas such as mixed woodland, freshwater and hedgerow.

Bats roost during the day in a range of places. In summer females form nursery colonies mainly in buildings, especially houses. Males and non-breeders will use a variety of crevice-type locations, including under slates, gaps in masonry, hollows in trees and bridges, and some species also use these sites for nursery roosts.

Distance travelled to feed varies with species, the pipistrelle is known to travel 3 to 5km radius from the roost, while long-eared bats only travel about 1km as a maximum. Bats use linear features of the landscape: rivers, hedges, woodland edge, to commute from their roost and between feeding areas. These linear features are also feeding routes.

Bats are true hibernators, that is, they are able to survive the winter with little food by lowering their body temperature and surviving on stored fatty deposits built up in the autumn. They use a variety of sites for hibernation: hollow trees, caves, old mines, or more superficial sites (depending on species) like crevices in buildings and bridges, old rubble-filled stone walls, even under roof slates or tiles. Most species require a stable cool temperature for hibernation and generally the deeper and more sheltered the space, the more stable is the temperature. Unlike



some other hibernators, bats may be active at any time during the winter, particularly on mild nights. They will slowly arouse from hibernation and become active when disturbed, and so are particularly vulnerable in winter when becoming active will possibly exhaust their stored energy supply.

Bats and the Law - The Wildlife and Countryside Act 1981 (WCA) protects bats and their roosts in England, Scotland and Wales. Some parts have been amended by the Nature Conservation (Scotland) Act 2004.

The Conservation (Natural Habitats, &c.) Regulations 1994 (better known as the Habitats Regulations) implement the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora - better known as the Habitats Directive. All bats are listed as 'European protected species of animals'

Under the law it is an offence for any person to:

- Recklessly kill, injure or take a bat. Under the Habitats Regulations it is an offence to deliberately capture or kill a bat.
- Possess or control a live or dead bat, any part of a bat, or anything derived from a bat. This is an offence of strict liability, in other words the onus of proof is on the person in possession of the bat to show, on a balance of probabilities, that they have it lawfully. An offence is not committed if the bat was not killed, taken, or sold to them or anyone else illegally.
- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection. This is taken to mean all bat roosts whether bats are present or not. There is a defence that this is not illegal in a dwelling house, but the defence can only be relied on (other than in the living area of a dwelling house) if the Statutory Nature Conservation Organisation (SNCO), i.e. Scottish Natural Heritage was notified about the proposed action and allowed reasonable time to advise as to whether it should be carried out, and if so, how. Under the Habitats Regulations it is an offence to damage or destroy a breeding site or resting place of any bat. This is an absolute offence - in other words, recklessness does not have to be proved.
- Recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection. There is a defence that this is not illegal in a dwelling house, but the defence can only be relied on (other than in the living area of a dwelling house) if the relevant SNCO was notified about the proposed action and allowed reasonable time to advise as to whether it should be carried out, and if so, how. Under the Habitats Regulations it is an offence to deliberately disturb a bat (this applies anywhere, not just at its roost).
- Sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead bat, any part of a bat, or anything derived from a bat. It is also an offence to publish, or cause to be published, any advertisement likely to be understood as conveying that they buy or sell, or intend to buy or sell, any live or dead bat, part of a bat or anything derived from a bat. Sale includes hire, barter and exchange.



- Set and use articles capable of catching, injuring or killing a bat (for example a trap or poison), or knowingly cause or permit such an action. This includes sticky traps intended for animals other than bats.
- Make a false statement in order to obtain a licence for bat work.
- Possess articles for the purpose of them being used to commit an offence, or to attempt to commit an offence. These are punishable in a like manner as for the actual offence.

The Survey - Evidence sought for bats using trees and buildings as roosts are suitable holes and crevices, scratch marks, droppings, grease and urine staining and individual animals.

The survey was undertaken in August 2018 and involved inspection of mature trees from the ground.

No potential roost opportunity was identified in trees on the site. No recommendation is made in respect of roosting bats.

There was no significant bat forage opportunity on the land.



Appendix 3

Plant species list



Hatton Mains

Edinburgh

Plant Species

Annual meadow grass
Ash
Beech
Bent grass
Buttercup
Cock's foot
Dandelion
Dock
Fescue
Hawthorn
Hogweed
Nettle
Pine
Ryegrass
Sycamore
Thistle
Yorkshire fog

Poa annua
Fraxinus excelsior
Fagus sylvatica
Agrostis sp.
Ranunculus repens
Dactylis glomerata
Taraxacum officinale
Rumex obtusifolius
Festuca sp.
Crataegus monogyna
Heracleum sphondylium
Urtica dioica
Pinus sp.
Lolium perenne
Acer pseudoplatanus
Cirsium
Holcus lanatus





