

# **ECOLOGICAL IMPACT ASSESSMENT**

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**FOR THE  
PROPOSED  
PLATFORM FOR GROWTH: SHARED COMMUNITY  
FACILITIES PROJECT  
AT  
ACRES LAKE BOARDWALK**

**by:**

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## Document Control

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# Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Overview and Aims .....	1
1.2	Legislative Context.....	1
1.3	Approach to Ecological Evaluation and Impact Assessment.....	2
<b>2</b>	<b>Methodology .....</b>	<b>4</b>
2.1	Desk Study .....	4
2.2	Field Survey .....	4
2.2.1	Limitations.....	5
<b>3</b>	<b>Proposed Acres Lake development.....</b>	<b>6</b>
3.1	Shared facilities overview .....	6
3.2	Project specifics at Acres Lake Boardwalk.....	6
3.3	Receiving Environment.....	10
3.3.1	Overview .....	10
3.3.2	Zone of Influence.....	10
3.3.3	Designated Areas .....	10
3.3.4	Records of protected, rare or other notable Flora and Fauna Species .....	14
3.3.5	Field Survey Results .....	14
3.3.6	Summary of Ecological Evaluation and recommendations .....	21
<b>4</b>	<b>Potential Impacts .....</b>	<b>22</b>
4.1.1	Potential Impacts on Designated Sites.....	22
<b>5</b>	<b>Mitigation Measures / Monitoring .....</b>	<b>23</b>
<b>6</b>	<b>Cumulative Impacts .....</b>	<b>25</b>
<b>7</b>	<b>Residual Impacts.....</b>	<b>27</b>

## Appendices

- Appendix I** Natura 2000 Sites, Natural Heritage Areas and proposed Natural Heritage Areas within 15km of the proposed site.
- Appendix II** Protected and invasive species within 10km hectad(s) of the proposed site.
- Appendix III** Habitat types and descriptions of the proposed site
- Appendix IV** Winter bird data and survey details

## Table of Figures

Figure 3.1 Proposed site layout and location of the facility and associated carparking area .....	7
Figure 3.2 Proposed facility layout.....	8
Figure 3.3 Illustration of the proposed facility when completed .....	9
Figure 3.4 Natura 2000 sites within a 15km buffer of the Acres Lake proposed development .....	11
Figure 3.5 Natural Heritage Areas within a 15km buffer of the Acres Lake proposed development ...	13
Figure 3.6 Habitat map (Fossit level 3) within the Acres Lake Boardwalk area.....	15
Figure 3.7 Map of all birds identified during the breeding bird survey at Acres Lake Boardwalk .....	17
Figure 3.8 Map of all foraging and roosting activity at Acres Lake Boardwalk .....	19

## Table of Tables

Table 1.1 Criteria used in Assessing the Importance of Ecological Features .....	3
Table 3.1 Bat survey results.....	16
Table 3.2 Breeding bird survey results.....	16
Table 3.3 Winter bird survey results .....	18
Table 3.4 Summary of all birds observed foraging in the Acres Lake Boardwalk .....	20
Table 3.5 Summary of all birds observed roosting in the Acres Lake Boardwalk.....	20
Table 3.6 Summary of all birds observed flying overhead in the Acres Lake Boardwalk.....	20

# 1 INTRODUCTION

## 1.1 OVERVIEW AND AIMS

This report assesses potential impacts that may arise from the proposed platform for growth: shared community facilities project [proposed development] at Acres Lake Boardwalk on biodiversity within the receiving environment, in accordance with the following guidance documents:

- *Draft Guidelines on Information to be contained in Environmental Impact Statement Reports.* (2017) Environmental Protection Agency.
- *Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine* (2018). Chartered Institute of Ecology and Environmental Management (CIEEM), Ver. 1.1 Updated September 2019.
- *Guidelines for Preliminary Ecological Appraisal.* (2017) Chartered Institute of Ecology and Environmental Management (CIEEM), Second Edition.
- *A Guide to Habitats in Ireland* (2000), Fossitt JA.
- *Best Practice Guidance for Habitat Survey and Mapping.* (2011) The Heritage Council.

It aims to discuss the existing ecological environment, the potential impacts of the proposed development and avoidance and mitigation measures in relation to habitats, flora and fauna in the zone of influence (ZOI) of the proposed development. A separate stand-alone AA Screening Report is also included in the planning application documentation.

## 1.2 LEGISLATIVE CONTEXT

Specific focus is placed on protected species/habitat features as well as those of local or national importance. Ireland's *National Biodiversity Action Plan 2017–2021*<sup>1</sup>, in accordance with the Convention on Biological Diversity, is a framework for the conservation and protection of Ireland's biodiversity, with an overall objective to secure the conservation, including, where possible, the enhancement and sustainable use of biological diversity in Ireland and to contribute to collective efforts for conservation of biodiversity globally. The plan is implemented through legislation and statutory instruments concerned with nature conservation. The Planning and Development Acts, 2000 (revised September 2020) and the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1989 to 1999 are particularly important in that regard and include a number of provisions directly concerned with the protection of natural heritage and biodiversity.

The Wildlife Acts, 1976–2012 are the principal mechanism for the legislative protection of wildlife in Ireland. They outline strict protection for species that have significant conservation value. In summary, the Wildlife Acts protect species from injury, disturbance and damage to breeding and resting sites. All species listed in the Wildlife Acts must, therefore, be a material consideration in the planning process. The Flora (Protection) Order, (2015) gives legal protection to certain species of wild flora, *i.e.*, vascular plants, mosses, liverworts, lichens and stoneworts. Under the Order, it is an offence to uproot, damage, alter, or interfere with any species listed species listed within the Order, or to damage or alter their supporting habitats.

The European Communities (Birds and Natural Habitats) Regulations, 2011–2015 transpose into Irish law Directive 2009/147/EC (the Birds Directive) and the Habitats Directive, which list habitats and species of Community, *i.e.*, European Union (EU), importance for conservation and that require protection. This protection is afforded in part through the designation of areas that represent significant populations of listed species within a European context, *i.e.*, Natura 2000 sites. An area designated for bird species is classed as a Special Protection Area (SPA), and an area designated for other protected species and habitats is classed as a Special Area of Conservation (SAC). Birds listed in Annex I of the Birds Directive in SPAs and habitats and species listed in Annexes I and II, respectively, of the Habitats Directive in SACs in which they are designated features have full European protection. Species listed on Annex IV of the Habitats Directive are strictly protected wherever they occur, whether inside or outside European sites. Annex I habitats outside of SACs are still considered to be of national and

<sup>1</sup> NPWS: <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>

international importance and, under Article 27(4)(b) of the European Communities (Birds and Natural Habitats) Regulations, 2011, public authorities have a duty to strive to avoid the pollution or deterioration of Annex I habitats and habitats integral to the functioning of SPAs.

Sites of national importance for nature conservation are afforded protection under planning policy and the Wildlife Acts, 1976–2012. NHAs are sites that are designated under statute for the protection of flora, fauna, habitats and geological interest. proposed NHAs (pNHAs) are published sites identified as of similar conservation interest but have not been statutorily proposed or designated.

The International Union for the Conservation of Nature and Natural Resources (IUCN) provides a global approach for evaluating the conservation status of species to inform and catalyse action for biodiversity conservation through the Red List of Threatened Species.

## 1.3 APPROACH TO ECOLOGICAL EVALUATION AND IMPACT ASSESSMENT

Assessing impact significance is a combined function of the value of the affected feature (its ecological importance), the type of impact and the magnitude of the impact. It is necessary to identify the value of ecological features within the study area in order to evaluate the significance and magnitude of possible impacts.

The following parameters are described when characterising impacts (following CIEEM (2018), EPA (2017) and TII (2009, Rev. 2)):

**Direct and Indirect Impacts** - An impact can be caused either as a direct or as an indirect consequence of a proposed plan or project.

**Magnitude** - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

**Extent** - The area over which the impact occurs – this should be predicted in a quantified manner.

**Duration** - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated;
- Permanent: The effects would take 60+ years to be mitigated.

**Likelihood** – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted;
- Extremely Unlikely: <5% chance as occurring as predicted.

The CIEEM Guidelines define an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area. The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (CIEEM, 2018).

The results of the ecological survey were evaluated to determine the significance of identified features located in the study area on an importance scale ranging from international-national-county-local. The local scale is approximately equivalent to one 10km square but can be operationally defined to reflect the character of the area of interest. Because most sites will fall within the local scale, this is subdivided into three categories: high local importance, local importance, and local value. The criteria used for assessing the importance of ecological features are shown in Table 1.

**Table 1.1 Criteria used in Assessing the Importance of Ecological Features**

<b>Importance</b>	<b>Criteria</b>
International	An internationally designated site or candidate site (SPA, cSPA, SAC, cSAC, Ramsar Site, Biogenetic Reserve). Also, sites which qualify for designation as SACs or SPAs – this includes sites on the NGO shadow list of SAC's.
National	A nationally designated site or candidate site (NHA, pNHA). Sites which hold Red Data Book (Curtis and McGough, 1988) plant species.
County	Sites which hold nationally scarce plant species (recorded from less than 65 of the national 10km grid squares); unless they are locally abundant. Sites which hold semi-natural habitats likely to be of rare occurrence within the county. Sites which hold the best examples of a semi-natural habitat type within the county.
High Local Importance	Sites which hold semi-natural habitats and/or species likely to be of rare occurrence within the local area. Sites which hold the best examples of a high quality semi-natural habitat type within the local area.
Local Importance	Sites which hold high quality semi-natural habitats.
Local Value	Any semi-natural habitat.

## 2 METHODOLOGY

### 2.1 DESK STUDY

A desktop review was carried out to identify features of ecological importance within the proposed development site and the wider environment. Ecological impact assessment is conducted following a standard source-pathway-receptor model, where, in order for an impact to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – *e.g.*, pollutant run-off from proposed works.
- Pathway(s) – *e.g.*, groundwater connecting to nearby qualifying wetland habitats.
- Receptor(s) – qualifying aquatic habitats and species of European sites.

Specific focus was put into the assessment of sensitive receptors of protected species/habitat features; as well as those of local or national importance. A source is any identifiable element of the proposed development proposal which is known to have interactions with ecological processes. Pathways are any connections or links between the source and the receptor. This report determines if direct, indirect or cumulative adverse effects will arise from the proposed development.

