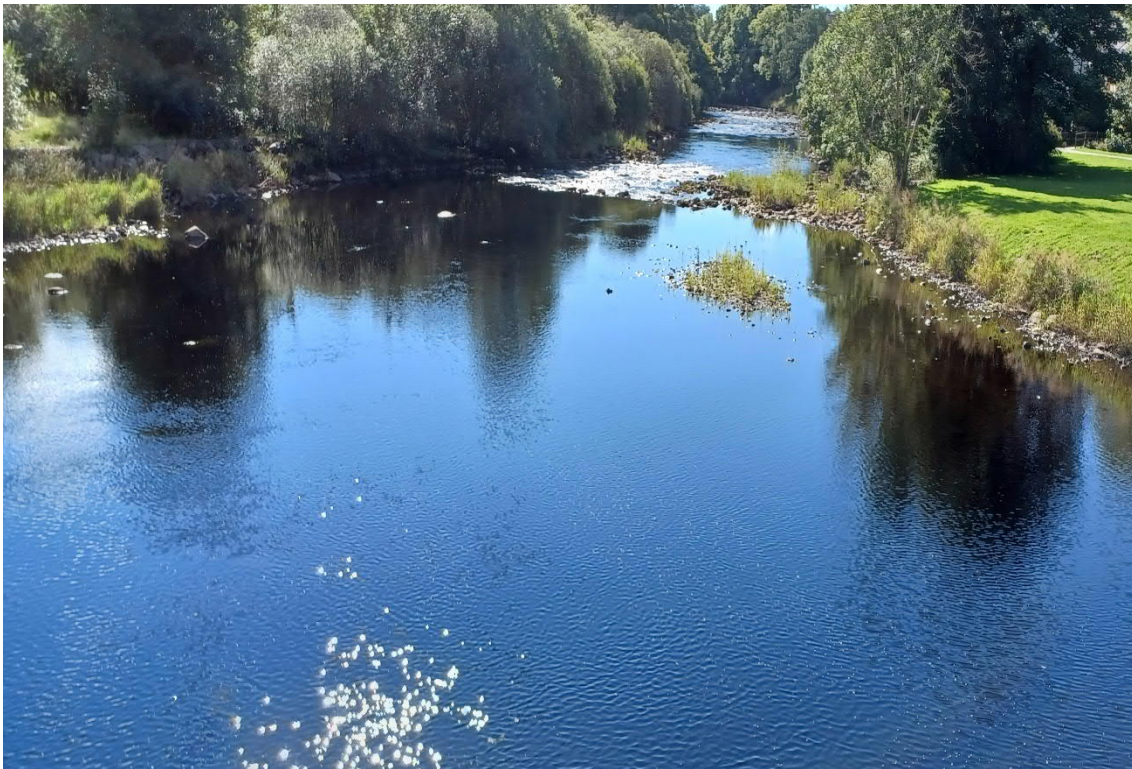


Report

Preliminary Ecological Appraisal Report Newton Stewart

Sweco UK Limited
Quay 2,
139 Fountainbridge,
Edinburgh, EH3 9QG
+44131 550 6300



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1 Non-technical Summary

This preliminary ecological appraisal report has been prepared by Sweco for Dumfries & Galloway Council, to inform the design and planning of a flood protection scheme for the town of Newton Stewart and the neighbouring village of Minnigaff. The purpose of this report is to identify and classify the habitats present, assess ecological constraints to the project and provide recommendations for any further surveys required to inform baseline conditions and any potential mitigation or licencing that may be required.

An ecological desk study, Phase 1 habitat survey and protected species scoping survey was undertaken on 1 September 2022. The preliminary ecological appraisal found that the Site has potential to support the following protected species/species groups: nesting birds, badger, bats, great crested newt, otter, water vole, red squirrel and reptiles. Additionally, the invasive species Himalayan balsam, Japanese knotweed and montbretia were recorded on the banks of the River Cree.

The following further survey work is recommended for the Site before construction starts in 2025:

- A pre-construction survey for otter no more than three months prior to the start of works.
- A pre-construction survey for badger no more than three months prior to the start of works.
- A pre-construction survey for red squirrel no more than three months prior to the start of works.
- A water vole survey between mid-April and June 2024.
- A bat emergence survey of the bridge that supports the B7079 road between May and August 2024.

The southern section of the Site overlaps the Lower River Cree Site of Special Scientific Interest which has the potential to be impacted by the proposed works. It is a **mandatory requirement** that a SSSI assent has been approved by NatureScot prior to the commencement of works.

Non-statutory sites within 2km could not be identified as the local biological records South-West Scotland Environmental Information Centre (SWSEIC) did not respond to a data request and this information is not readily available online. It is therefore **recommended** that Dumfries & Galloway council is contacted and a request is made for their non-statutory site data.

It is **recommended** that vegetation clearance and tree felling is kept to a minimum. The Scottish Government's Policy on Control of Woodland Removal [1] provides guidance on whether removal of woodland is likely to be permitted. There is a strong presumption against removal of woodland in Scotland. If design proposals include extensive felling of woodland, then consultation with the local planning authority is **recommended** to establish whether the proposed extent of removal would be permitted.

It is a **mandatory requirement** that appropriate precautions must be taken, documented and implemented through a Pollution Prevention Plan (PPP) to safeguard the River Cree and Penkiln Burn from being detrimentally impacted during the pre-construction (e.g. ground investigation works), construction and maintenance phases of the project. Best practice and guidance will be considered in the preparation of the

PPP and will include Scottish Environment Protection Agency (SEPA) Guidance for Pollution Prevention (GPPs) [2]. These measures include, but are not limited to, appropriate storage of fuels/oils, treatment of arisings and silt/pollution protection.

It is **recommended** that any clearance of vegetation should be timed to avoid the core nesting bird season (March-August inclusive). If this is not possible, these habitats can only be removed following confirmation by a suitably qualified ecologist no more than 48 hours prior to works that they are not in active use by nesting birds.

It is **recommended** that night working is avoided. Artificial lights used during construction should be directed away from waterbodies and their banks to reduce disturbance and changes to protected species behaviour.

It is a **mandatory requirement** to demonstrate that reasonable steps to avoid unlawful spread of invasive species has been taken and ensure compliance with Scottish Government's Code of Practice [2]. It is therefore **recommended** that a specialist contractor is hired to treat and remove invasive species prior to construction.

2 Introduction

2.1 Background

Sweco was commissioned by Dumfries & Galloway Council (hereafter “the Client”) to conduct a Preliminary Ecological Appraisal (PEA) to inform the design and planning of a flood protection scheme for the town of Newton Stewart and the neighbouring village of Minnigaff.

The purpose of this report is to identify and classify the habitats present, assess any ecological constraints to the project and provide recommendation for any further surveys required to inform baseline conditions as well as any mitigation or licencing requirements. This includes an assessment of whether the proposed development and associated activities will have the potential to adversely affect any designated nature conservation sites, protected or notable habitats or species.

2.2 Site Description

The proposed flood protection scheme is located in Newton Stewart and is hereafter referred to as the “Site”. The Site comprises the River Cree and Penkiln Burn with associated bankside vegetation such as grassland, tall ruderal and woodland. There are also proposed laydown areas for the works to the east and south of Newton Stewart which comprise grassland habitat. The Site is shown in **Figure 1**.