Appendix 4

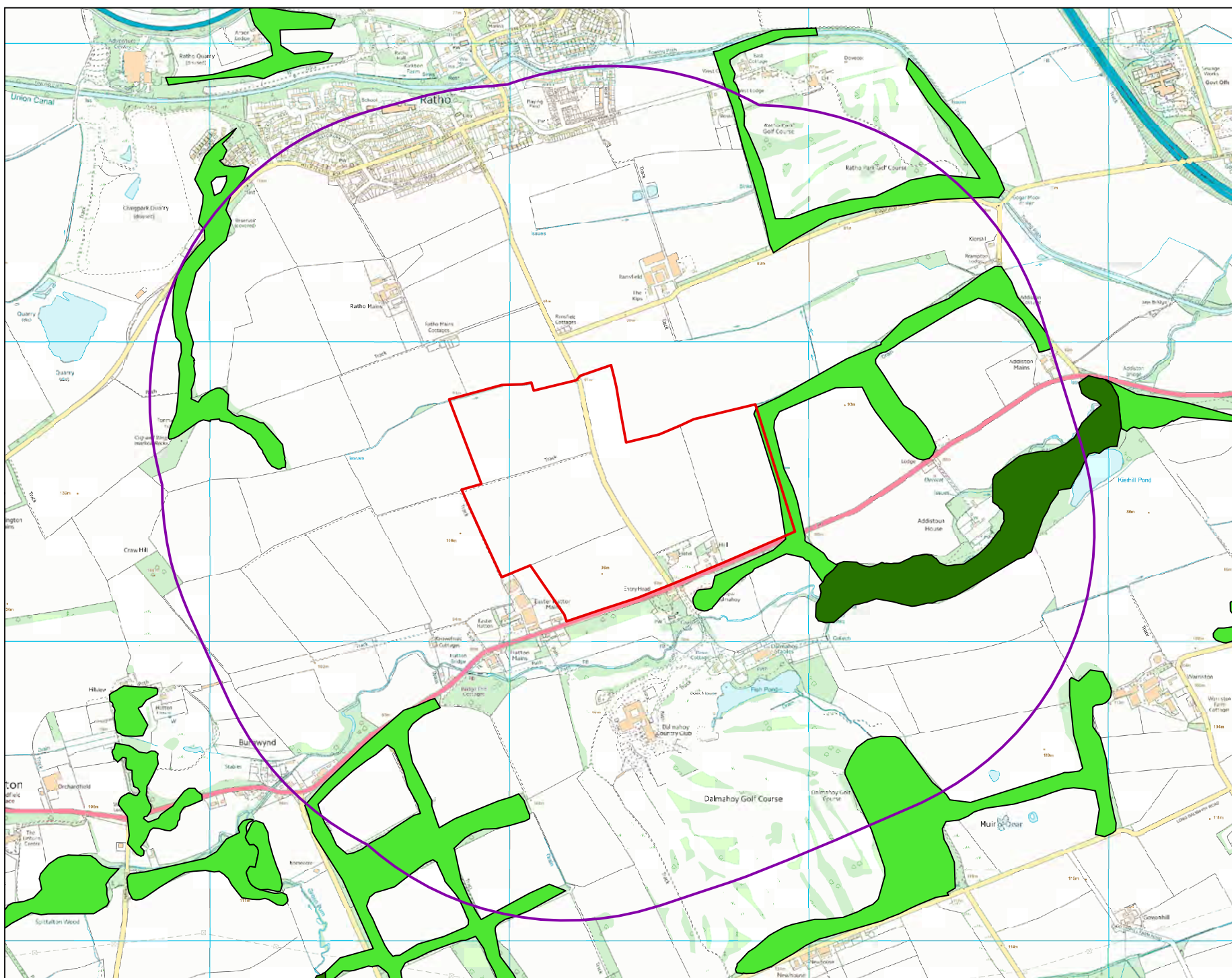
Sites & Data

Ancient Woodland

Site
Hatton Mains
Grid Reference
NT143694

Legend

- Ancient Woodland**
ANTIQUITY
-  Ancient (of semi-natural origin)
 -  Long-Established (of plantation origin)