### 2.2 FIELD SURVEY

Data was collected during multiple site visits; general ecological receptor and habitats data was gathered during two walkover surveys conducted on the 8<sup>th</sup> of September 2020 and 11<sup>th</sup> of August 2021. The data represents a walkover of the entire proposed Acres Lake site and key ecological areas within the surrounding area. A habitat survey of the site was conducted following standard guidelines set out in 'Best Practice Guidance for Habitat Survey and Mapping' developed by the Heritage Council of Ireland<sup>2</sup>. Habitats were classified using habitat descriptions and codes published by the Heritage Council in 'A Guide to Habitat Types in Ireland'<sup>3</sup>. Plant species nomenclature follows Rose's 'The Wild Flower Key: How to identify wild flowers, trees and shrubs in Britain and Ireland'<sup>4</sup>. A list of the dominant and notable plant species was taken for each habitat type. Particular emphasis was given to the possible occurrence of rare or legally protected plant species (as listed in Flora Protection Order 1999) or Red-listed plant species (Curtis & McGough 1985, Wyse Jackson *et al.* 2016).

Observations were made for fauna species present or likely to occur on site. Emphasis was placed on mammals and birds, and especially for species listed in the respective Red lists, namely; Gilbert *et al.* 2021<sup>5</sup> (birds), and Marnell *et al.* 2019<sup>6</sup> (mammals). For mammals, the survey was focused on signs of their presence/activity, such as tracks, feeding marks and droppings, as well as any direct observations. Regarding bats, the main focus was on evaluation of suitable habitats to support roosting individuals or communities; however, an ecological assessment of habitat suitability was undertaken throughout the site. The assessment process undertaken for bats followed the BCT Guidelines<sup>7</sup>. Chapter 4 of these guidelines identify the approach to assess 'preliminary ecological appraisal for bats'. This chapter sets out methods for identifying habitat suitability which do not constitute assumptions. Based on the information from the assessment the survey effort requirements are identified. A specific bat activity survey was also undertaken on the 30<sup>th</sup> of August 2021.

Bird species were recorded by sight and sound during a bird point count during the ecological walk over, following the Birdwatch Ireland Country Breeding Bird survey methods. Only one breeding bird survey was conducted on the 15<sup>th</sup> of June 2021. In addition, all linear hedgerows were walked and

<sup>2</sup> Smith, George F., et al. "Best practice guidance for habitat survey and mapping." The Heritage Council: Ireland (2011)

<sup>3</sup> Fossitt, J.A., 2000. A guide to habitats in Ireland. Heritage Council/ Chomhairle Oidhreachta

<sup>4</sup> Rose, F., O'Reilly, C., Smith, D.P. and Collings, M., 2006. The wild flower key: how to identify wild flowers, trees and shrubs in Britain and Ireland. Frederick Warne.

<sup>5</sup> Gilbert, G., et al. 2021. Birds of Conservation Concern in Ireland 4: 2020–2026. *Irish Birds*, 43, pp.1-22.

<sup>6</sup> Marnell, F., Looney, D. & Lawton, C. (2019) Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

<sup>7</sup> Collins, J. (ed.) 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn). The Bat Conservation Trust, London.



species were recorded. Particular attention was focused on areas within the site of high ecological value that interact or overlap with parts of the proposal to provide civil recreation.

A dedicated winter bird assessment was undertaken on-site on following the SNH Guidelines<sup>8</sup>. This approach is standard practice when assessing potential impacts on winter wading birds. A total of 36 hours of surveys were completed at the site over a 6-month period (between October and March) to identify the site usage from bird species. Specific attention was placed on recording foraging and roosting areas that may be used by SCI species relating to SPAs within commuting range of Acres Lake Boardwalk.

During all surveys, particular attention was given to assessing the presence of rare or protected species. Each species identified was assessed in term of the EU Habitat Directive (92/43/EEC), Bird Directive (2009/147/EC), the Wildlife Act (1976), the Wildlife Amendment Act (2000) and the Red Data Lists for threatened and protected species, published on the NPWS website<sup>9</sup>.

### **2.2.1 LIMITATIONS**

Only one breeding bird survey was undertaken at the site – two is best practice – however this was not seen to be a significant limitation given the data yielded from the survey. Given the context of the development and the extent of the survey works undertaken; there are no significant limitations to the present assessment of the ecological importance of the Acres Lake Boardwalk site.

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<sup>8</sup> SNH (2017) Recommended bird survey methods to inform impact assessment of onshore wind farms; Scottish Natural Heritage

<sup>9</sup> NPWS website for protected species and habitats data accessed at: <https://www.npws.ie/maps-and-data>

## **3 PROPOSED ACRES LAKE DEVELOPMENT**

### **3.1 SHARED FACILITIES OVERVIEW**

Failte Ireland aim to support the development of shared facilities at waterways in the Republic of Ireland through the provision of funding. This funding is made available to County Councils only and there are a series of terms and conditions associated with the application process. Included in this is that the sites selected must have existing water sports operators such as surf schools and/or stand-up paddle boarding (SUP) schools in-situ. This is to consolidate existing tourism offerings and elevate the appeal of these areas by providing adequate facilities. The funding is supported by detailed design specifications and additional supports; however, each site has potential for site specific alterations.

Ecological considerations were built into the site selection process with over 47 proposed locations for shared facilities structures to be placed. Phase 1 and Phase 2 of the ecological considerations (constraints and opportunities assessments) can be seen in Appendix III.

### **3.2 PROJECT SPECIFICS AT ACRES LAKE BOARDWALK**

The planning report and associated documents which support this assessment contain the intricate details of the works proposed. It is advised that all supporting material be read in conjunction with this report.

The project description is summarised below to facilitate a general understanding of the overall scope of the proposed project. The shared facilities structure will contain a number of resources such as indoor and outdoor shower which are heated through solar power, serviced toilets as well as seating both external to the roofed structure and internal. The facilities also include a communal communication area which is intended to be used as a briefing area for the operators that use the facilities. In addition to these, there are additional amenities such as lockers for storage and washdown areas.

The structure itself is small in scale and has a discrete footprint; the specific location can be observed in Figure 3.1 and Figure 3.2 below, as well as the design specifications proposed for the building itself in Figure 3.3.

At Acres Lake there are a number of existing facilities such as an outdoor swimming pool, tennis courts and a playground area. The application at this site includes improvement works to these facilities as well as the construction of a new carparking area at the site and raised controlled pedestrian crossing on the R207. See the attached planning application for full specs of the design; however, the figure below contains a full site layout of the proposed works. Overall, the full scope of the project is seen to be small in scale (see Figures below for location, layout and design).

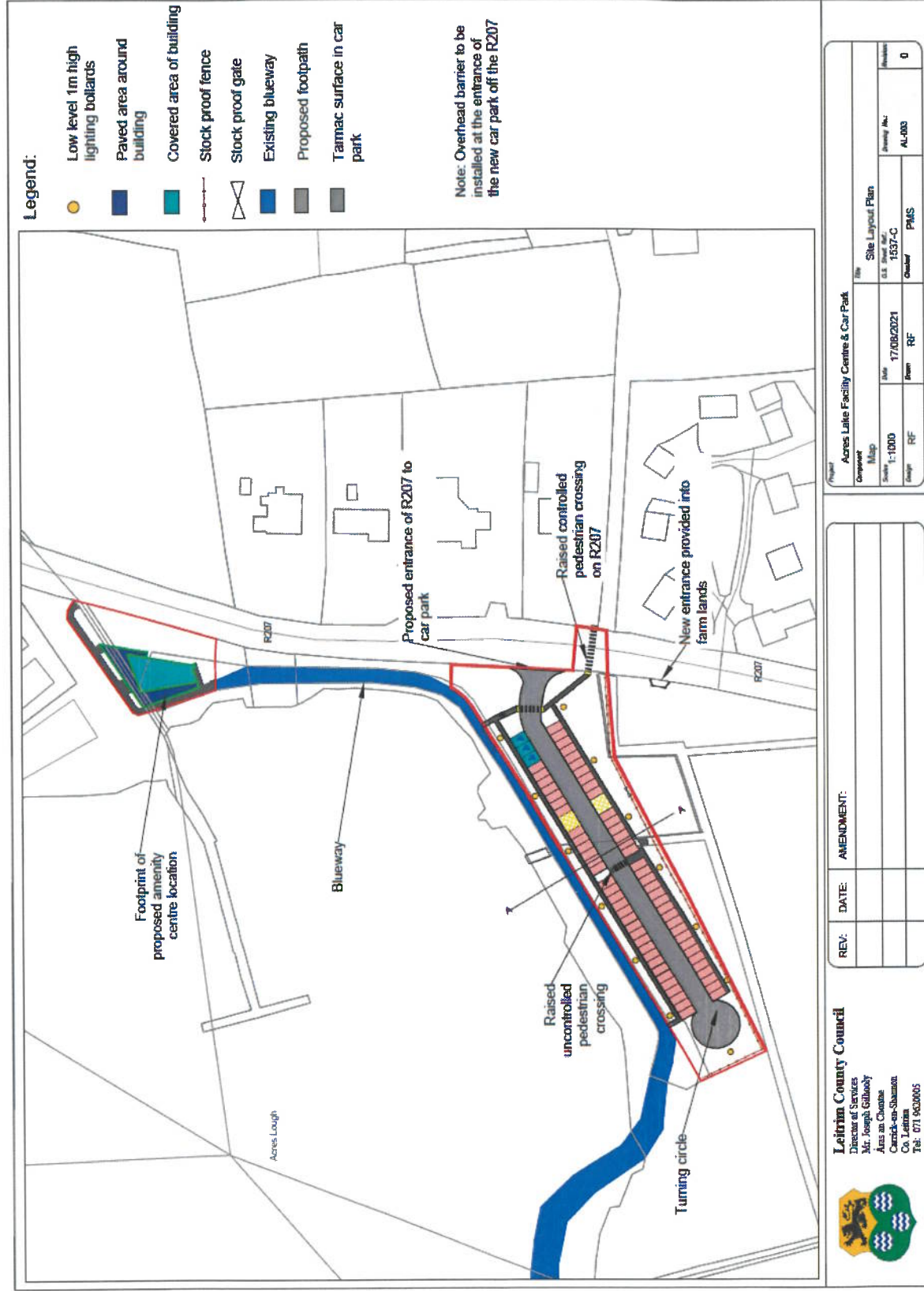


Figure 3.1 Proposed site layout and location of the facility and associated carparking area







Figure 3.3 Illustration of the proposed facility when completed



## 3.3 RECEIVING ENVIRONMENT

### 3.3.1 OVERVIEW

Acres lake is a semi natural lake that has been excavated to improve the flow and provide canal channels. This area is long established and has been managed to create tall herb swamp areas. The far bank is a riparian woodland area. The site has a small existing carpark and a robust boardwalk to control visitor movements on site. The site is an existing pier with activities taking place on site already.