2.3 Proposed Development

Newton Stewart has been identified as a Potentially Vulnerable Area in the Solway Local Plan District - Local Flood Risk Management Plan [3]. An action for the Client is to reduce the risk of river flooding to properties in Newton Stewart from the River Cree and Penkiln Burn.

The proposed development includes:

- reprofiling of sections of the River Cree;
- installation of new flood walls;
- extension of existing flood walls;
- profiling of a flood embankment; and
- installation of erosion protection on the banks.

2.4 Scope of Surveys

In accordance with the Guidelines for Preliminary Ecological Appraisal [4] the scope of these surveys is to establish a baseline of ecological information where possible, and to ascertain whether the proposed development activities have the potential to adversely affect any designated sites, protected and/or notable habitats and/or species. To achieve this, the following were carried out:

- A desk study to obtain information on statutory sites of nature conservation interest in proximity to the Site, and records of protected and/or notable species within 2km of the Site (5km for statutory sites).
- A Phase 1 habitat survey involving a site visit to record habitat communities within the Site and its immediate surrounds. This was extended to include recording any invasive non-native species and any evidence of protected fauna or habitats capable of supporting protected fauna.
- An assessment of potential ecological constraints to the development and recommendations for further surveys and mitigation.

The zone of influence (ZOI) has been determined for each ecological feature in line with best practice survey guidance; taking into account the context of suitable habitat in relation to the Site, their sensitivity and mobility, and is described below:

- Statutory designated sites: the ZOI was considered as 5km.
- Notable species: due to the nature of the proposed works on Site and the urban nature of the Site, a search of 2km was carried out.
- Great crested newt (*Triturus cristatus*): A 500m ZOI from the Site boundary was considered sufficient, based on professional guidelines [5].
- Badger (*Meles meles*): The Site boundary was considered a sufficient ZOI given the size of the proposed works in relation to the red line boundary, based on professional guidelines [6].
- Water vole (*Arvicola amphibius*): up to 100m from the Site and 10m from the edge of the watercourses was considered a sufficient ZOI, based on professional guidelines [7] and the location and nature of the works.
- Otter (*Lutra lutra*): a 200m ZOI around any watercourse/wetland habitat was considered a sufficient ZOI, based on professional guidelines [8].
- Red squirrel (*Sciurus vulgaris*): considered at the scale of the Site and connected habitat within 2km.
- Bats: The Site boundary was considered a sufficient ZOI given the size of the proposed works in relation to the red line boundary.
- Invasive species: the Site was considered a sufficient ZOI.

3 Legislative and Policy Context

3.1 European Union (Withdrawal Agreement) Act (2020)

The European Union Withdrawal Act sets out the legislative procedure that the UK will follow until a withdrawal agreement with the European Council has been reached. In respect of protected species and Sites, the legislation as set out below remains enacted as it stands until amended.

3.2 Bern Convention (1982)

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices 1 and 2 of the Convention and regulate the exploitation of species listed in Appendix 3. The regulation imposes legal obligations on participating countries to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the EC Birds Directive (1979) and the EC Habitats Directive (1992). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

3.3 Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or 'Bonn Convention' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the Wildlife & Countryside Act 1981 (as amended), Wildlife (Northern Ireland) Order 1985, Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and the Countryside and Rights of Way Act 2000 (CRoW).

3.4 Habitats Directive

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, or the 'Habitats Directive', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In Scotland the Habitats Directive is transposed by The Conservation (Natural Habitats &c.) Regulations 1994, see below for details.

3.5 The Conservation (Natural Habitats, &c.) Regulations (1994) as amended in Scotland

The Habitats Regulations 1994 (as amended in Scotland) implement the species protection requirements of the European Directive 92/43/EEC on the conservation of natural habitats (the Habitats Directive) in Scotland on land and inshore waters (0-12 nautical miles). Following a European Court of Justice ruling against the UK Member State in 2005, there have been several amendments to the Regulations which apply only to Scotland (made in 2004, 2007, 2008(a) and 2008(b)).

This regulation makes it an offence to deliberately or recklessly disturb European Protected Species (EPS). Their places of shelter are fully protected, and it is an

offence to damage, destroy or obstruct access to or otherwise deny the animal use of a breeding Site or resting place, whether deliberate or not. It is also an offence to disturb in a manner that is likely to significantly affect the local distribution or abundance of the species; impair its ability to survive, breed or reproduce or rear its young.

3.6 Wildlife and Countryside Act (1981) and Nature Conservation (Scotland) Act (2004)

The Wildlife and Countryside Act (WCA) (1981) is the main piece of legislation pertaining to biodiversity in the UK and forms the basis for most of the other wildlife and biodiversity legislation that has come into being over recent years. In Scotland, it was updated in 2004 by the Nature Conservation (Scotland) Act. The WCA makes it an offence to intentionally:

- kill, injure, or take any wild animal or bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; and
- take or destroy an egg of any wild bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5;
- interfere with places used for shelter or protection by a wild animal;
- intentionally disturb animals occupying such places; and
- the Act also prohibits certain methods of killing, injuring, or taking wild animals.

The Nature Conservation (Scotland) Act (2004) strengthens the above legislation by including reckless acts, which means that in Scotland, not knowing about the above is not a permissible defence for committing an illegal act.

3.7 Wildlife and Natural Environment (Scotland) Act 2011

This Act has brought in new provisions governing the introduction of non-native species in Scotland. Non-native species (those plants and animals which have found their way to a new habitat through human activity) can be harmful to our environment. Some non-native species may become invasive, damaging or displacing native species.

3.8 The Protection of Badgers Act (1992)

The Protection of Badgers Act 1992 (as amended by the Nature Conservation (Scotland) Act 2004 & Wildlife and Natural Environment (Scotland) Act 2011) comprehensively protects badgers and their setts. Offences under the act include killing, injuring or taking a badger, or to damage, destroy or obstruct setts or to disturb badgers in a sett. Licences are available for specific purposes, including development, to allow some of these actions to be carried out legally.

3.9 Scottish Biodiversity List (SBL)

The Scottish Biodiversity List is a list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland. The Scottish Biodiversity List was published in 2005 to satisfy the requirement under Section C Appendix C - Legislation 2(4) of The Nature Conservation (Scotland) Act 2004.

4 Methodology

4.1 Desk Study

The desk study involved conducting database searches for statutory designated sites within 5km of the Site, and a search for non-statutory designated sites and protected and/or notable¹ flora and fauna within a 2km radius of the Site. The local records centre South-West Scotland Environmental Information Centre (SWSEIC) were approached to provide notable species and non-statutory designated sites data in the area, however, they were unable to fulfil the request. As such, records of notable species within 2km of the Site was obtained from NBN Atlas [9].

NatureScot SiteLink [10] was consulted to obtain information on nationally and/or internationally important statutory designations of relevance to the Site within 5km of the Site boundary.

Information on Ancient Woodland Inventory (AWI) and Native Woodland Survey of Scotland (NWSS) Sites within 2km of the Site was obtained from Native Woodland Survey of Scotland Data Explorer [11]. Only sites with habitat connectivity to the Site were considered further.