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0 1 Kilometers

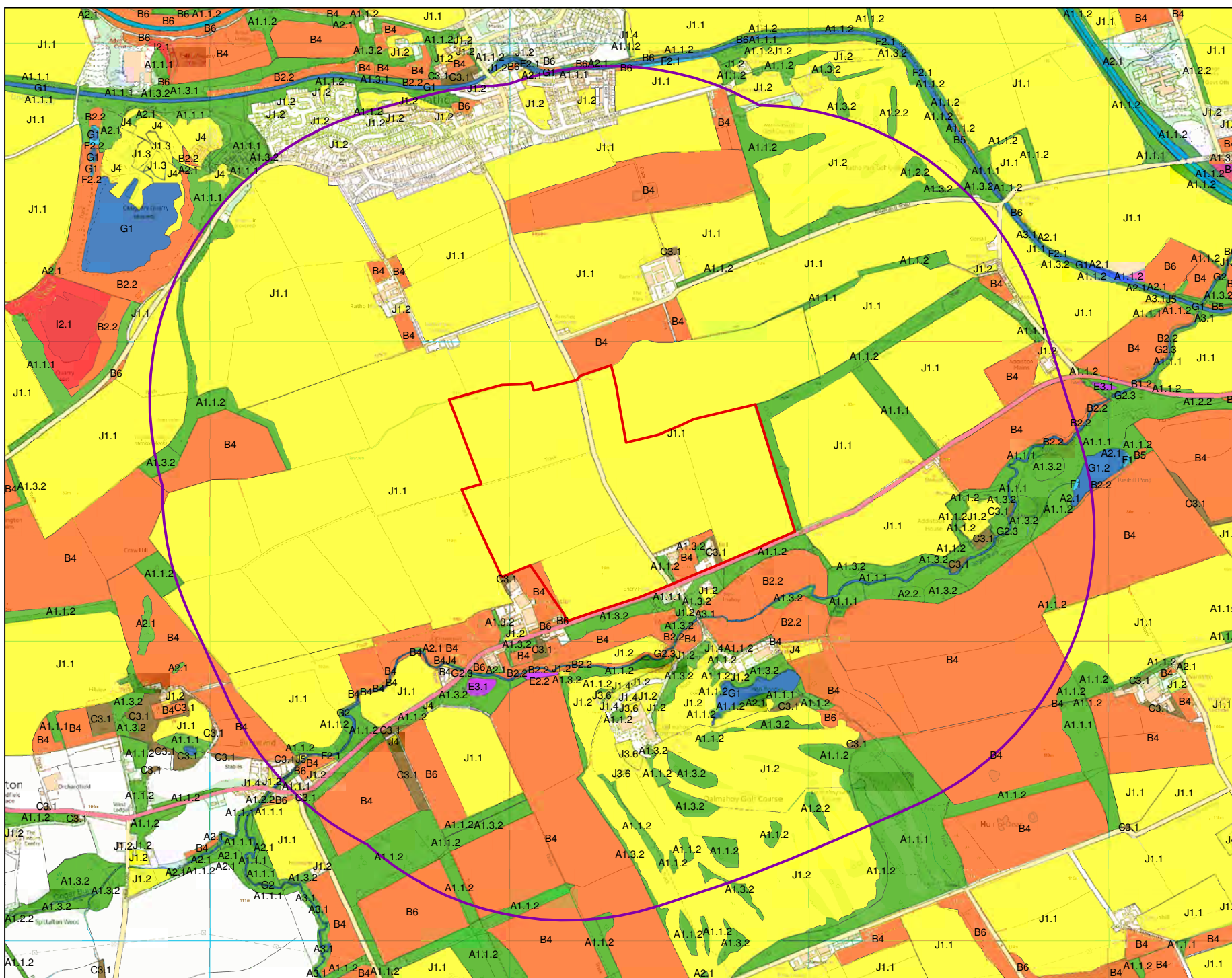
Phase 1 Habitats

Site
Hatton Mains
Grid Reference
NT143694

Legend

Phase 1 Habitat Groups

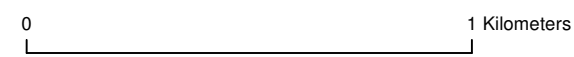
- Woodland and scrub
- Grassland and marsh
- Tall herbs and fern
- Heathland
- Mire
- Swamp, marginal & inundation
- Open Water
- Coastal
- Rock exposure and waste
- Miscellaneous

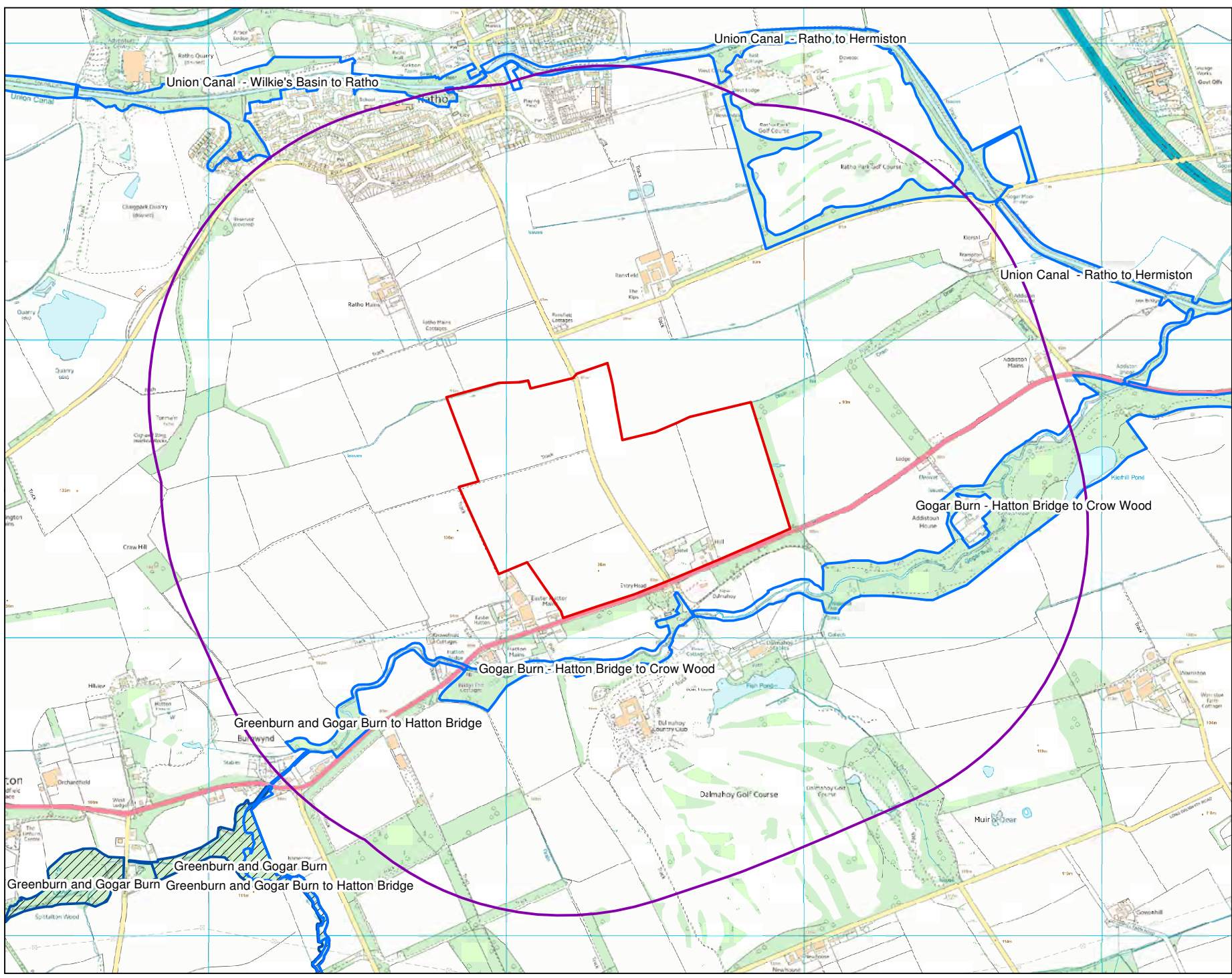


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LBS

Site
 Hatton Mains
Grid Reference
 NT143694

Legend

- Edinburgh LBS
- STATUS**
- West Lothian LBS
- West Lothian Proposed LBS

N



Date: 12 September 2018

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Gogar Burn - Hatton Bridge to Crow Wood Local Biodiversity Site

Grid reference NT155692

Total area (ha) 33.43

Associated sites Greenburn and Gogar Burn to Hatton Bridge LBS, Union Canal - Ratho to Hermiston pLBS, Gogar Burn - Union Canal to Fairview pLBS.