### 3.3.2 ZONE OF INFLUENCE

The operational phase works are anticipated to interact with the local area in terms of disturbance effects associated with recreational use both along the boardwalk and in the water itself. The construction phase works may have some effects beyond the boundary due to increased noise pollution, the addition of artificial lighting conditions and possible water quality effects. Possible operational phase impacts could be lighting and drainage alterations. However, the proposed development and the alterations proposed to the site therein, are temporary in the construction phase, with an operational phase similar to the current operation and condition of Acres Lake. There may be increased visitor numbers due to the increased amenity on site. Following the source-pathway-receptor model identifying the potential likely sources a Zone of Influence (ZOI) was established; 2km radius around the proposed site. Given the nature of the proposed works, impacts are not foreseen to be significant beyond this distance.

### 3.3.3 DESIGNATED AREAS

In accordance with the European Commission Methodological Guidance (EC, 2001), a list of European Designated Sites that can be potentially affected by the works has been compiled. A dedicated Appropriate Assessment Screening, reviewing all European sites within the zone of influence of the project, was undertaken. A review of the conservation objectives and qualifying interests of these sites was undertaken in order to identify what habitats and/or species could be vulnerable to risk of impact from the proposed development. This was done by assessing whether any source receptor links existed between the qualifying interests of the designated sites and the proposed site.

When assessing ecological impacts, the CIEEM Guideline recommend a 15km zone of influence as an adequate buffer for potential effects. Due to the characteristics of the project, all other Natura 2000 sites and pNHA/NHA sites beyond threshold distances of 15km are considered to be of sufficient distance from the proposed site, that no significant effects could be caused either directly or indirectly or in combination with other plans or projects to their interest features. Any impacts caused by the Acres Lake proposed development have no valid impact pathway to transfer along to reach any of the receptor interest features. These sites are 'screened out' and not considered further.

A stand-alone Screening Report submitted separately to this assessment, expands on the potentially affected designated sites and their conservation objectives in more detail. Appendix I provides a list of all of the designated sites considered within the assessment arranged by distance from the proposed Acres Lake proposed development which are assessed as part of this report. Figure 3.4 displays the Nature 2000 sites within a 15km radius buffer of the proposed project as well as all sites with functional pathways for effects. The proposed site has a surface water hydrological pathways connecting it to Natura 2000 sites in Clare and all along the River Shannon along an extensive hydrological pathway.

In addition to examining European sites, NHAs and pNHA have been considered. Figure 3.5 displays the National sites within a 15km buffer of the park. Although NHAs and pNHAs do not form part of the Natura 2000 Network, they often provide an important supporting role to the network, particularly when it comes to fauna species which often do not obey site boundaries. There are however, NHAs and pNHAs that are designated for features that are not important at an international level and thus may not interact with the Natura 2000 network.





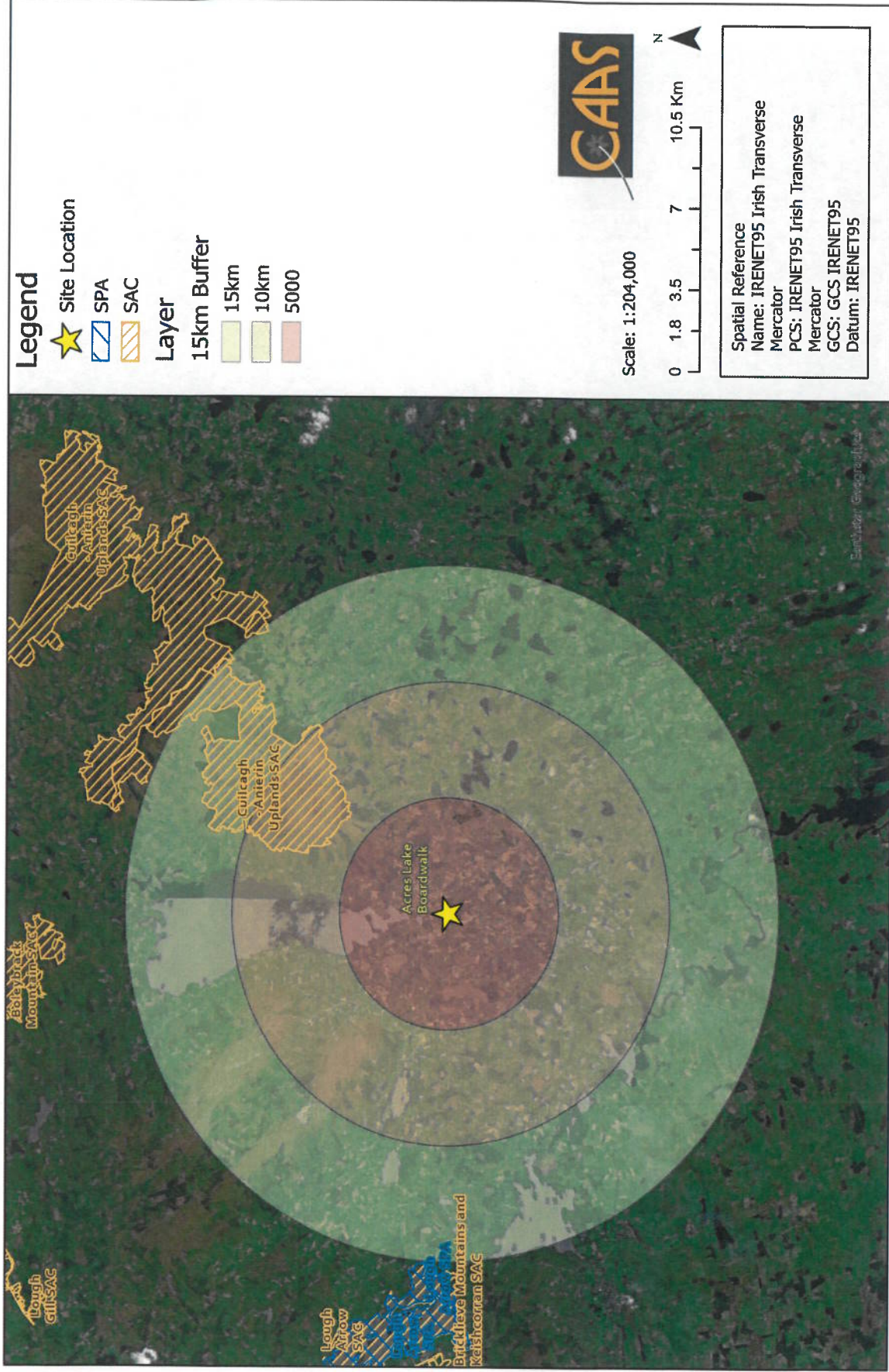


Figure 3.4 Natura 2000 sites within a 15km buffer of the Acres Lake proposed development



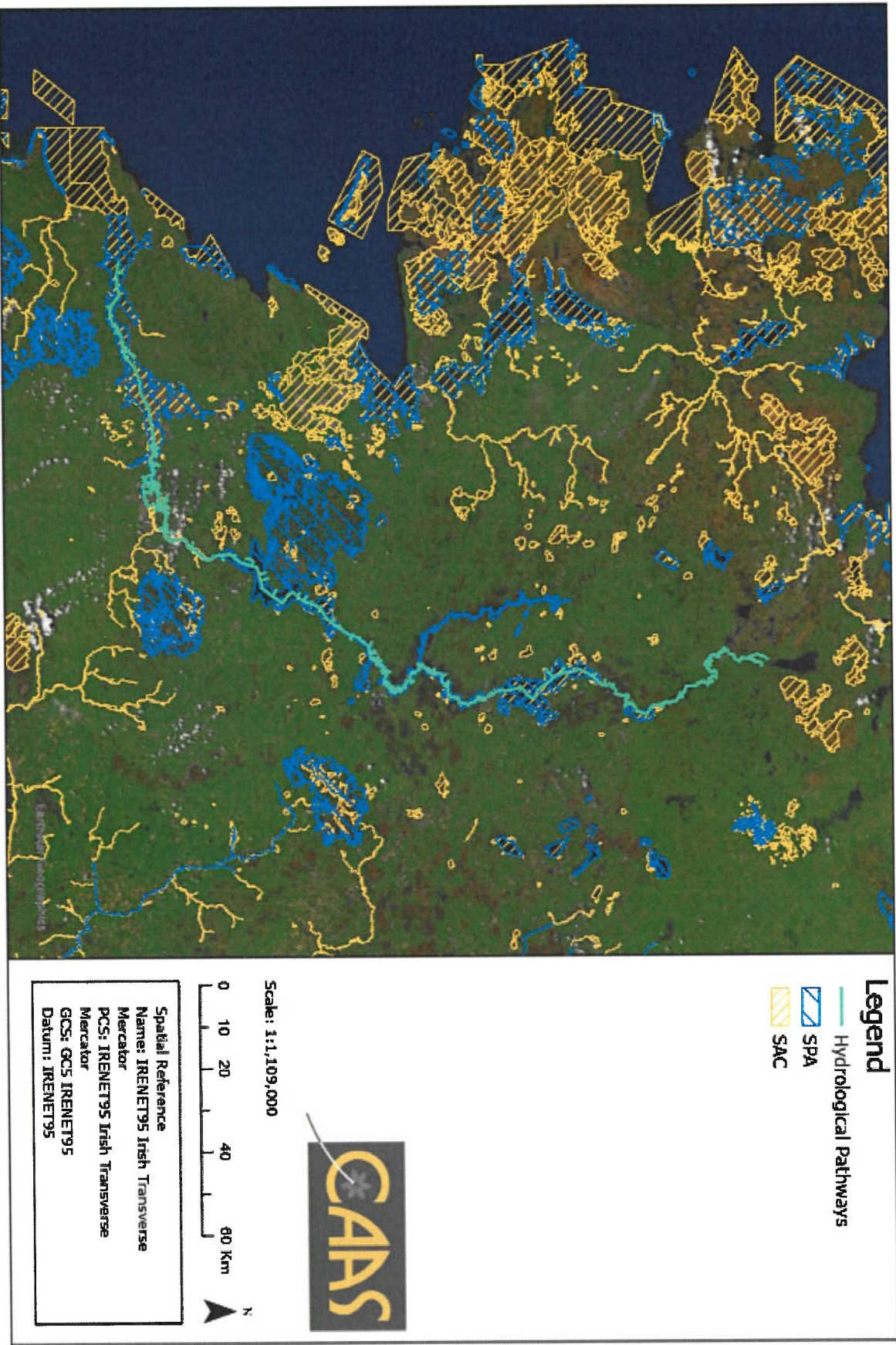


Figure 4 Hydrological connectivity of the site, showing significant dilution effects before reaching any European site







### **3.3.4 RECORDS OF PROTECTED, RARE OR OTHER NOTABLE FLORA AND FAUNA SPECIES**

The digital database of the National Biodiversity Data Centre (NBDC) was consulted to assess known records of rare, protected and invasive species that occur in the surrounding landscape. The collation of this information, as well as examination of aerial photographs allowed areas of potential ecological importance to be highlighted prior to field survey work. A search was undertaken of records of Red Data Book and Protected species held by the National Biological Data Centre Database. A list of the rare and/or protected species from the two 10km x 10km grid squares which intersect the study area (G90 and G91) is provided in Appendix II<sup>10</sup>.