Online mapping tools were used to check for the presence of any bodies of standing water within 500m of the Site boundary, to inform an assessment of habitat availability and connectivity for great crested newt.

4.2 Field Survey

An extended Phase 1 habitat survey was carried out on Site on 1 September 2022 by senior ecologist Andrew Noble MSc ACIEEM and assistant ecologist Maisie Cooper BSc, both Sweco employees. The survey included the Site and its immediate surroundings, as well as bodies of standing water within 500m of the Site. Weather conditions at the time of the survey were sunny and clear, with a temperature of approximately 17°C.

A Phase 1 habitat survey is a standardised method of recording and mapping characteristic vegetation and habitat types in accordance with JNCC guidelines [12]. Phase 1 habitat types were recorded along with an indication of the plant species present, together with the structure, condition, and extent of the habitat.

The survey was extended to include an ecological constraints survey of the Site, whereby the locations of any evidence of, or habitats with potential for, protected or notable species were noted, particularly those listed under the Wildlife & Countryside Act 1981 (as amended) and including invasive, non-native species (INNS). The methods used for survey are detailed below.

4.2.1 Bats

The trees and bridges located within the Site were assessed for their bat roosting potential as per the current Bat Conservation Trust (BCT) guidelines (

¹ Notable species are those which are listed in the Scottish Biodiversity List or UK Biodiversity Action Plan as conservation priorities; or otherwise notable for their rarity at a particular geographic scale.

Table 1) [13]. Areas and broad habitats which presented opportunities to support roosting, foraging, and commuting bats were also noted.

Table 1. Bat roost suitability categories for trees and structures.

Suitability	Description
Negligible	No habitat features suitable for roosting bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.</p>
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

4.2.2 Badger

Signs of badger, including setts (defined by law as “any structure or place which displays signs indicating current use by badger”), badger paths, latrines/dung and hair found within the study area were recorded. Where they were found the number of setts/sett entrances were recorded along with details of their usage as follows:

- Active: clear of debris and vegetation, sides have worn smooth but not necessarily excavated recently.
- Partially active: not in regular use and have debris e.g. twigs and leaves in the entrance. They could be used after only a minimal amount of clearance.
- Disused/inactive: not in use for some time, partially blocked and could not be used without considerable effort.

Where setts were found they were assigned a type as defined in standard guidance [14] (**Table 2**).

Table 2. Badger sett types.

Sett Type	Description
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances.
Annexe	Normally less than 150m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active.
Subsidiary	Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently.
Outlier	Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by foxes and rabbits.

4.2.3 Otter

An otter survey was undertaken on all watercourses within 200m of the Site. The survey recorded any field signs including spraints, footprints, sign heaps and anal jelly, as well as resting sites (defined in **Table 3**) following standard guidance [15]. Otter resting sites were considered to be “confirmed” if field signs indicated current or recent use (such as spraints or prints), which indicate that otter are aware of and have at least investigated such a feature. Resting sites which could be used by otter, but at which there was no additional evidence to indicate usage were referred to as “potential” resting sites.

Table 3. Resting site type for otter

Resting Site Type	Definition
Holt	An underground resting site deep enough that the back of the cavity cannot readily be seen.
Couch	An above-ground resting site that can be used for sleeping or grooming, including temporary “nest” within vegetation.
Breeding Site	A term used to identify an area of land in which otters breed, within which a natal holt is located.
Natal Holt	A discrete holt used by females to give birth to and nurse the cubs.

4.2.4 Water Vole

Following standard practice for water vole survey methods [16], the survey comprised searching for field signs including burrows, runs, tracks, feeding stations, droppings and latrines 50m upstream and downstream of the Site.

4.2.4.1 *Water Vole Habitat Suitability Assessment*

The suitability of habitat to support viable water vole populations was assessed using the Water Vole Habitat Suitability Index method [17]. Watercourses were assessed based on particular features important to the establishment and maintenance of viable water vole populations, these are:

- Well-developed (>60%) bankside and emergent vegetation to provide cover.
- Year-round availability of food sources.
- Suitable refuge areas above extremes in water levels.
- Steep banks suitable for burrowing.

- Permanent open water.
- Presence of berm (ledge at water level).
- Lack of disturbance through poaching, grazing and/or recent management.
- Nest building opportunities in vegetation above water level.

These features are awarded a score of '1' if present and '0' if absent. The habitat suitability is then scored as follows: <3: Unsuitable, 3-5: Sub-optimal, >5 Optimal.

4.2.5 Red Squirrel

The Site was assessed for its suitability to support red squirrel (*Sciurus vulgaris*), including noting the composition of woodland and connectivity to habitat in the wider landscape. Signs of squirrel (*Sciurus* sp.), such as feeding remains and dreys were searched for during the survey. Any incidental sightings of red squirrels were recorded.

4.2.6 Great Crested Newt (GCN)

A Habitat Suitability Index (HSI) assessment was undertaken on all waterbodies located within 500m of the Site that were accessible through public footpaths. These were assessed for their suitability to support GCN following relevant guidance [18]. The HSI can be used to assess the suitability of a pond for GCN, based on a number of factors including: size, water quality, permanence, shading, presence of fish, the number of nearby ponds and macrophyte cover. A score between 0 and 1 is given; where 0 represents poor suitability and 1 represent excellent suitability. The suitability of the terrestrial habitat within the Site and the surrounding area, and the connectivity between ponds was also assessed.

4.2.7 Reptiles

The Site was assessed for its suitability to support reptile populations in accordance with published guidance on reptile habitat preferences [19] which include:

- south-facing aspect;
- varied vegetation structure with minimal anthropogenic disturbance;
- the availability of dry areas in which reptiles can hibernate and/or bask; and
- the presence of structures such as dry-stone walls, grass tussocks, rubble piles, fence posts, and felled logs which provide potential basking and hibernation opportunities.

4.2.8 Invasive Species

Any invasive species present on Site were noted during the Phase 1 habitat survey.

The optimal field survey period for invasive species extends approximately from April to October, depending on the part of the country. Therefore, September is an appropriate month to survey.

4.3 **Survey Limitations**

It was not possible to obtain data regarding non statutory designated sites within 2km of the Site as there was no response from SWSEIC despite repeated attempts at contact.

The fields to the east and south of Newton Stewart, which may be used as laydown areas for the proposed works, could not be accessed at the time of survey (Figure 2) and has been accounted for in the recommendation for further surveys.

5 Results - Desk Study

5.1 Statutory Designated Sites

Five statutory designated sites are located within 5km of the Site. These are described in Table 4.

Table 4. Statutory designated Sites within 5km of the Site.