SITE DESCRIPTION

Summary A small, shallow burn including the riparian habitats, associated grassland and wetland habitats with locally notable plants and a protected mammal.

Physical description The site includes both Gogar Burn and Green Burn (upstream from Kaimes). The burn runs into the River Almond near Edinburgh Airport.

Main habitats Rivers, broadleaved semi-natural woodland and mixed plantation.

Notable habitats Broadleaved semi-natural woodland, swamp and standing water.

Notable species Water-plantain (*Alisma plantago-aquatica*), Lesser Pond-sedge (*Carex acutiformis*), Upland Enchanter's-nightshade (*Circaea lutetiana* x *alpina* = *C. x intermedia*), Peppermint (*Mentha aquatica* x *spicata* = *M. x piperita*), Common Reed (*Phragmites australis*), Green Figwort (*Scrophularia umbrosa*), Bulrush (*Typha latifolia*), Eurasian Badger (*Meles meles*)

Biodiversity features Badger sett (main breeding sett and annex) recorded on site. 1.99ha of long-established (of plantation origin) and 16.12ha of ancient semi-natural woodland on site.

Access and Use Within 100m of core path network. Site falls within the Gogar candidate Special Landscape Area (cSLA).

ASSESSMENT AND STATUS

Assessment date	02/12/2014
Current status	LBS
Previous status	Gogar Burn SINC and Gogar Burn Listed Wildlife Site, Gogar Burn LBS
Other status	None
Date:	10/03/2015