#### **3.3.4.1 Invasive Flora Species**

Publicly available NBDC data was accessed to identify invasive species in the two 10km x 10km grid squares which intersect the study area: G90 and G91. 4 of the flora species and 7 of the fauna species listed in Appendix II, that have been recorded in the hectads G90 and G91 which contain the proposed site, are subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011.

### **3.3.5 FIELD SURVEY RESULTS**

The results of the ecological site visits are discussed below. Relevant mapping to support the ecological results and discussion are also provided below.

#### **3.3.5.1 Habitats and Flora**

No Annex I habitats or rare/protected floral species found on site. Some of the habitats present on site are of high local importance in terms of support for local biodiversity, resource availability, and ecological connectivity across the landscape.

The habitats on-site were surveyed and classified using the Fossit Level 3 coding system which are presented in the map below. The habitats found on site were lake habitats, tall herb swamps, amenity grasslands, riparian woodland and wet grassland. The wet grassland areas are the main habitat type which will be lost as a result of the proposed development; however, this is a low diversity pasture field with a corresponding low local ecological value. For specific detail relating to the species composition of each of these habitats see Appendix III.

#### **3.3.5.2 Invasive species**

Canadian waterweed (*Elodea canadensis*) was identified on site within the lake itself; this species is subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011. No other invasive species were recorded on site.

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<sup>10</sup> National Biodiversity Centre data. Accessed: 13<sup>th</sup> October 2021











### 3.3.5.3 Fauna

#### Non-volant mammals

There were no mammal activity signs identified on site during any of the surveys. However, it is very likely that otter is present on site and therefore, this is assumed present on site for the purposes of the assessment. There were no otter holts recorded on site.

#### Bats

There were no bat potential bat roost features identified on site during the preliminary surveys for potential bat roost features conducted on the 8<sup>TH</sup> of September 2020 and 11<sup>th</sup> of August 2021. The walked bat transect was carried out on the night of 30<sup>th</sup> of August 2021. The transect took a route from the existing carpark and along the boardwalk.

Daubenton's bat was the most common species in number of recorded passes (Table 3.1); which would be expected due to the high volume of freshwater habitat in the park and along the transect. Soprano and common pipistrelle were also observed on site also. 3 passes were recorded for the Leisler's bat.

**Table 3.1 Bat survey results**

Common name	Scientific name	# Bat passes
Daubenton's bat	<i>Myotis daubentonii</i>	51
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	37
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	27
Leisler's bat	<i>Nyctalus leisleri</i>	3

#### Birds

Much of the riparian woodland and conifer plantation habitat within Acres Lake holds high local value for nesting breeding birds. In addition to the vegetative habitat, there is significant freshwater habitat within the site that supports a number of resident and migrant water birds. Birds identified during the breeding bird surveys can be seen in Table 3.2 **below and in** Figure 3.7. The only species identified within the project boundary were corvid species and a wren.

**Table 3.2 Breeding bird survey results**

Common name	Scientific Name	BTO Code	Heard	Seen
Mallard	<i>Anas platyrhynchos</i>	MA	Y	Y
Cormorant	<i>Phalacrocorax carbo</i>	CA	Y	Y
Black-headed Gull	<i>Larus ridibundus</i>	BH	Y	Y
Jackdaw	<i>Corvus monedula</i>	JD	Y	Y
Hooded Crow	<i>Corvus cornix</i>	HC	Y	Y
Buzzard	<i>Buteo buteo</i>	BZ	Y	Y
Pied wagtail	<i>Pied wagtail</i>	PW	Y	Y
Reed bunting	<i>Emberiza schoeniclus</i>	RB	Y	Y
Moorhen	<i>Gallinula chloropus</i>	MH	Y	Y
Chiffchaff	<i>Phylloscopus collybita</i>	CC	Y	Y
Blackcap	<i>Sylvia atricapilla</i>	BC	Y	Y
Lesser redpoll	<i>Carduelis flammea cabaret</i>	LR	Y	Y
Goldfinch	<i>Carduelis carduelis</i>	GO	Y	Y
Wren	<i>Troglodytes troglodytes</i>	WR	Y	Y



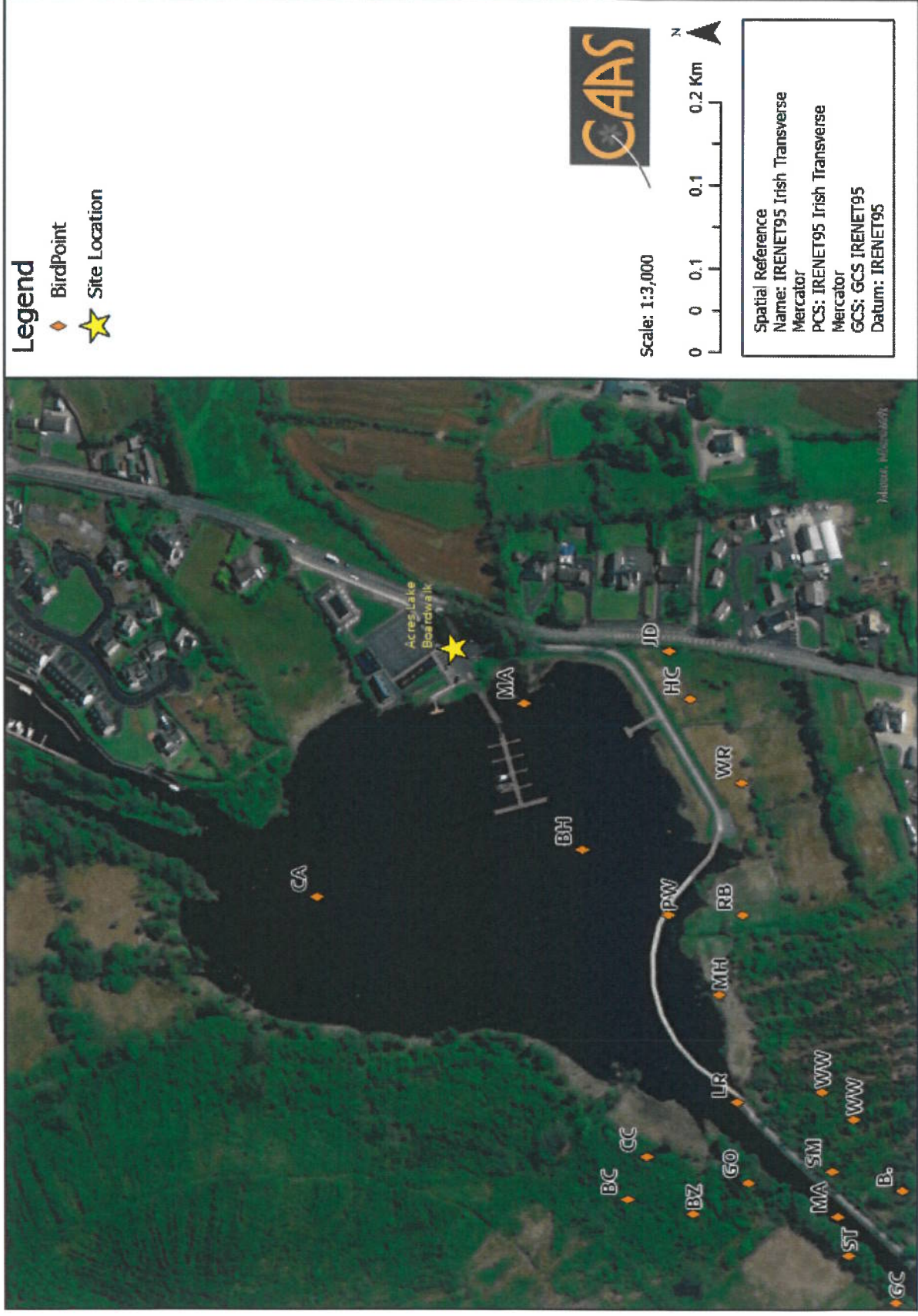


Figure 3.7 Map of all birds identified during the breeding bird survey at Acres Lake Boardwalk



### Winter bird data for Acres Lake Boardwalk

Data was collected for the Acres Lake Boardwalk from October 2020 to April 2021 which recorded the foraging and roosting locations of all birds on-site as well as all bird flight patterns. All species identified on-site can be seen below:

**Table 3.3 Winter bird survey results**

Common name	Scientific Name	BTO Code
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	BH
Cormorant	<i>Phalacrocorax carbo</i>	CA
Lesser Black-backed Gull	<i>Larus fuscus</i>	LB
Mallard	<i>Anas platyrhynchos</i>	MA
Moorhen	<i>Gallinula chloropus</i>	MH
Mute Swan	<i>Cygnus olor</i>	MS
Snipe	<i>Gallinago gallinago</i>	SN

The main areas of note for birds at Acres Lake Boardwalk are identified in Figure 3.8 and discussed below:

The mesotrophic lake of Acres Laks is surrounded by reed beds, which provide foraging and roosting habitat for several bird species. Roosting features include the jetty, the boardwalk, the reed beds. Birds using the site are accustomed to constant flow of walkers and other amenity visits by people, such as water sports.

The following three tables present a summary of each species recorded to be foraging, roosting and/or flying around the Acres Lake Boardwalk area; the full suite of observations recorded is supplied Appendix II.

The deeper areas of the lake were used primarily by gull species such as lesser blackback gull and black headed gulls (foraging area B). The reed beds and shallows (foraging area A) were used by all species identified on site. These species are regularly fed by locals and are thus habituated to a degree to human presence on site. Birds were seen congregating around the jetty dock area; indicating that they are habituated to human interactions (roost area A). Swans ducks and snipe were seen roosting in the reeds areas (roost area B).

The majority of bird activity recorded was centred on the jetty itself, which is used by mallards and black headed gulls to roost on. Duck species tend to forage in the water, the reed beds. around the jetty. and along the shore-side of the boardwalk. Cormorant were seen foraging in the centre of lake and roosting on top of signposts in the water at the entrance to the canal (on the north side). Snipe and mallard were observed roosting in the reed beds, in particular, in a section of flattened reeds just south of the jetty and behind the boardwalk. Acres Lake is overall a relatively busy site for human visitors; with walkers present throughout the day. The jetty is also active with boats moored up. The playground at the carpark is also actively in use. It was noted during all surveys that visitors to Acres Lake often fed the birds at the jetty, thus attracting the gulls, mallards and swans.