Site Name	Distance and Direction from Site*	Description/reason for Designation
Lower River Cree SSSI	On Site	This is the only known spawning site of sparring, otherwise known as smelt (<i>Osmerus eperlanus</i>), in Scotland. The fish migrate from the estuary into freshwater in the spring to spawn, aiming for the rocky and gravel areas around the upper limit of tidal influence.
Wigtown Bay LNR	3km southeast	The site supports otters and notable bird species: pinkfoot goose (<i>Anser brachyrhynchus</i>), greylag goose (<i>Anser anser</i>), barnacle goose (<i>Branta leucopsis</i>), pintail (<i>Anas acuta</i>), shoveler (<i>Spatula clypeata</i>), wigeon (<i>Mareca Penelope</i>), curlew (<i>Numenius arquata</i>) and oystercatcher (<i>Haematopus ostralegus</i>).
Galloway Oakwoods SAC	4km northwest	The site has been designated for its old sessile oak (<i>Quercus petraea</i>) woods.
Wood of Cree SSSI	4km northwest	The site is the largest and most important example of ancient coppice woodland in the area. The range of vegetation types included in the site vary from acid oak (<i>Quercus robur</i>) woodland on the upper slopes through base-rich hazel (<i>Corylus avellana</i>) stands on the lower slopes to willow carr and floodplain mire adjacent to the River Cree.
Cree Estuary SSSI	4.1km southeast	The Cree Estuary is one of the most extensive and continuous stretches of saltmarsh and mudflats in Galloway. The mudflats, rich in invertebrates, and the closely-grazed merse provide feeding areas for a large number of birds including an internationally important population of pink-footed goose. The site supports the nationally rare fish the smelt. The site also supports wintering bird populations of national importance, including pintail, oystercatcher, whooper swan (<i>Cygnus cygnus</i>) and golden plover (<i>Pluvialis apricaria</i>)

*Distance and direction given from the closest area of the Site

5.2 Ancient Woodland and Native Woodland Survey of Scotland Sites

There are several parcels of ancient woodland within 2km of the Site. The closest parcel is Gill Wood which is located 70m to the northwest of the Site.

There are multiple NWSS Sites within 2km of the Site, four parcels are located within the Site boundary.

5.3 Protected and Notable Species

5.3.1 Flora and Fungi

Listed below in **Table 5** are notable plant species recorded within 2km of the Site. These include those listed on Schedule 8 of the Wildlife and Countryside Act (WCA-Sch 8), Scottish Biodiversity List (SBL) and the Vascular Plant Red Data List for Great Britain Near Threatened (NT) [20].

Table 5. Results of the database search for notable flora records within 2km of Site

Common Name	Scientific Name	Designations
Black-bindweed	<i>Fallopia convolvulus</i>	SBL
Bluebell	<i>Hyacinthoides non-scripta</i>	WCA-Sch 8

5.3.2 Birds

Listed below in **Table 6** are notable bird species recorded within 2km of the Site. These include bird species listed on Schedule 1 of the Wildlife and Countryside Act (WCA-Sch 1), Scottish Biodiversity List (SBL) Priority Species and/or Dumfries & Galloway Local Biodiversity Action Plan (DAGLBAP) Priority Species [21] and those with a conservation status currently listed as red² or amber³ by the 5th review of Birds of Conservation Concern (BoCC) [22].

Table 6. Results of the database search for bird species records within 2km of Site

Common Name	Scientific Name	Designations
Lesser redpoll	<i>Acanthis cabaret</i>	Red BoCC
Common redpoll	<i>Acanthis flammea</i>	Amber BoCC
Goshawk	<i>Accipiter gentilis</i>	WCA-Sch 1
Sparrowhawk	<i>Accipiter nisus</i>	Amber BoCC
Skylark	<i>Alauda arvensis</i>	Red BoCC, SBL, DAGLBAP
Kingfisher	<i>Alcedo atthis</i>	Amber BoCC, Sch 1, SBL, DAGLBAP
Teal	<i>Anas crecca</i>	Amber BoCC
Mallard	<i>Anas platyrhynchos</i>	Amber BoCC
Greylag goose	<i>Anser anser</i>	Amber BoCC
Pink-footed goose	<i>Anser brachyrhynchus</i>	Amber BoCC
Meadow pipit	<i>Anthus pratensis</i>	Amber BoCC
Tree pipit	<i>Anthus trivialis</i>	Red BoCC, SBL

² Red is the highest conservation priority with species requiring urgent action and includes globally threatened species and species that have experienced a severe historical decline. A summary of relevant factors can be accessed via the RSPB website: <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/uk-conservation-status-explained/>

³ Amber is the next most critical group after red and includes species which have suffered a moderate decline. A summary of relevant factors can be accessed via the RSPB website: <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/uk-conservation-status-explained/>

Common Name	Scientific Name	Designations
Swift	<i>Apus apus</i>	Red BoCC, SBL, DAGLBAP
Short-eared owl	<i>Asio flammeus</i>	Amber BoCC, SBL, DAGLBAP
Barnacle goose	<i>Branta leucopsis</i>	WCA-Sch 1, DAGLBAP,
Dunlin	<i>Calidris alpina</i>	SBL, DAGLBAP
Nightjar	<i>Caprimulgus europaeus</i>	SBL, DAGLBAP
Greenfinch	<i>Chloris chloris</i>	Red BoCC
Black-headed gull	<i>Chroicocephalus ridibundus</i>	Amber BoCC
Dipper	<i>Cinclus cinclus</i>	Amber BoCC
Hen harrier	<i>Circus cyaneus</i>	WCA-Sch 1, SBL, Red BoCC, DAGLBAP
Stock dove	<i>Columba oenas</i>	Amber BoCC
Woodpigeon	<i>Columba palumbus</i>	Amber BoCC
Rook	<i>Corvus frugilegus</i>	Amber BoCC
Cuckoo	<i>Cuculus canorus</i>	SBL, Red BoCC
Whitethroat	<i>Curruca communis</i>	Amber BoCC
Whooper swan	<i>Cygnus cygnus</i>	WCA-Sch 1, SBL, Amber BoCC, DAGLBAP,
Mute Swan	<i>Cygnus olor</i>	Amber BoCC
House martin	<i>Delichon urbicum</i>	Red BoCC
Yellowhammer	<i>Emberiza citrinella</i>	Red BoCC, SBL, DAGLBAP
Reed bunting	<i>Emberiza schoeniclus</i>	Amber BoCC, SBL, DAGLBAP
Merlin	<i>Falco columbarius</i>	WCA-Sch 1, SBL, Red BoCC, DAGLBAP
Peregrine falcon	<i>Falco peregrinus</i>	WCA-Sch 1, SBL, DAGLBAP
Kestrel	<i>Falco tinnunculus</i>	Amber BoCC, SBL, DAGLBAP
Pied flycatcher	<i>Ficedula hypoleuca</i>	Amber BoCC
Moorhen	<i>Gallinula chloropus</i>	Amber BoCC
Snipe	<i>Gallinago gallinago</i>	Amber BoCC
Herring gull	<i>Larus argentatus</i>	Red BoCC, SBL, DAGLBAP
Lesser black-backed gull	<i>Larus fuscus</i>	Amber BoCC
Great black-backed gull	<i>Larus marinus</i>	Amber BoCC
Linnet	<i>Linaria cannabina</i>	Red BoCC, DAGLBAP
Crossbill	<i>Loxia curvirostra</i>	WCA-Sch 1
Wigeon	<i>Mareca penelope</i>	Amber BoCC
Grey wagtail	<i>Motacilla cinerea</i>	Amber BoCC
Spotted flycatcher	<i>Muscicapa striata</i>	Red BoCC, SBL, DAGLBAP
Wheatear	<i>Oenanthe oenanthe</i>	Amber BoCC
House sparrow	<i>Passer domesticus</i>	SBL, Red BoCC, DAGLBAP
Redstart	<i>Phoenicurus phoenicurus</i>	Amber BoCC
Wood warbler	<i>Phylloscopus sibilatrix</i>	SBL, Red BoCC, DAGLBAP
Willow warbler	<i>Phylloscopus trochilus</i>	Amber BoCC