314000

315000

316000

670000

669000



Map:
LBS Map

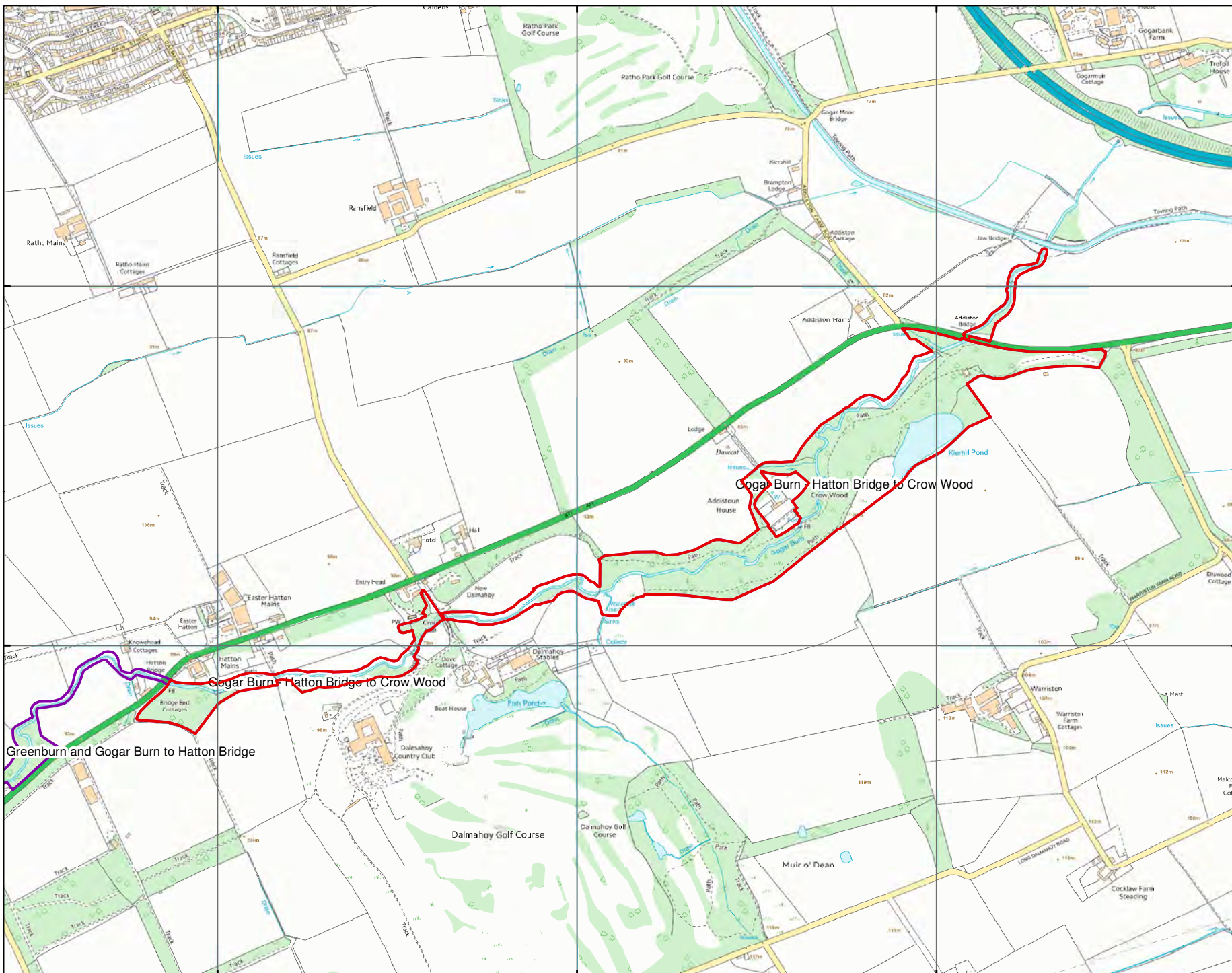
Local Authority:
City of Edinburgh

Site
Gogar Burn - Hatton Bridge to Crow Wood

Grid Reference
NT155692

Legend

-  Edinburgh LBS
-  Selected LBS



Greenburn and Gogar Burn to Hatton Bridge

Gogar Burn - Hatton Bridge to Crow Wood

Gogar Burn - Hatton Bridge to Crow Wood



Date: 10 March 2015

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The Wildlife Information Centre

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Greenburn and Gogar Burn to Hatton Bridge Local Biodiversity Site

Grid reference	NT131674
Total area (ha)	31.09
Associated sites	Gogar Burn - Hatton Bridge to Crow Wood LBS and Kirknewton Estate LBS (WLC).

SITE DESCRIPTION

Summary	Burn and associated riparian habitats, including woodland and scrub, with locally rare plants and protected mammals.
Physical description	
Main habitats	Rivers, broadleaved plantation, coniferous plantation and inland basic cliff.
Notable habitats	Broadleaved semi-natural woodland
Notable species	Quaking-grass (<i>Briza media</i>), Fat-hen (<i>Chenopodium album</i>), Upland Enchanter's-nightshade (<i>Circaea lutetiana</i> x <i>alpina</i> = <i>C. x intermedia</i>), Common Cudweed (<i>Filago vulgaris</i>), Wall Lettuce (<i>Mycelis muralis</i>), Pale Persicaria (<i>Persicaria lapathifolia</i>), Round-leaved Wintergreen (<i>Pyrola rotundifolia</i>), Ragged-Robin (<i>Silene flos-cuculi</i>), Charlock (<i>Sinapis arvensis</i>), Eurasian Badger (<i>Meles meles</i>), Otter (<i>Lutra lutra</i>)
Biodiversity features	11.62ha of long-established ancient woodland (of plantation origin) and 5.66 ha of ancient semi-natural woodland on site. Badger sett (main breeding sett) recorded on site 2002.
Access and Use	Core path through site. Site falls within Ratho Hills candidate Special Landscape Area (cSLA).

ASSESSMENT AND STATUS

Assessment date	02/12/2014
Current status	LBS
Previous status	Gogar Burn SINC and Gogar Burn Listed Wildlife Site, Gogar Burn LBS
Other status	None
Date:	10/03/2015