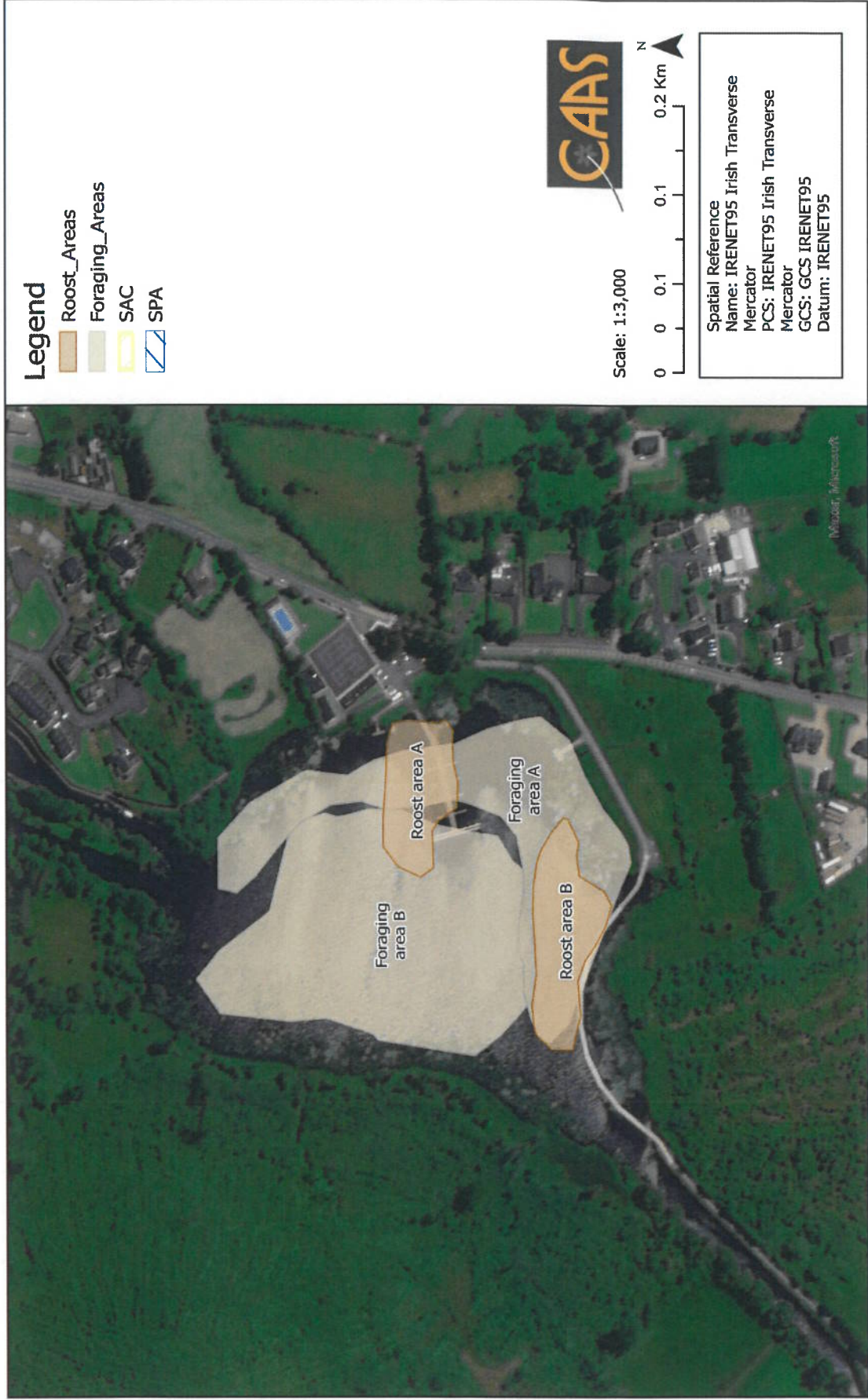


Figure 3.8 Map of all foraging and roosting activity at Acres Lake Boardwalk





**Table 3.4 Summary of all birds observed foraging in the Acres Lake Boardwalk**

Common Name	Scientific Name	Largest Group Observed	Total Numbers Observed	Common Group Size
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	9	108	1
Cormorant	<i>Phalacrocorax carbo</i>	1	4	1
Lesser Black-backed Gull	<i>Larus fuscus</i>	2	4	2
Mallard	<i>Anas platyrhynchos</i>	8	86	4
Moorhen	<i>Gallinula chloropus</i>	1	3	1
Mute Swan	<i>Cygnus olor</i>	2	18	2

**Table 3.5 Summary of all birds observed roosting in the Acres Lake Boardwalk**

Common Name	Scientific Name	Largest Group Observed	Total Numbers Observed	Common Group Size
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	4	57	2
Cormorant	<i>Phalacrocorax carbo</i>	1	2	1
Lesser Black-backed Gull	<i>Larus fuscus</i>	2	2	2
Mallard	<i>Anas platyrhynchos</i>	7	51	2
Mute Swan	<i>Cygnus olor</i>	2	5	2
Snipe	<i>Gallinago gallinago</i>	5	9	2

**Table 3.6 Summary of all birds observed flying overhead in the Acres Lake Boardwalk**

Common Name	Scientific Name	Largest Group Observed	Total Numbers Observed	Common Group Size
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	4	22	1
Cormorant	<i>Phalacrocorax carbo</i>			1
Mallard	<i>Anas platyrhynchos</i>			1
Mute Swan	<i>Cygnus olor</i>	2	4	2
Snipe	<i>Gallinago gallinago</i>	1	4	1

**Amphibians**

No frogs were seen during the survey work; however, for the purposes of the assessment it is assumed that they are present within the receiving environment due to habitat suitability. There are no shallow pool areas on site suitable for newt reproduction and juvenile development, and similarly there is no habitat suitable for lizard populations within the site boundary.

### **3.3.6 SUMMARY OF ECOLOGICAL EVALUATION AND RECOMMENDATIONS**

Overall, the site of the proposed platform for growth: shared community facilities project at Acres Lake Boardwalk has local importance relative to its surroundings in terms of ecological value. The site contains aspects of higher local importance ecologically, such as the lake itself and the riparian woodlands. The area within the project boundary has low ecological value and are species poor – however, there is direct connectivity to local hydrologically sensitive areas.

Furthermore, there are a number of avifauna which are sensitive to disturbance effects; however, these disturbance effects are only identified as being present during construction phase, as the operational phase use is likely to be small scale amenity and in keeping with current site use and condition. There is potential for the development to have adverse impacts on local biodiversity during the construction phase if unmitigated. These potential impacts and the appropriate mitigation measures are discussed in sections 4 and 5 respectively below.

## 4 POTENTIAL IMPACTS

Based on the baseline ecological environment and the extent and characteristics of the proposed development, the following potential impacts have been identified:

1. Augmentation of existing habitats, as well as the potential removal of trees;
2. Invasive species;
3. Water quality;
4. Construction, earthworks and dust;
5. Lighting during construction and operation; and
6. Noise and vibration.

These potential impacts are discussed below:

1. Augmentation of existing habitats, as well as the potential removal of trees
  - The removal of vegetation on site has potential to negatively impact breeding bird populations via reduction of available foraging, roosting or breeding habitat.
2. Invasive species
  - Canadian waterweed (*Elodea canadensis*) was identified on site within the lake itself which is subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011. The construction phase elements of the project will not have in stream works and therefore the only interactions are related to the operational phase of the site which will be consistent with the existing land use.
3. Water quality
  - Due to the location of the proposed development and proximity of ecologically valuable freshwater habitats, it is imperative the mitigation is put in place to protect all water features during all stages of construction for local biodiversity.
4. Construction and Earthworks
  - The Acres Lake proposed development could interact with local habitats vis dust, soil removal, and construction disturbance.
  - Sensitive freshwater habitats and vegetative habitats could be negatively impacted by dust produced during construction and earth works needed to carry out the development.
5. Lighting during construction and operation
  - Strong lighting in the area of the proposed project could impact species that use the site for foraging and commuting, if not implemented with the appropriate ecological considerations.
  - Bats, non-volant mammals, and birds are sensitive to any significant changes in lighting within semi-natural habitat in which they reside.
6. Noise/vibration
  - The construction phase and movement of heavy vehicles across the site could cause localised disturbance of breeding birds and wading birds that may use the habitats within the site area.
  - However, there is likely to be an existing degree of habituation to regular traffic on the site so this impact may not be across the whole site.
  - The operational phase is expected to be very similar to current noise and vibration levels from amenity usage of the site and thus no potential impact is foreseen for the operational phase.

### 4.1.1 POTENTIAL IMPACTS ON DESIGNATED SITES

The AA Screening Report accompanying this report sets out the likelihood and significance of any potential effects to European designated sites as a result of the proposed Acres Lake proposed development. The AA screening found no significant adverse effects foreseen to be likely to affect the ecological integrity of any European sites. There is a direct hydrological link from the park to European sites downstream, and the closest site that not hydrologically linked to the site is approximately 7.51km away. These distances are sufficient for no potential for impacts to European sites as a result of the proposed project to be likely. Thus, there is no likelihood of interaction with European sites at any scale that would result in potential for significant adverse effects to their ecological integrity as a result of the proposed Acres Lake development.

## 5 MITIGATION MEASURES / MONITORING

The proposed site has been identified to have an overall moderate to high local ecological importance due to the freshwater habitats and the riparian woodlands on the far side of the lake itself.

Overall, it is assessed that the implementation of the proposed project will have temporary impacts associated with water quality and the loss of wet grassland habitats. However, the resources that will be lost are of low ecological importance and the following mitigation measures will reduce and avoid impacts.

Considering the key areas for potential impacts identified in section 4 above; the following mitigation measures are recommended for each one:

1. Augmentation of existing habitats, as well as the potential removal of trees

The removal of vegetation on site has potential to negatively impact breeding bird populations; however, the implementation of the project will result in a net gain of tree cover and therefore there will be no long-term negative impact. However, the following shall apply to any vegetation that must be removed:

- No vegetation will be removed during the breeding bird season (1<sup>st</sup> March to the 31<sup>st</sup> of August).
- No vegetation is removed beyond the minimum required to complete the task.
- Timing of works will be as brief as possible to minimise potential disturbance effects.
- Any vegetation removal or disturbance works that must take place during the breeding season should be inspected in advance of works by a suitable qualified ecologist prior to any works commencing and if a nest is identified then the requisite derogation licence must be sought.

2. Invasive Species

Canadian waterweed (*Elodea canadensis*) was identified on site within the lake itself which is subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011. The construction phase elements of the project will not have in stream works and therefore the only interactions are related to the operational phase of the site which will be consistent with the existing land use.

- It is recommended however, that considerations are given to erecting signs to explain the risks associated with the spread of this species and ways to avoid unintended damage or further spread of the species.

3. Water quality

- All Hazardous materials will be stored in bunded areas with sufficient capacity.
- Silt fencing will be installed on the lakeward side of the proposed development during the enabling works. These fences will be checked regularly and maintained according to ensure their effectiveness for reducing sediment run off into the lake.
- Surface water run-off during construction will be directed into existing SUDS networks at/adjacent to the site.