Common Name	Scientific Name	Designations
Dunnock	<i>Prunella modularis</i>	Amber BoCC
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber BoCC, SBL, DAGLBAP
Whinchat	<i>Saxicola rubetra</i>	Red BoCC
Woodcock	<i>Scolopax rusticola</i>	Red BoCC, SBL, DAGLBAP
Siskin	<i>Spinus spinus</i>	DAGLBAP
Tawny owl	<i>Strix aluco</i>	Amber BoCC
Starling	<i>Sturnus vulgaris</i>	Red BoCC, SBL, DAGLBAP
Redshank	<i>Tringa totanus</i>	Amber BoCC
Wren	<i>Troglodytes troglodytes</i>	Amber BoCC
Redwing	<i>Turdus iliacus</i>	WCA-Sch 1, SBL, Amber BoCC
Song thrush	<i>Turdus philomelos</i>	Amber BoCC, SBL, DAGLBAP
Fieldfare	<i>Turdus pilaris</i>	WCA-Sch 1, Red BoCC
Barn owl	<i>Tyto alba</i>	WCA-Sch 1, SBL, DAGLBAP
Lapwing	<i>Vanellus vanellus</i>	Red BoCC, SBL, DAGLBAP

5.3.3 Bats

Listed below in **Table 7** are bat species recorded within 2km of the Site. All species of bats are listed under The Conservation (Natural Habitats, &c.) Regulations (1994) as amended in Scotland, Schedule 5 of the Wildlife and Countryside Act (WCA-Sch 5), Scottish Biodiversity List (SBL) and the Dumfries & Galloway Local Biodiversity Action Plan (DAGLBAP).

Table 7. Results of the database search for bat species records within 2km of Site

Common Name	Scientific Name	Designations
Brown long-eared bat	<i>Plecotus auritus</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Daubenton's bat	<i>Myotis daubentonii</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Natterer's bat	<i>Myotis nattereri</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Noctule bat	<i>Nyctalus noctula</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	EPS, WCA-Sch5, SBL and DAGLBAP
Whiskered bat	<i>Myotis mystacinus</i>	EPS, WCA-Sch5, SBL and DAGLBAP

5.3.4 Badger

Seven badger records were returned in the data search. The closest badger record appears to be 0.9km to the southwest of the Site however, the grid reference provided is only accurate to 1km, therefore, the badger record may be closer or further from the Site.

5.3.5 Red and Grey Squirrel

There were records for both red squirrel and grey squirrel (*Sciurus carolinensis*) returned from the data search.

- 5.3.6 Amphibians including Great Crested Newt
There were no records of great crested newt returned from the data search. There were records of common toad (*Bufo bufo*) returned.
- 5.3.7 Reptiles
There were no records of reptiles returned from the data search.
- 5.3.8 Otter
There were no records of otter returned from the data search.
- 5.3.9 Water vole
There was a single record of water vole returned from the data search located on Site, however, the grid reference provided is only accurate to 1km, therefore, the record may be located outside of the Site and up to 1km away.
- 5.3.10 Other notable species
There were records returned for hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*) from the data search, located within 2km of the Site.
- 5.3.11 Invasive Non-Native Species (INNS)
Records of INNS within 2km of the Site include those listed below in **Table 8**.

Table 8. Results of the database search for INNS within 2km of Site

Common Name	Scientific Name	Designations
Japanese knotweed	<i>Fallopia japonica</i>	WCA-Sch 9
Himalayan balsam	<i>Impatiens glandulifera</i>	WCA-Sch 9

6 Results - Field Survey

6.1 Habitats

The following habitat types are present on and in the immediate surroundings of the Site:

- Broadleaved semi-natural woodland – A1.1.1
- Broadleaved plantation woodland – A1.1.2
- Mixed semi-natural woodland – A1.3.1
- Scrub dense/continuous – A2.1
- Broadleaved parkland/scattered trees – A3.1
- Mixed parkland/scattered trees – A3.3
- Improved grassland – B4
- Poor semi-improved grassland – B6
- Bracken – C1
- Tall ruderal – C3.1
- Running water – G2
- Amenity grassland – J1.2
- Intact species-poor hedge – J1.2.2
- Buildings – J3.6
- Hardstanding – J5

A Phase 1 habitat map is provided in **Figure 2**.

6.1.1 Broadleaved Semi-natural Woodland – A1.1.1

A large block of broadleaved semi-natural woodland is located to the east of the River Cree close to the A75 bridge with a second block located south of the B7079 bridge on the banks of the River Cree. Species present in the canopy include common oak, sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), beech (*Fagus grandifolia*) and pussy willow (*Salix discolor*); with hazel, silver birch (*Betula pendula*), holly (*Ilex aquifolium*), elm (*Ulmus procera*), elder (*Sambucus nigra*) and ivy (*Hedera helix*) present surrounding within the understory.

6.1.2 Mixed Semi-natural Woodland – A1.3.1

A block of mixed semi-natural woodland is located between the River Cree and Penkiln Burn in the north of the Site with two smaller blocks located on the western bank of the River Cree. Species recorded in the canopy include oak, willow, ash, alder (*Alnus glutinosa*), leylandii (*Cupressus x leylandii*) and sycamore with the understory comprising cherry laurel (*Prunus laurocerasus*), beech, hawthorn (*Crataegus monogyna*), juniper (*Juniperus communis*), rowan (*Sorbus aucuparia*) and elder with ivy, dog's mercury (*Mercurialis perennis*) and rosebay willowherb (*Chamaenerion angustifolium*) present in the ground flora.

6.1.3 Broadleaved Plantation Woodland – A1.1.2

This habitat is present on the highway embankment adjacent to the A75 in the south of the Site. Species present include ash, hazel and sycamore.

6.1.4 Scrub dense/continuous – A2.1

Dense scrub is present on the banks of the River Cree and on the highway embankment of the A75. The habitat is dominated by bramble (*Rubus fruticosus*), pussy willow and hawthorn; with sycamore, gorse (*Ulex europaeus*), snowberry (*Symphoricarpos albus*), tutsan (*Hypericum androsaemum*) and Japanese knotweed recorded.