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Map:
LBS Map

Local Authority:
City of Edinburgh

Site
Greenburn and Gogar Burn to Hatton Bridge

Grid Reference
NT131674

Legend

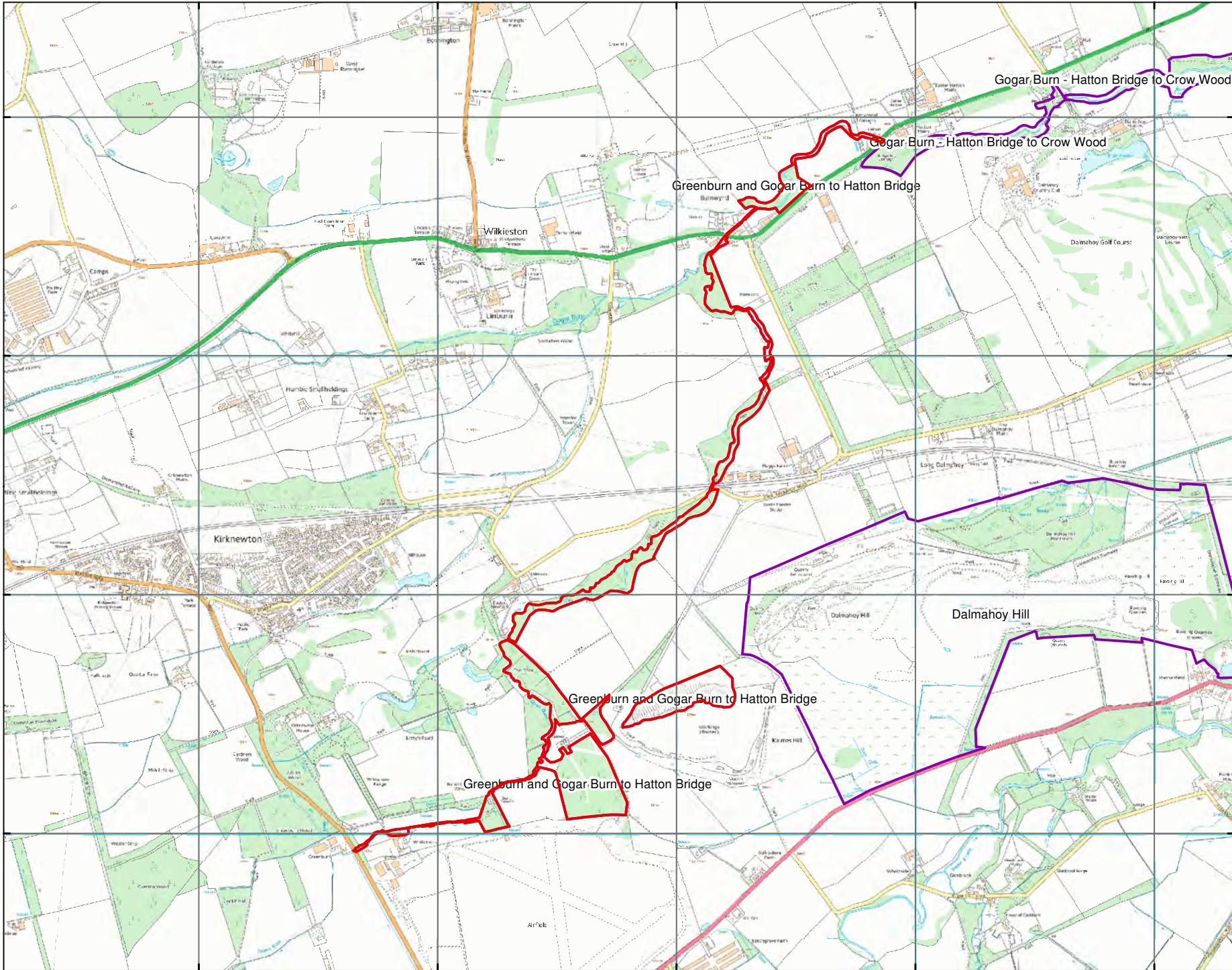
- Edinburgh LBS
- Selected LBS

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Date: 10 March 2015

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Greenburn and Gogar Burn Local Biodiversity Site

Grid reference	NT131676
Total area (ha)	21
Associated sites	Kirknewton Estate LBS, Greenburn and Gogar Burn to Hatton Bridge Edinburgh LBS.

SITE DESCRIPTION

Summary Burn and associated woodland and scrub habitats, with locally rare and Scottish Biodiversity List plants and protected mammals.

Physical description

Main habitats Broadleaved plantation, mixed plantation, semi-natural broadleaved woodland and rivers.

Notable habitats Semi-natural broadleaved woodland and swamp.

Notable species Pendulous Sedge (*Carex pendula*), Fat-hen (*Chenopodium album*), Common Cudweed (*Filago vulgaris*), Wall Lettuce (*Mycelis muralis*), Pale Persicaria (*Persicaria lapathifolia*), Wood Club-rush (*Scirpus sylvaticus*), Charlock (*Sinapis arvensis*), European Otter (*Lutra lutra*), Eurasian Badger (*Meles meles*)

Biodiversity Features 1) Ancient Woodland: 10.14 ha of ancient semi-natural woodland and 7.87 ha of long-established woodland (of plantation origin) recorded on site.
2) Badger sett: Main breeding sett and subsidiary setts recorded on site over almost a decade.

Access and Use Core path within 100m of site. Regular biological recording undertaken at site.

ASSESSMENT AND STATUS

Assessment date 3/9/2016

Current status LBS

Previous status Gogar Burn SINCS

Other status

Date: 15/08/2016

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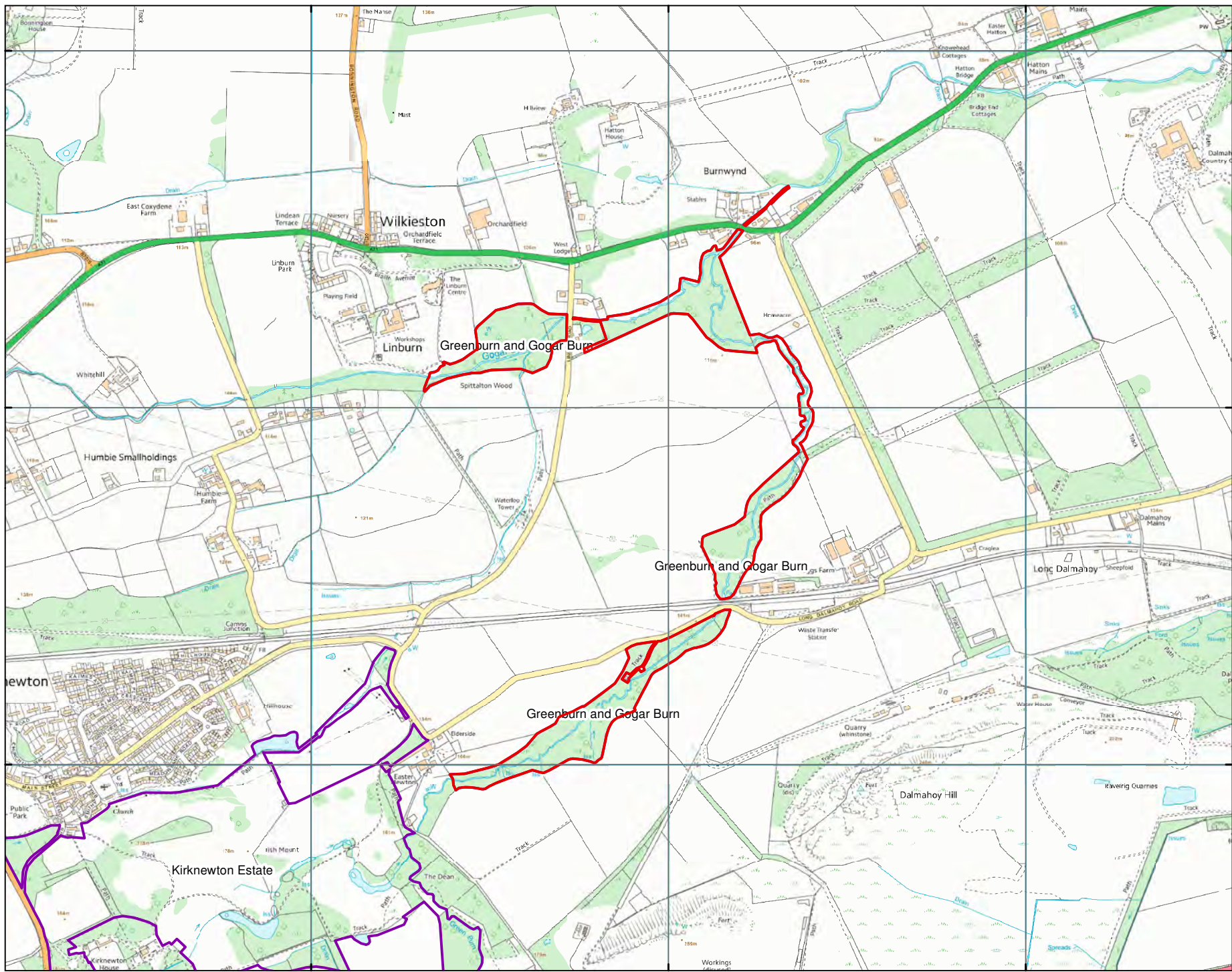
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Map:
Local Biodiversity Site Map