4. Construction and Earthworks

Elements of the proposed Acres Lake proposed development that have potential to interact with existing habitats which have been identified to have local importance overall with certain aspects having a higher local value such as the freshwater habitats on site. Therefore, it is recommended that:

- Dust and debris control measures be implemented where relevant.
- Works directly adjacent to the waters edge are avoided – i.e., all cement mixing works etc. are conducted away from the water's edge.

5. Lighting during construction and operation

Strong lighting in the area of the proposed project could impact species that use the site for foraging and commuting if not carefully controlled. Bats, other mammals, birds and insects

would be sensitive to any significant changes in lighting within semi-natural habitat within the parkland and the freshwater habitats.

Construction phase lighting will need to be controlled to minimise light pollution as a matter of good practice – such as:

- Implementation of lights out hours when construction is not active on site (evening and night hours).
- Operational phase lighting at night should be only where necessary and also directional/cowled.
- UV levels of the lighting installed: very low level or zero UV is preferential, as this has the least effect on insect activity, and thus the minimal interruption to bat foraging possible: Low Pressure Sodium (SOX) is preferable, as it is emitted at single wavelengths, with very low UV emitted. (BCI, 2010<sup>11</sup>; Stone, 2013<sup>12</sup>).
- An Ecological Clerk of Works (ECoW) will be appointed to ensure all on site construction lighting aligns with the conditions set out above. Any deviation from the environmental envelope identified in this EcIA will be reported to Leitrim County Council.
- Where possible, lighting can be dimmed or switched off at night or during periods of low human activity, by implementing variable lighting regimes controlled remotely by CMS (central management system) units (BCI, 2010<sup>11</sup>; Stone, 2013<sup>12</sup>).

Operational phase lighting could have long term slight impacts on bat foraging behaviours, and therefore all external lighting will be 1m tall bollard lights which are low lumen and provide minimal light spill; there are 13 bollards in total but only 6 are near the lakes edge.

#### 6. Noise/vibration

Most of the construction phase works are small scale in size and temporary in time scale.

- Nevertheless, the establishment of best practice measures for minimising and reducing noise and vibration from construction should be implemented throughout the construction phase.

The absence of the application of the above mitigation measures would render the project having the potential to have significant adverse effects on a habitat of moderate-high local importance within the site area. It is thus recommended to implement these measures as part of the proposed project to avoid potential impacts to the ecological integrity of the site.

<sup>11</sup> Bat Conservation Ireland (2010) Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers

<sup>12</sup> Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation

## 6 CUMULATIVE IMPACTS

Plans of relevance in the context of this proposal include:

- Leitrim County Development Plan 2015-2021
- A growth strategy for tourism in Leitrim 2015-2021
- No specific Local Area Plan

There are no specific policies or objectives that conflict with the proposed project. The proposed project is aligned with the development goals set out in the above-mentioned plans and therefore in combination effects are not identified. Furthermore, all policies and objectives contained within the County Development Plan relating to sustainable development etc. must be complied with.

### **Projects of relevance to this development:**

To identify projects for consideration for the cumulative impacts section, the National Planning and Housing development database was used<sup>13</sup>. A review of all planning applications within the identified zone was conducted focusing on all application within the past 5 years<sup>14</sup>.

The only projects in the area relate to retention applications and internal works. There are no sources for effects identified from these projects; therefore, there are no cumulative impacts identified.

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<sup>13</sup> <https://data-housing.gov.ie/opendata/arcgis.com/datasets/planning-application-sites-2010-onwards>;

<sup>14</sup> planning applications have a standard lifespan of 5 years as per Section 40 (3)(b) of the Planning & Development Act 2000, as amended; therefore, these are viewed to be the 'live' applications, all other projects are considered as part of the site context

**Table 3.2 Local planning applications within the receiving environment of the proposed facility**

Project Code	Status	Overview	Project Area (sq m)	Possible significant impacts from plan or project	Is there a risk of combination effects	Possible Significant cumulative impacts
1848	Conditional	Retain existing garage including open storage area to side.	3,299	There are no sources for impacts identified from this project; therefore, there are no in combination effects identified.	No	No
1821	Conditional	(a) retention of change of use from games room to restaurant seating area, (b) retention of free-standing sign (c) alterations to existing restaurant building consisting of new entrance door with external access ramp, internal modifications to provide entrance lobby and accessible WC, provision of new windows to western gable, provision of new external signage to western gable, provision of new external seating area and bicycle racks with all associated site development works.	2,147	There are no sources for impacts identified from this project; therefore, there are no in combination effects identified.	No	No





## **7 RESIDUAL IMPACTS**

Given the nature of the works proposed, there will be no net decrease in terms of the ecological integrity of the site due to the maintenance of the vast majority of natural features and vegetation, maintenance of existing habitat. However, an area of low diversity wet grassland will be permanently lost.

This habitat is of low ecological value and no rare or protected species were recorded to rely on this resource. The characteristics of the development detailed above indicate that any potential residual impacts will be localised related to recreational amenity.

None of the residual effects are identified to be significant at a local scale.



## Appendix I

**Natura 2000 Sites, Natural Heritage Areas and proposed Natural Heritage Areas within 15km of the proposed site – including sites hydrologically connected (arranged by distance from proposed site).**

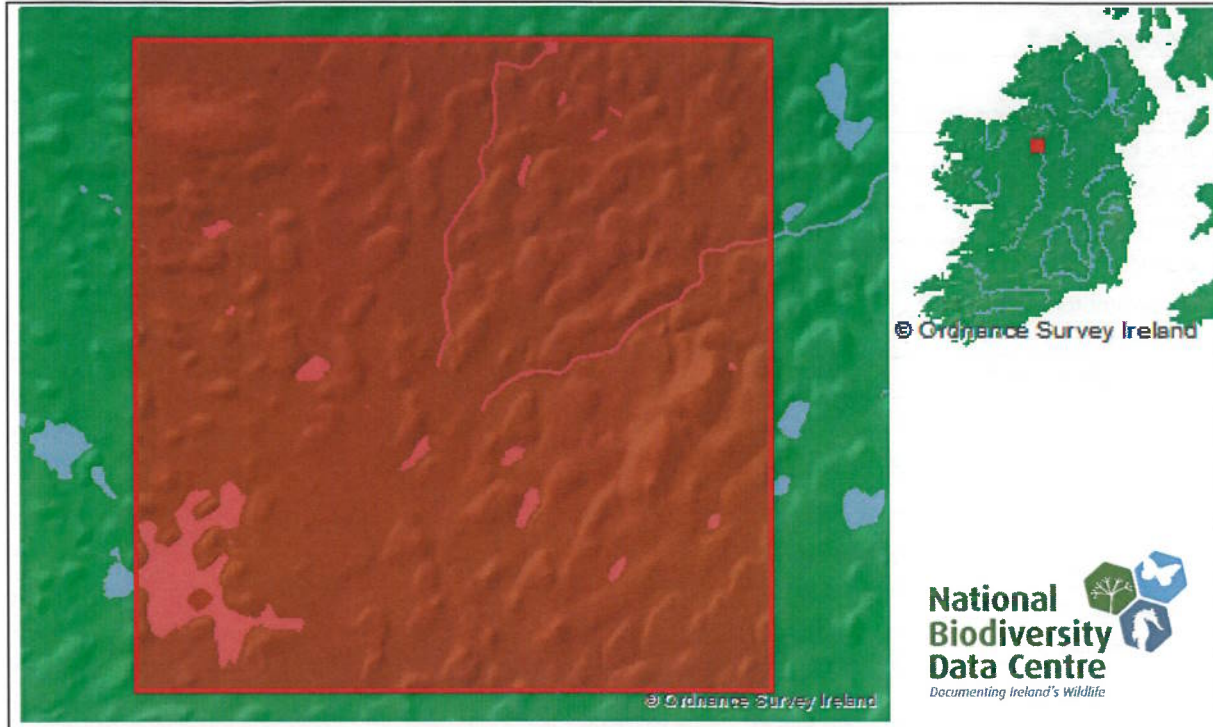
Site Name	Site Code	Distance (km)	pNHA	NHA	SAC	SPA
Lough Allen, South End and Parts	000427	2.08	✓			
Carrickaport Lough	001920	3.84	✓			
Drumhierny Wood	001412	4.60	✓			
Sheemore Wood	001421	5.08	✓			
Kilronan Mountain Bog NHA	000617	5.67		✓		
Cuilcagh - Anierin Uplands	000584	6.14	✓		✓	
Annagheary Lough	001402	6.49	✓			
Lough Drumharlow	001643	8.72	✓			
Corry Mountain Bog NHA	002321	8.93		✓		
Fin Lough (Roscommon)	001636	11.64	✓			
Kilgarriff Marsh	000426	12.79	✓			
Carrane Hill Bog NHA	002415	12.79		✓		
Drumman's Island (Lough Key)	001633	13.65	✓			
Corrigeenroe Marsh	000596	13.98	✓			
Hog's Island (Lough Key)	001638	14.38	✓			
Cromlin Bridge Wood	001409	14.49	✓			
Owengar Wood	001419	14.50	✓			
<b>Hydrologically Connected Sites Beyond 15km</b>						
Derrinea Bog SAC	000604	Beyond 15km			✓	
Drumalough Bog SAC	002338	Beyond 15km			✓	
Bellanagare Bog SAC	000592	Beyond 15km			✓	
Flughany Bog SAC	000497	Beyond 15km			✓	
Bellanagare Bog SPA	004105	Beyond 15km				✓
Urlaur Lakes SAC	001571	Beyond 15km			✓	
Cloonakillina Lough SAC	001899	Beyond 15km			✓	
Carrowbehy/ Caher Bog SAC	000597	Beyond 15km			✓	
Errit Lough SAC	000607	Beyond 15km			✓	
Cloonshanville Bog SAC	000614	Beyond 15km			✓	
Cloonchambers Bog SAC	000600	Beyond 15km			✓	
Doocastle Turlough SAC	000492	Beyond 15km			✓	
Lough Ree SAC	000440	Beyond 15km			✓	
River Shannon Callows SAC	000216	Beyond 15km			✓	
Lower River Shannon SAC	002165	Beyond 15km			✓	
Lough Derg (Shannon) SPA	004058	Beyond 15km				✓
Lough Ree SPA	004064	Beyond 15km			✓	
River Shannon and River Fergus Estuaries SPA	004077	Beyond 15km				✓
Middle Shannon Callows SPA	004096	Beyond 15km				✓
Ballykenny-Fisherstown Bog SPA	004101	Beyond 15km				✓
Lough Forbes Complex SAC	001818	Beyond 15km			✓	