- 6.1.5 Scattered Broadleaved Trees – A3.1
Scattered trees are present along the banks of the River Cree and within areas of amenity grassland. Species present include sycamore, beech, ash, rowan, Norway maple (*Acer platanoides*), poplar (*Populus sp.*) and wild cherry (*Prunus avium*).
- 6.1.6 Mixed parkland/scattered trees – A3.3
A line of mixed parkland trees dominated by leylandii and sycamore is present on the boundary of a residential property in the north of the Site adjacent to the Penkiln Burn bridge crossing. There are also small areas of mixed scattered trees on the banks of the River Cree with leylandii and wild cherry recorded.
- 6.1.7 Improved Grassland – B4
Improved grassland fields are present to the east of the River Cree in the proposed laydown area. The grassland in these fields are maintained at a short sward by grazing cattle. Small areas of improved grassland are present on the banks of the River Cree. Species present include tall oatgrass (*Arrhenatherum elatius*), perennial ryegrass (*Lolium perenne*), hedge bindweed (*Calystegia sepium*), ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), broad-leaved dock (*Rumex obtusifolius*) and dandelion (*Taraxacum officinale*).
- 6.1.8 Poor Semi-improved Grassland – B6
Poor semi-improved grassland is present on both sides of the River Cree in the proposed laydown area east and the field to the south of the A75. The grassland is maintained at a short sward by grazing cattle. Small areas of improved grassland are present on the banks of the River Cree. Species present include Yorkshire fog (*Holcus lanatus*), tall oatgrass, meadow grass (*Poa sp.*), common knapweed (*Centaurea nigra*), silverweed (*Argentina anserina*), meadow buttercup (*Ranunculus acris*), yarrow (*Achillea millefolium*), white clover (*Trifolium repens*) dandelion, creeping buttercup and broad-leaved dock.
- 6.1.9 Bracken – C1
Bracken is present on the banks of the River Cree.
- 6.1.10 Tall ruderal – C3.1
Tall ruderal vegetation is present on the banks of the River Cree in marginal areas beside the riverbank. Species present in these areas include creeping thistle (*Cirsium arvense*), meadowsweet (*Filipendula ulmaria*) rosebay willowherb, American willowherb (*Epilobium ciliatum*), nettle (*Urtica dioica*), ragwort (*Jacobaea vulgaris*), hedge bindweed, buddleia (*Buddleja sp.*) and Japanese knotweed.
- 6.1.11 Running Water – G2
The River Cree flows through the Site from the northern to the southern boundary. The river comprises a 20-35m wide watercourse with a fast rippled flow. The depth of the river varies from 30cm to over 1m with a rocky bed. There were no aquatic plants noted within the river. The banks of the river comprise a mix of earthen banks in the natural areas, stone walls close to the urban development and gabions which provide erosion protection to the bridges. The banks vary between 30 and 90 degrees with the bankside habitats comprising grassland, tall ruderal, woodland and scrub.

There is an offshoot of the River Cree to the south of the Site which is 5-10m wide and appears to have a fast rippled flow. The watercourse appears to be shallow with a rocky bed. There were no aquatic plants noted within the river. The banks are steep and earthen with the bankside habitats comprising a mosaic of scrub, tall ruderal and grassland which leads into woodland on both sides further from the river.

Penkiln Burn is a tributary of the River Cree and joins the river on Site. The burn comprises a 15m wide watercourse with a fast rippled flow. The burn is approximately 30cm deep and has a rocky bed. There were no aquatic plants noted within the burn. The burn has steep 90-degree banks and appeared to be a mix of earthen and stone. There are bankside broadleaved trees on both banks of the burn.

6.1.12 Amenity Grassland – J1.2

There are small areas of amenity grassland throughout the Site in public areas which are maintained to a short sward and dominated by perennial rye grass.

6.1.13 Intact Species-poor Hedge – J2.1

Two species poor hedgerows were located within the red line boundary to the east of the Site bordering the improved grassland and poor semi-improved grassland fields. The hedgerows were dominated by hawthorn.

6.1.14 Buildings – J3.6

There are residential and commercial buildings within the Site. They are not expected to be impacted by the proposed works.

6.1.15 Hard Standing – J5

There are footpaths on both sides of the River Cree along with the roads throughout the Site.

6.2 Protected and Notable Species and Habitats

6.2.1 Flora

No notable/protected species of native flora were recorded during the survey.

6.2.2 Birds

The Site contains woodland, scrub, grassland and tall ruderal habitat that is suitable foraging and nesting habitat for a variety of birds.

6.2.3 Bats

Trees and structures within the Site were assessed for their suitability for roosting bats. Preliminary roost assessments were undertaken on four bridges, two individual trees and four groups of trees with these detailed in **Table 9** and their locations shown in Figure 3.

Table 9. Results of Preliminary Roost Assessment

Tree/ Bridge ref.	Description	Roost suitability
Bat 1	A metal bridge that crosses the River Cree. The bridge is attached to the banks with concrete. There were no features suitable for roosting bats.	Negligible
Bat 2	A stone bridge that allows the B7079 to cross the River Cree. The bridge appears to have been recently repointed. The underside of the bridge could not be surveyed and there is therefore potential for suitable roosting features to be located underneath.	Low

Tree/ Bridge ref.	Description	Roost suitability
Bat 3	A concrete bridge that was constructed in 2019. There were no features suitable for roosting bats.	Negligible
Bat 4	A concrete and metal bridge that allows the A75 to cross the River Cree. The bridge appears to be in excellent condition with all joints sealed. There were no features suitable for roosting bats.	Negligible
Bat 5	A partially dead ash tree approximately 10m tall with a dense cover of ivy. The ash is multi stemmed with the eastern stem has tearouts at 4, 6 and 8m high.	Moderate
Bat 6	A mature oak approximately 20m tall with a dense cover of ivy. The tree has a tearout on the main limb approximately 7m high on the northeast aspect.	Moderate
Group 1	A small section of mixed semi-natural woodland with semi-mature trees. The trees are covered with dense ivy which may disguise roosting features.	Low
Group 2	A small section of mixed semi-natural woodland with semi-mature trees. The trees are covered with dense ivy which may disguise roosting features.	Low
Group 3	A small number of mature sycamore and poplar trees with a dense cover of ivy which may disguise roosting features.	Low
Group 4	A line of semi-mature trees with a dense ivy cover which may disguise roosting features.	Low



Photo 1. Bat 1



Photo 2. Bat 2



Photo 3. Bat 3



Photo 4. Bat 4



Photo 5. Bat 5

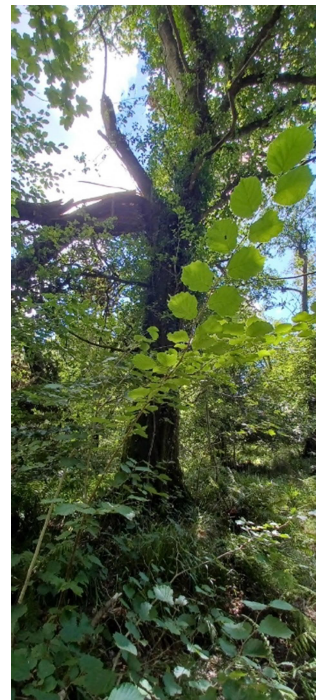


Photo 6. Bat 6

The woodland, grassland, scrub and riparian habitats on Site along with the watercourses the River Cree and Penkiln Burn all provide high potential foraging habitat for bats.

6.2.4 Badger

No setts or signs of badger were identified within the Site. The grassland, woodland, scrub and hedgerow habitats are suitable for this species. The proposed laydown area could not be surveyed due to access issues.

6.2.5 Otter

There were no otter field signs noted during the survey. The River Cree provides suitable habitat for foraging and commuting otter. The areas of broadleaved semi-natural woodland to the southeast of the B7079 bridge and to the northeast of the A75

bridge have the potential to provide suitable habitat for holt creation, however, the woodlands could not be surveyed due to access issues.