Local Authority:
West Lothian

Site
Greenburn and Gogar Burn

Grid Reference
NT131676

Legend

- Local Biodiversity Site
- Selected LBS



Date: 15 August 2016

TWIC
The Wildlife Information Centre

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0 1 Kilometers



Mason Evans
The Piazza
95 Morrison Street
Glasgow
G5 8BE

11th October 2018

FAO: Andrew McGuire

Invasive Weeds Survey

Dear Sir,

S2652 Hatton Mains, Edinburgh EH27 8EB

Thank you for your recent enquiry in relation to invasive/legislated weeds. The development area above has been inspected and we are pleased to provide the following report in regard to our findings and recommendations.

Site Description

The survey area is located to the south west of Edinburgh City Centre. The development comprises five separate agricultural fields used for crops with a mixture of hawthorn and mixed hedges, stone walls and fencing dividing the fields. Bounding the site to the south is the A71 with further agricultural fields to the north, east and west.

Survey Details

The survey was carried out on 5th October 2018 which is out with the growing season. At this time of year Japanese Knotweed is identified by any plant material/vegetation remaining at the time of our inspection. Plant residue such as leaf litter and dead/ dying stalks are used as an identification aid. Our survey is non-intrusive and limited by the plant growth and residue visible at the time of the inspection.

Japanese Knotweed undergoing herbicide management can be more difficult to find and identify, however, identification is still possible if plant crowns or sporadic/bonsai growth are present. We would ask that if the property owner/ manager/developer is aware of any treatment programmes; including any infestations historically treated/eradicated and under guarantee, then this information should be disclosed to KleerKut. Immature growth may be more difficult to find out with the growing season as it may be covered with leaf litter.

Our survey was non-intrusive and limited by any plant growth and residue visible at the time of the inspection.

Survey Findings – Commonly Known Species Controlled By Legislation

The commonly known plants which we record during our inspections are the following:

- **Japanese Knotweed** (*Fallopia japonica*) **No evidence**
- **Giant Hogweed** (*Heracleum mantegazzianum*) **No evidence**
- **Himalayan Balsam** (*Impatiens glandulifera*) **No evidence**

These plants are on Schedule 9 of the Wildlife & Countryside (Scotland) Act 1981. In Scotland Schedule 9 has been superseded by amendments brought in by the Wildlife and Natural Environment (Scotland) Act 2011 (WANE) where the legal presumption is now against causing the growth in the wild of any non-native species outwith their native range (exceptions and definitions apply to non-wild areas).

There was no **Japanese Knotweed** (*Fallopia japonica*), **Giant Hogweed** (*Heracleum mantegazzianum*) or **Himalayan Balsam** (*Impatiens glandulifera*) identified during this site inspection.

Site – S2652 Hatton Mains, Edinburgh
Description – Invasive Weeds Survey

Survey Findings – Other Legislated Species

In addition to the commonly known plants noted above, there are other plants controlled under Schedule 9 of the Wildlife Countryside (Scotland) Act 1981 as amended by the Wildlife and Natural Environment (Scotland) Act 2011. Our reporting of these invasive plants is based on our opinion of the impact they will have on the proposed development and the risk that they will be spread as a result of the site works as the legislation controlling them make it an offence to grow or cause the growth of them.

There were no other legislated species of concern noted during our site inspection.

Survey Findings – Problematic Non Legislated Species

In addition to the legislated plants recorded above, we also consider other non-legislated plants which could compromise/impact any development. While it is not an offence to have these plants on site there are reasons why the developer may want to consider management or treatment of them. One such plant is Horsetail.

Horsetail (*Equisetum arvense*) – Horsetail was identified during our inspection, refer to location plan and photographs.

HT1 – Sporadic to prolific Horsetail affecting a visible area of approximately 100 metres by 3 metres, was located amongst grass along the field edge.

HT2 – Situated on the western boundary edge in the centre of the field, sporadic to prolific Horsetail was found amongst grass encroaching into the crop in the field and covered a visible area of approximately 90 metres by 4 metres.

HT3 – Sporadic Horsetail was noted amongst grass under a hawthorn hedge along the field edge to the north west of the site and measured approximately 38 metres by 2 metres.

HT4 – Located amongst grass at the northern boundary and measuring approximately 45 metres by 1 metre, sporadic Horsetail was identified.

HT5 – A visible area of sporadic to prolific Horsetail affecting an area of approximately 100 metres by 20 metres was noted amongst grassland at the field edge. This infestation looks to have been treated but may be from spray the crop field.

HT6 – Along the edge of the northern boundary and measuring approximately 4 metres by 2 metres, sporadic to prolific Horsetail was found.

HT7 – Sporadic to prolific Horsetail was identified along the field edge amongst grass and was affecting a visible area of approximately 100 metres by 1 metre.