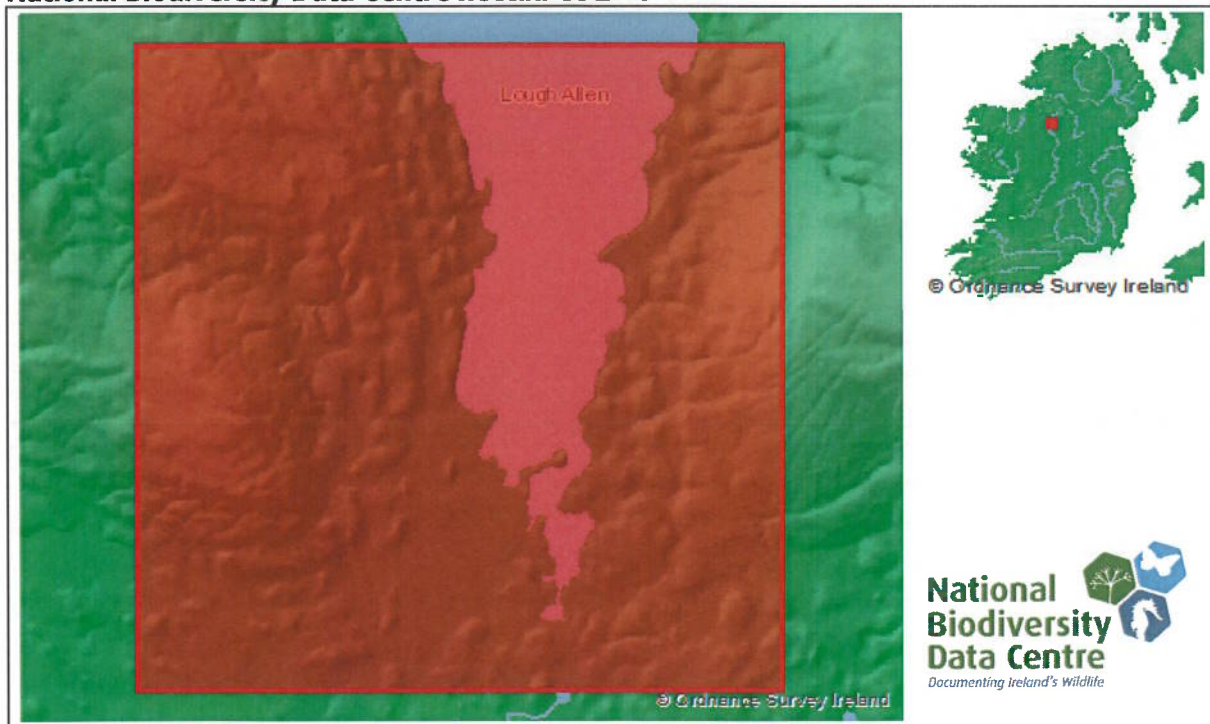
## Appendix II

Two National Biodiversity Centre 10km hectads intersect the proposed shared community facilities project at Acres Lake boardwalk: G90 and G91.

### National Biodiversity Data Centre hectad G90<sup>1,2</sup>.



### National Biodiversity Data Centre hectad G91<sup>1,2</sup>.



<sup>1</sup> National Biodiversity Data Centre records. Accessed: 13<sup>th</sup> October 2021.

<sup>2</sup> Image: NBDC Maps database



**Invasive species recorded within the G90 and G91 hectads<sup>1</sup> relevant to the proposed shared community facilities project at Acres Lake boardwalk.**

\* Species subject to restrictions (Third Schedule) under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011

<b>Hectad G90</b>	
<b>Common Name</b>	<b>Scientific Name</b>
Greylag Goose *	<i>Anser anser</i>
Roach *	<i>Rutilus rutilus</i>
Arthurdendyus triangulatus	<i>Arthurdendyus triangulatus</i>
Black Currant	<i>Ribes nigrum</i>
Canadian Waterweed *	<i>Elodea canadensis</i>
Cherry Laurel	<i>Prunus laurocerasus</i>
Japanese Knotweed *	<i>Fallopia japonica</i>
Rhododendron ponticum *	<i>Rhododendron ponticum</i>
Sycamore	<i>Acer pseudoplatanus</i>
Corbicula fluminea *	<i>Corbicula fluminea</i>
Jenkins' Spire Snail	<i>Potamopyrgus antipodarum</i>
American Mink *	<i>Mustela vison</i>
Brown Rat *	<i>Rattus norvegicus</i>
Eastern Grey Squirrel *	<i>Sciurus carolinensis</i>
European Rabbit	<i>Oryctolagus cuniculus</i>
Fallow Deer *	<i>Dama dama</i>
House Mouse	<i>Mus musculus</i>

<b>Hectad G91</b>	
<b>Common Name</b>	<b>Scientific Name</b>
Roach *	<i>Rutilus rutilus</i>
Arthurdendyus triangulatus	<i>Arthurdendyus triangulatus</i>
Black Currant	<i>Ribes nigrum</i>
Butterfly-bush	<i>Buddleja davidii</i>
Canadian Waterweed *	<i>Elodea canadensis</i>
Cherry Laurel	<i>Prunus laurocerasus</i>
Himalayan Honeysuckle	<i>Leycesteria formosa</i>
Indian Balsam *	<i>Impatiens glandulifera</i>
Japanese Knotweed *	<i>Fallopia japonica</i>
Sycamore	<i>Acer pseudoplatanus</i>
Budapest Slug	<i>Tandonia budapestensis</i>
Common Garden Snail	<i>Cornu aspersum</i>
Jenkins' Spire Snail	<i>Potamopyrgus antipodarum</i>
American Mink *	<i>Mustela vison</i>
Eastern Grey Squirrel *	<i>Sciurus carolinensis</i>
Fallow Deer *	<i>Dama dama</i>
Roach	<i>Rutilus rutilus</i>

**Rare and/or protected species know to occur within the G90 and G91 hectads<sup>1</sup> containing the proposed shared community facilities project at Acres Lake boardwalk (arranged by hectad, then taxonomic group).**

Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
amphibian	<i>Common Frog</i>	<i>Rana temporaria</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
amphibian	<i>Smooth Newt</i>	<i>Lissotriton vulgaris</i>	Protected Species: Wildlife Acts
bird	<i>Barn Owl</i>	<i>Tyto alba</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Barn Swallow</i>	<i>Hirundo rustica</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Black-headed Gull</i>	<i>Larus ridibundus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Common Coot</i>	<i>Fulica atra</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Goldeneye</i>	<i>Bucephala clangula</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Grasshopper Warbler</i>	<i>Locustella naevia</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Kestrel</i>	<i>Falco tinnunculus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Kingfisher</i>	<i>Alcedo atthis</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Linnet</i>	<i>Carduelis cannabina</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Pheasant</i>	<i>Phasianus colchicus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species

<b>Hectad G90</b>			
<b>Taxonomic group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Designation</b>
bird	<i>Common Pochard</i>	<i>Aythya ferina</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Redshank</i>	<i>Tringa totanus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Common Sandpiper</i>	<i>Actitis hypoleucos</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Snipe</i>	<i>Gallinago gallinago</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Starling</i>	<i>Sturnus vulgaris</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Swift</i>	<i>Apus apus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Tern</i>	<i>Sterna hirundo</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Common Wood Pigeon</i>	<i>Columba palumbus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	<i>Corn Crane</i>	<i>Crex crex</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Eurasian Curlew</i>	<i>Numenius arquata</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Eurasian Teal</i>	<i>Anas crecca</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species



Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
			Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Eurasian Wigeon</i>	<i>Anas penelope</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Eurasian Woodcock</i>	<i>Scolopax rusticola</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Great Cormorant</i>	<i>Phalacrocorax carbo</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Great Crested Grebe</i>	<i>Podiceps cristatus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Greater White-fronted Goose</i>	<i>Anser albifrons</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Grey Partridge</i>	<i>Perdix perdix</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Hen Harrier</i>	<i>Circus cyaneus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>House Martin</i>	<i>Delichon urbicum</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>House Sparrow</i>	<i>Passer domesticus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
bird	<i>Lesser Black-backed Gull</i>	<i>Larus fuscus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Little Grebe</i>	<i>Tachybaptus ruficollis</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Mallard</i>	<i>Anas platyrhynchos</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	<i>Merlin</i>	<i>Falco columbarius</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Mew Gull</i>	<i>Larus canus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Mute Swan</i>	<i>Cygnus olor</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Northern Lapwing</i>	<i>Vanellus vanellus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Northern Pintail</i>	<i>Anas acuta</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Northern Shoveler</i>	<i>Anas clypeata</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	<i>Red-breasted Merganser</i>	<i>Mergus serrator</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species
bird	<i>Sand Martin</i>	<i>Riparia riparia</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Sky Lark</i>	<i>Alauda arvensis</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern

Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
			Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Spotted Flycatcher</i>	<i>Muscicapa striata</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Tufted Duck</i>	<i>Aythya fuligula</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Water Rail</i>	<i>Rallus aquaticus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Whooper Swan</i>	<i>Cygnus cygnus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	<i>Yellowhammer</i>	<i>Emberiza citrinella</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bony fish (Actinopterygii)	<i>European Eel</i>	<i>Anguilla anguilla</i>	Threatened Species: OSPAR Convention    Threatened Species: Critically Endangered
crustacean	<i>Freshwater White-clawed Crayfish</i>	<i>Austropotamobius pallipes</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
insect - beetle (Coleoptera)	<i>Bagous lutosus</i>	<i>Abagous</i>	Threatened Species: Data deficient
insect - beetle (Coleoptera)	<i>Chaetarthria seminulum</i>	<i>Chaetarthria seminulum</i>	Threatened Species: Data deficient
insect - beetle (Coleoptera)	<i>Dytiscus circumcinctus</i>	<i>Dytiscus circumcinctus</i>	Threatened Species: Near threatened
insect - beetle (Coleoptera)	<i>Haliplus variegatus</i>	<i>Liaphlus</i>	Threatened Species: Vulnerable
insect - butterfly	<i>Marsh Fritillary</i>	<i>Euphydryas aurinia</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Threatened Species: Vulnerable
insect - dragonfly (Odonata)	<i>Irish Damselfly</i>	<i>Coenagrion lunulatum</i>	Threatened Species: Vulnerable
insect - dragonfly (Odonata)	<i>Scarce Emerald Damselfly</i>	<i>Lestes dryas</i>	Threatened Species: Near threatened
insect - hymenopteran	<i>Moss Carder- bee muscorum)</i>	<i>Bombus (Thoracombus</i>	Threatened Species: Near threatened
liverwort	<i>Bifid Crestwort</i>	<i>Lophocolea bidentata</i>	Threatened Species: Least concern
liverwort	<i>Bog-moss Flapwort</i>	<i>Odontoschisma sphagni</i>	Threatened Species: Least concern