6.2.6 Water Vole

There was no evidence of water vole found during the survey. The watercourses were assessed for their suitability to support water vole and the results are provided below.

The sections of the River Cree surveyed (**Table 10**) provide optimal, sub-optimal or unsuitable habitat for water vole.

The section of river found to be suitable for water voles (Section 7) is the offshoot of the river which has well developed vegetated steep banks comprising tall ruderal, scrub and grassland, which will provide good foraging and burrow creation habitat.

Table 10. River Cree water vole habitat suitability assessment

Habitat Suitability Feature	Habitat Suitability Score						
	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7
Well-developed (>60%) bankside and emergent vegetation to provide cover	0	1	0	0	0	1	1
Year-round availability of food sources	0	1	1	0	0	1	1
Suitable refuge areas above extremes in water levels	1	1	1	1	0	1	1
Steep banks suitable for burrowing	1	0	0	0	0	1	1
Permanent open water	1	1	1	1	1	1	1
Presence of berm (Ledge at water level)	1	0	1	0	0	0	0
Lack of disturbance through poaching, grazing and/or recent management	0	0	0	0	0	0	1
Nest building opportunities in vegetation above water level	0	0	0	0	0	0	0
Total	4	4	4	2	1	5	6

The section of Penkilm Burn surveyed (**Table 11**) provides sub-optimal habitat for water vole due to the shallow vegetated banks which would not provide adequate food sources for water voles year-round.

Table 11. Penkiln Burn water vole habitat suitability assessment

Habitat Suitability Feature	Habitat Suitability Score
	Section 1
Well-developed (>60%) bankside and emergent vegetation to provide cover	1
Year-round availability of food sources	0
Suitable refuge areas above extremes in water levels	1
Steep banks suitable for burrowing	0
Permanent open water	1
Presence of berm (Ledge at water level)	1
Lack of disturbance through poaching, grazing and/or recent management	1
Nest building opportunities in vegetation above water level	0
Total	5

6.2.7 Red Squirrel

No signs of this species were noted during the survey. The woodland habitat on and around the Site is suitable for red squirrel and there were records of this species returned during the desk study.

6.2.8 Reptiles

There is suitable habitat for reptiles present on Site within the woodland, grassland, scrub and tall ruderal vegetation.

6.2.9 Amphibians including Great Crested Newt

There were two bodies of standing water within 500m of the Site which were identified and assessed for their suitability to support GCN. The waterbodies were assessed using HSI with the results shown in **Table 12** below.

Table 12. Great crested newt HSI assessment results

	Ditch 1	Ditch 2
OS Grid Reference	NX 40940 66400	NX 41580 64780
Geographic Location	0.5	0.5
Pond Area	0.5	0.3
Permanence	0.9	0.9
Water quality	0.67	0.01

	Ditch 1	Ditch 2
Shade	1	0.4
Waterfowl	0.67	1
Fish	0.67	1
Pond count	0.31	0.01
Terrestrial habitat	0.67	1
Macrophytes	0.9	0.3
Score	0.65 - Average	0.26 – Poor

Ditch 1 is located 450m from the closest proposed works which will be the installation of a flood embankment. The habitat between the ditch and the proposed works is hardstanding and is therefore unsuitable for GCN. The ditch has therefore been scoped out from further surveys.

Ditch 2 is located 250m from the closest proposed works which will be a laydown area. The pond is of poor suitability to support GCN and therefore has been scoped out from further surveys.

The woodland, tall ruderal, scrub and grassland on Site is considered suitable habitat for more common species of amphibian.

6.2.10 Invasive Non-Native Species

Invasive non-native species that were identified on Site are listed in **Table 13**. They are mapped on **Figure 3**. Other non-native species such as sycamore were identified on Site, however only those that are considered invasive are listed here.

Table 13. INNS recorded during site visit.

Common Name	Latin Name
Buddleia	<i>Buddleja davidii</i>
Cotoneaster	<i>Cotoneaster horizontalis</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Japanese knotweed	<i>Fallopia japonica</i>
Montbretia	<i>Crocsmia x crocosmiiflora</i>
Rhododendron	<i>Rhododendron ponticum</i>
Snowberry	<i>Symphoricarpos albus</i>

7 Implications, Requirements and Recommendations

Listed below are recommendations which must be followed to comply with legal requirements; or which should be followed to minimise adverse ecological impacts to notable habitats and/or species. The recommendations for additional surveys are also outlined.

7.1 Statutory Designated Sites

The closest statutory site is Lower Cree SSSI located in the south of the Site. The proposed works involve the re-profiling of the River Cree channel to limit the impacts of erosion, which may involve in-river works within the SSSI.

To minimise the impact of the proposed works there will seasonal restrictions on the construction and an earthworks programme to ensure that spawning within the River Cree are not affected during the spawning period (typically November – May) or migration periods. There will be appropriate mitigation and working practices implemented to ensure there is no silting of the water and ongoing consultation with SEPA, NatureScot and the local fisheries board will be required.

Given that the statutory site has the potential to be negatively impacted by the proposed works it is a **mandatory requirement** that a SSSI assent has been approved by NatureScot prior to the commencement of works.

It is a **mandatory requirement** that appropriate precautions must be taken, documented and implemented through a Pollution Prevention Plan (PPP) to safeguard the River Cree and Penkiln Burn from being detrimentally impacted during the pre-construction (e.g. ground investigation works), construction and maintenance phases of the project. Best practice and guidance will be considered in the preparation of the PPP and will include SEPA's Guidance for Pollution Prevention (GPPs) [2]. These measures include but are not limited to appropriate storage of fuels/oils, treatment of arisings and silt/pollution protection.

7.2 Non-Statutory Designated Sites, Ancient Woodland and NWSS Sites

Non-statutory sites within 2km could not be identified as the local biological records South-West Scotland Environmental Information Centre (SWSEIC) did not respond to a data request and this information is not readily available online. It is therefore **recommended** that Dumfries & Galloway council is contacted and a request is made for their non-statutory site data.

Due to the presence of NWSS sites within the Site boundary it is **recommended** that vegetation clearance and tree felling is kept to a minimum. The Scottish Government's Policy on Control of Woodland Removal [1] provides guidance on whether removal of woodland is likely to be permitted. There is a strong presumption against removal of woodland in Scotland. If design proposals include felling of woodland, then consultation with the local planning authority is **recommended** to establish whether the proposed extent of removal would be permitted.

7.3 Protected and Notable Species and Habitats

7.3.1 Birds

All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). Suitable habitat for whooper swan and kingfisher was recorded on site both of which are afforded additional protection under Schedule 1 of the Act.

The Site and surrounding study area are suitable for a variety of nesting birds. It is a **mandatory requirement** that nesting birds (or their nests or eggs), including ground and bank nesting birds and waterfowl, would not be killed or injured or their active nests destroyed as a result of activities on Site.

It is **recommended** that clearance of vegetation that is suitable for nesting birds is undertaken outside the core nesting bird season (March to August inclusive) and if the works programme cannot be amended to facilitate this, that a pre-works check for nesting birds be undertaken by suitably qualified ecologist no more than 48 hours prior to works. If active nests were found, there would be no other option but to delay works until chicks have fledged which could be a period of up to ten weeks.