HT8 – Situated amongst grass along the field edge at the northern boundary, prolific Horsetail was found and measured approximately 40 metres by 2 metres.

HT9 – A small infestation of sporadic Horsetail was noted adjacent to HT7 and measured approximately 1 metre by 1 metre.

HT10 – Located on the north eastern boundary covering an area of approximately 26 metres by 2 metres, sporadic Horsetail was found amongst grass on the field edge.

HT11 – Sporadic Horsetail affecting a visible area of approximately 80 metres by 1 metre, was identified amongst grass at the edge of the eastern boundary.

HT12 – Situated underneath a hedge amongst grass and measuring approximately 60 metres by 1 metre, sporadic Horsetail was noted in the centre of the site.

HT13 – To the south of HT12, sporadic to prolific Horsetail was identified amongst grass and crop and measured approximately 13 metres by 2 metres.

Our walkover was limited to visual inspection and as Horsetail quickly degrades once it has died back for winter, there is often little residue remaining. There is a possibility that further infestations of Horsetail are present that were not visible at the time of our inspection.

Why Manage Horsetail?

Damage to Infrastructure - Horsetail is an aggressive perennial weed which often causes damage to roads, footways, hardstandings and drainage.

Delays to Road Adoption - Local Authorities are aware of the potential damage to footpaths and roads from horsetail. There can be difficulty obtaining road adoptions where they are aware of its presence.

Ease of Spread - Horsetail is an aggressive perennial weed that spreads quickly and vigorously, reproducing through spores and root fragments.

Difficult to Manage - Horsetail roots are fragile and may extend up to 1.8 metres depth making it difficult to 'dig out'. Where the surface vegetation has been cut away root or rhizome remaining in the soils below may re-grow in the future. Horsetail is also resilient to many herbicides requiring specialist knowledge to eradicate it.

KleerKut Recommendations

Commonly Known Species Controlled by Legislation - There was no evidence of Japanese Knotweed, Giant Hogweed or Himalayan Balsam at this development.

Other Legislated Weeds - There was no evidence of any other controlled species of concern.

Problematic Non Legislated Weeds - Horsetail was identified within this survey area. Although Horsetail is not controlled by legislation it is a highly invasive perennial weed that spreads quickly and vigorously, reproducing through spores and root fragments. As it often causes damage to roads and footways, we would recommend that some form of management/treatment is carried out to minimise the risk of future damage to roads, infrastructure and delay to road adoptions. For this reason, we would recommend that Horsetail is managed as part of the development works.

As noted, Horsetail was dying back for winter and leaves little residue, therefore there may be other infestations present that were not visible at the time of our inspection.

KleerKut Accreditation

KleerKut are a non-franchised Scottish business who have specialised in the management of invasive weeds since 2006. We have built up an enviable reputation as specialists in Japanese Knotweed by providing clear, concise and proven remediation strategies which ensure that Best Practical Environmental Options (BPEO) are achieved as recommended in the Japanese Knotweed Code of Practice.

Our knowledge and experience have enabled us to become approved consultants and contractors with many of the leading consultants, developers and construction companies throughout the UK. This was further enhanced after we were invited to join the Property Care Association (PCA). By being members of the PCA our works are Government endorsed through their Trustmark scheme. We are also able to provide our clients with insurance backed guarantees and Bondpay schemes. KleerKut are accredited members of Constructionline and SMAS Safe Systems in Procurement demonstrating our commitment to working safely in partnership with our clients and sub contractors.

Thank you for your enquiry and should you have any further queries in relation to this site or any other site, please do not hesitate to contact me at this office.

Yours faithfully



Julie McLean
For KleerKut Ltd

SURVEY PHOTOGRAPHS



Photo 1
HT1



Photo 2
HT2

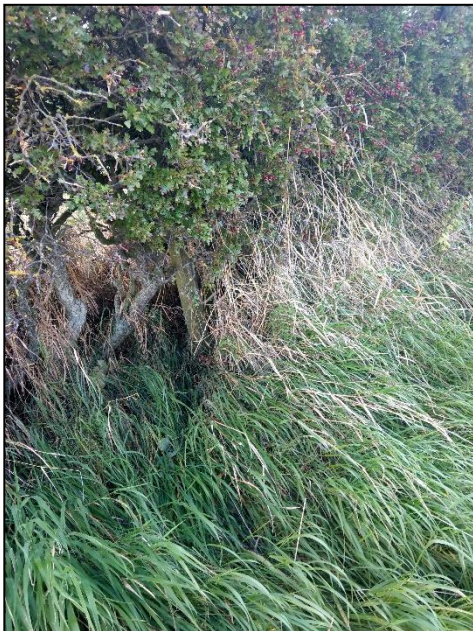


Photo 3
HT3



Photo 4
HT4

Site – S2652 Hatton Mains, Edinburgh
Description – Invasive Weeds Survey

SURVEY PHOTOGRAPHS



Photo 5
HT5



Photo 6
HT6



Photo 7
HT7



Photo 8
HT8

SURVEY PHOTOGRAPHS



Photo 9
HT9



Photo 10
HT11




Photo 11
HT12



Photo 12
HT13





Notes

 Boundary – Black or White

 Horsetail

KLEERKUT Kleerkut Limited
 Barncluth Business Centre
 Townhead Street
 Hamilton, ML3 7DP
invasive weed specialist

 0141 319 8210

 info@kleerkut.co.uk

Client: MEP

Job: S2652 Hatton Mains, Edinburgh EH27 8EB

Title: Invasive Weeds Location Plan

Date:
05/10/18

Revision:

F.A.O:
Andrew McGuire