7.3.2 Bats

All bat species found in Scotland are classed as European protected species. They receive full protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

The two trees on Site (Bat 5 and 6) identified with moderate roost potential for bats and four groups of trees identified as having low roost potential are not expected to be impacted by the proposed works.

If the scope of the proposed works change, and the two moderate trees are to be impacted it is **recommended** that both trees are subject to a tree climbing survey using an endoscope to confirm their roost suitability. If it is found that the features have lower roost suitability than was estimated from ground level, this could avoid emergence/re-entry surveys. Any trees found to still have moderate (or higher) potential to support roosting bats will then be subject to at least one dusk emergence or pre-dawn re-entry survey between May and August in line with Bat Conservation Trust best practice guidance [13]. If a roost was identified in a moderate potential feature, a further survey would be required to characterise the roost. For trees with low roost potential, no further survey is required, however, if they will be affected by the works (such as they are due to be pruned or felled) this work should be carried out as “soft felling/pruning” under supervision by a licensed bat worker as a precaution. If impacts to a roost could not be avoided, a licence application to NatureScot, as well as mitigation and a species protection plan, would be required to permit the impact to the tree/roost.

It is **recommended** that an emergence or re-entry survey is undertaken on the bridge identified as having low potential (Bat 2). The survey would need to be carried out during May-August in line with Bat Conservation Trust best practice guidance. If a roost is identified, additional surveys will be required to characterise the roost. If impacts to a roost cannot be avoided, a licence application to NatureScot, as well as mitigation and a species protection plan, would be required to permit the impact to the roost.

Bats are likely to use the Site for foraging and commuting, notably the woodland, and riparian and grassland habitats along with the River Cree and Penkiln Burn. Every effort should be made to ensure that trees are retained during the works as they provide sheltered habitat and familiar landscape elements which bats require.

7.3.3 Badger

Badgers and their setts are protected under the Protection of Badgers Act 1992 as amended by the Wildlife and Natural Environment (Scotland) Act 2011. The grassland, woodland and hedgerow habitats are suitable for badgers.

While no badger setts were identified during the survey the entirety of the Site could not be surveyed due to access issues. It is **recommended** that a pre-construction survey for new setts is carried out, including the proposed laydown area, no more than three months prior to works.

7.3.4 Otter

Otter are European protected species, fully protected under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). The Site is suitable for this species.

While no field signs of otter were noted during the survey the entirety of the Site could not be surveyed due to access issues. It is **recommended** that a pre-construction survey is carried out within the Site which includes the woodlands to the southeast of the B7079 bridge and northeast of the A75 and a surrounding 200m buffer, no more than three months prior to the commencement of works.

It is **recommended** that night working is avoided. Artificial lights used during construction should be directed away from waterbodies and their banks to reduce disturbance and changes to protected species behaviour.

7.3.5 Water Vole

Water vole burrows and resting places are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). There was no evidence of water vole recorded during the survey. There was a single section of the River Cree surveyed (Section 7) that was assessed to be suitable for water voles.

It is **recommended** that a water vole survey is undertaken between mid-April to June to identify if the species is present. If water voles are present, a 10m work exclusion zone will be required around active water vole burrows; if this was not possible then a NatureScot mitigation licence application would be required to permit the works.

7.3.6 Red Squirrel

Red squirrel and their dreys are fully protected under Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended). The woodland on Site is suitable for red squirrel and records of this species were identified within 2km of the Site. There were no signs of red squirrel noted during the survey.

It is a **recommended** that a pre-construction check for dreys should be carried out prior to felling of any trees. This should be carried out as close as possible to the time of the works as possible, no more than three months ahead of works. If felling is carried out during the breeding season (February-September) an additional check should be carried out no more than three weeks ahead of the felling works.

7.3.7 Reptiles

Reptiles including slow worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*) and adder (*Vipera berus*) are protected under the Wildlife and Countryside Act 1981 (as amended) Schedule 5 and by the Nature Conservation (Scotland) Act 2004. Slow worm, common lizard and adder are also listed on the Scottish Biodiversity List.

There were no records of reptiles returned from the data search however, there is suitable habitat for reptiles present on Site within the woodland, grassland, scrub and tall ruderal vegetation. Given the relatively small scale of vegetation clearance for the proposed project it is unlikely that the project would result in a loss of significant areas of reptile habitat. As such, works could potentially be carried out assuming reptiles are present, employing appropriate mitigation methods; however, this would pose seasonal constraints on the works.

Precautionary working methods to avoid impacts to reptiles would include (but would not be limited to) the following:

- If vegetation clearance is carried out outside of the active season for reptiles (active season: April-October), this should be to ground level only with no ground disturbance.
- Ground disturbance works or disturbance of stone walls or debris piles should be carried out under supervision during the active season only.
- During the active season, vegetation clearance should be carried out in suitable conditions (>10°C and dry).
- Vegetation clearance and ground disturbance works during the active season should be supervised by a suitably qualified ecologist, so that any reptiles present within works areas can be identified and moved away (avoiding killing and injury, which is an offence). Vegetation must be cleared using precautionary methods (i.e. phased strim) prior to ground disturbance.

Please note that using these precautionary methods increases the amount of time it takes to carry out earthworks and vegetation clearance.

Alternatively, carrying out a reptile survey at the site could serve to rule out the presence of reptiles and therefore avoid the need to employ precautionary working methods. If a reptile survey is carried out, this should consist of a visit to place artificial refuge sites and a further seven survey visits in suitable weather conditions (10-20°C and dry) during April-October. If no reptiles were identified, no further mitigation for this group would be required; however, if surveys confirmed that reptiles are present on site, works would need to be carried out following precautionary methods detailed within a precautionary method statement for works.

If any tree felling or vegetation clearance is required there is an **opportunity** to leave some trees and dead/cut wood *in situ* to act as hibernacula (winter refugia) for herpetofauna species.

7.3.8 Amphibians including GCN

Great crested newts are European protected species and have full protection under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). Common toad is listed on the SBL.

The common precautionary working methods listed for reptiles in section 7.3.7 will minimise the risk of the works to common amphibian species.

As with reptiles, if any tree felling or vegetation clearance is required there is an **opportunity** to leave some trees and dead/cut wood *in situ* to act as hibernacula (winter refugia) for amphibians.

7.3.9 Invasive Non-Native Species

The law on non-native species is covered by the Wildlife and Countryside Act 1981 (as amended by the Wildlife and Natural Environment (Scotland) Act 2011), making it an offence to allow non-native species to grow in the wild.

Seven INNS species were identified on Site: cotoneaster, Himalayan balsam, Japanese knotweed, rhododendron, buddleia, snowberry and montbretia with all species apart from cotoneaster noted on the riverbank.

The activities involved in the management and disposal of INNS are subject to regulatory control. It is a **mandatory requirement** to demonstrate that reasonable steps to avoid unlawful spread of INNS had been taken and ensure compliance with Scottish Government's Code of Practice. It is therefore **recommended** that a specialist contractor is hired to remove these invasive species prior to construction.

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Drawings

Figure 1 – Statutory Sites

Figure 2 – Phase 1 habitat map

Figure 3 – Protected species and invasive species map