<b>Hectad G90</b>			
<b>Taxonomic group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Designation</b>
liverwort	<i>Bristly Fingerwort</i>	<i>Kurzia pauciflora</i>	Threatened Species: Least concern
liverwort	<i>Cephalozia macrostachya</i> var. <i>macrostachya</i>	<i>Cephalozia macrostachya</i> var. <i>macrostachya</i>	Threatened Species: Least concern
liverwort	<i>Chain Pincerwort</i>	<i>Cephalozia catenulata</i>	Threatened Species: Least concern
liverwort	<i>Chiloscyphus polyanthos</i>	<i>Chiloscyphus polyanthos</i>	Threatened Species: Least concern
liverwort	<i>Common Crystalwort</i>	<i>Riccia sorocarpa</i>	Threatened Species: Least concern
liverwort	<i>Common Pouchwort</i>	<i>Calypogeia fissa</i>	Threatened Species: Least concern
liverwort	<i>Dilated Scalewort</i>	<i>Frullania dilatata</i>	Threatened Species: Least concern
liverwort	<i>Even Scalewort</i>	<i>Radula complanata</i>	Threatened Species: Least concern
liverwort	<i>Fairy Beads</i>	<i>Microlejeunea ulicina</i>	Threatened Species: Least concern
liverwort	<i>Forcipated Pincerwort</i>	<i>Cephalozia connivens</i>	Threatened Species: Least concern
liverwort	<i>Forked Veilwort</i>	<i>Metzgeria furcata</i>	Threatened Species: Least concern
liverwort	<i>Glaucous Crystalwort</i>	<i>Riccia glauca</i>	Threatened Species: Least concern
liverwort	<i>Greasewort</i>	<i>Aneura pinguis</i>	Threatened Species: Least concern
liverwort	<i>Grove Earwort</i>	<i>Scapania nemorea</i>	Threatened Species: Least concern
liverwort	<i>Jagged Germanderwort</i>	<i>Riccardia chamedryfolia</i>	Threatened Species: Least concern
liverwort	<i>Ladder Flapwort</i>	<i>Nardia scalaris</i>	Threatened Species: Least concern
liverwort	<i>Lesser Featherwort</i>	<i>Plagiochila porelloides</i>	Threatened Species: Least concern
liverwort	<i>Overleaf Pellia</i>	<i>Pellia epiphylla</i>	Threatened Species: Least concern
liverwort	<i>Purple Spoonwort</i>	<i>Pleurozia purpurea</i>	Threatened Species: Least concern
liverwort	<i>Tamarisk Scalewort</i>	<i>Frullania tamarisci</i>	Threatened Species: Least concern
liverwort	<i>Taylor's Flapwort</i>	<i>Mylia taylorii</i>	Threatened Species: Least concern
liverwort	<i>Two-horned Pincerwort</i>	<i>Cephalozia bicuspidata</i>	Threatened Species: Least concern
liverwort	<i>White Earwort</i>	<i>Diplophyllum albicans</i>	Threatened Species: Least concern
mollusc	<i>Common Whorl Snail pygmaea</i> )	<i>Vertigo (Vertigo</i>	Threatened Species: Near threatened
mollusc	<i>Desmoulin's Whorl Snail moulinsiana</i> )	<i>Vertigo (Vertigo</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: Wildlife Acts    Threatened Species: Endangered
mollusc	<i>Globular Pea Mussel</i>	<i>Pisidium hibernicum</i>	Threatened Species: Near threatened
mollusc	<i>Lake Orb Mussel</i>	<i>Musculium lacustre</i>	Threatened Species: Vulnerable
mollusc	<i>Lilljeborg's Whorl Snail lilljeborgi</i> )	<i>Vertigo (Vertigo</i>	Threatened Species: Vulnerable

Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
mollusc	<i>Marsh Whorl Snail</i> <i>antivertigo</i> )	<i>Vertigo</i> ( <i>Vertigo</i> )	Threatened Species: Vulnerable
mollusc	<i>Pisidium pulchellum</i>	<i>Pisidium pulchellum</i>	Threatened Species: Endangered
mollusc	<i>Smooth Grass Snail</i>	<i>Vallonia pulchella</i>	Threatened Species: Vulnerable
mollusc	<i>Tree Snail</i> <i>perversa</i> )	<i>Balea</i> ( <i>Balea</i> )	Threatened Species: Vulnerable
mollusc	<i>Whirlpool Ramshorn</i> <i>vortex</i> )	<i>Anisus</i> ( <i>Disculifer</i> )	Threatened Species: Vulnerable
moss	<i>Aloe Haircap</i>	<i>Pogonatum aloides</i>	Threatened Species: Least concern
moss	<i>Austin's Bog-moss</i>	<i>Sphagnum austinii</i>	Threatened Species: Least concern
moss	<i>Big Shaggy-moss</i>	<i>Rhytidiadelphus triquetrus</i>	Threatened Species: Least concern
moss	<i>Broom Fork-moss</i>	<i>Dicranum scoparium</i>	Threatened Species: Least concern
moss	<i>Capillary Thread-moss</i>	<i>Bryum capillare</i>	Threatened Species: Least concern
moss	<i>Common Feather-moss</i>	<i>Eurhynchium praelongum</i>	Threatened Species: Least concern
moss	<i>Common Pottia</i>	<i>Tortula truncata</i>	Threatened Species: Least concern
moss	<i>Common Striated Feather-moss</i>	<i>Eurhynchium striatum</i>	Threatened Species: Least concern
moss	<i>Common Tamarisk-moss</i>	<i>Thuidium tamariscinum</i>	Threatened Species: Least concern
moss	<i>Cow-horn Bog-moss</i>	<i>Sphagnum denticulatum</i>	Threatened Species: Least concern
moss	<i>Curve-leaved Ditrichum</i>	<i>Ditrichum heteromallum</i>	Threatened Species: Least concern
moss	<i>Cylindric Beard-moss</i>	<i>Didymodon insulanus</i>	Threatened Species: Least concern
moss	<i>Dwarf Neckera</i>	<i>Neckera pumila</i>	Threatened Species: Least concern
moss	<i>Feathery Bog-moss</i>	<i>Sphagnum cuspidatum</i>	Threatened Species: Least concern
moss	<i>Flat Neckera</i>	<i>Neckera complanata</i>	Threatened Species: Least concern
moss	<i>Fox-tail Feather-moss</i>	<i>Thamnobryum alopecurum</i>	Threatened Species: Least concern
moss	<i>Glittering Wood-moss</i>	<i>Hylocomium splendens</i>	Threatened Species: Least concern
moss	<i>Golden Bog-moss</i>	<i>Sphagnum pulchrum</i>	Threatened Species: Least concern
moss	<i>Greater Fork-moss</i>	<i>Dicranum majus</i>	Threatened Species: Least concern
moss	<i>Hair-pointed Feather-moss</i>	<i>Cirriphyllum piliferum</i>	Threatened Species: Least concern
moss	<i>Hart's-tongue Thyme-moss</i>	<i>Plagiomnium undulatum</i>	Threatened Species: Least concern
moss	<i>Heart-leaved Spear-moss</i>	<i>Calliargon cordifolium</i>	Threatened Species: Least concern
moss	<i>Heath Plait-moss</i>	<i>Hypnum jutlandicum</i>	Threatened Species: Least concern

<b>Hectad G90</b>			
<b>Taxonomic group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Designation</b>
moss	<i>Heath Star Moss</i>	<i>Campylopus introflexus</i>	Threatened Species: Least concern
moss	<i>Isothecium myosuroides var. myosuroides</i>	<i>Isothecium myosuroides var. myosuroides</i>	Threatened Species: Least concern
moss	<i>Juniper Haircap</i>	<i>Polytrichum juniperinum</i>	Threatened Species: Least concern
moss	<i>Larger Mouse-tail Moss</i>	<i>Isothecium alopecuroides</i>	Threatened Species: Least concern
moss	<i>Magellanic Bog-moss</i>	<i>Sphagnum magellanicum</i>	Threatened Species: Least concern
moss	<i>Neat Feather-moss</i>	<i>Scleropodium purum</i>	Threatened Species: Least concern
moss	<i>Nodding Thread-moss</i>	<i>Pohlia nutans</i>	Threatened Species: Least concern
moss	<i>Papillose Bog-moss</i>	<i>Sphagnum papillosum</i>	Threatened Species: Least concern
moss	<i>Pointed Spear-moss</i>	<i>Calliergonella cuspidata</i>	Threatened Species: Least concern
moss	<i>Redshank</i>	<i>Ceratodon purpureus</i>	Threatened Species: Least concern
moss	<i>River Feather-moss</i>	<i>Brachythecium rivulare</i>	Threatened Species: Least concern
moss	<i>Rusty Bog-moss</i>	<i>Sphagnum fuscum</i>	Threatened Species: Least concern
moss	<i>Shining Hookeria</i>	<i>Hookeria lucens</i>	Threatened Species: Least concern
moss	<i>Silky Wall Feather-moss</i>	<i>Homalothecium sericeum</i>	Threatened Species: Least concern
moss	<i>Soft Bog-moss</i>	<i>Sphagnum tenellum</i>	Threatened Species: Least concern
moss	<i>Springy Turf-moss</i>	<i>Rhytidiadelphus squarrosus</i>	Threatened Species: Least concern
moss	<i>Supine Plait-moss</i>	<i>Hypnum cupressiforme var. resupinatum</i>	Threatened Species: Least concern
moss	<i>Tree-moss</i>	<i>Climacium dendroides</i>	Threatened Species: Least concern
moss	<i>Urn Haircap</i>	<i>Pogonatum urnigerum</i>	Threatened Species: Least concern
moss	<i>Yellow Fringe-moss</i>	<i>Racomitrium aciculare</i>	Threatened Species: Least concern
terrestrial mammal	<i>Daubenton's Bat</i>	<i>Myotis daubentonii</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
terrestrial mammal	<i>Eurasian Badger</i>	<i>Meles meles</i>	Protected Species: Wildlife Acts
terrestrial mammal	<i>Eurasian Pygmy Shrew</i>	<i>Sorex minutus</i>	Protected Species: Wildlife Acts
terrestrial mammal	<i>Eurasian Red Squirrel</i>	<i>Sciurus vulgaris</i>	Protected Species: Wildlife Acts
terrestrial mammal	<i>European Otter</i>	<i>Lutra lutra</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts



Hectad G90			
Taxonomic group	Common Name	Scientific Name	Designation
terrestrial mammal	<i>Natterer's Bat</i>	<i>Myotis nattereri</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
terrestrial mammal	<i>Pine Marten</i>	<i>Martes martes</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
terrestrial mammal	<i>Red Deer</i>	<i>Cervus elaphus</i>	Protected Species: Wildlife Acts
terrestrial mammal	<i>West European Hedgehog</i>	<i>Erinaceus europaeus</i>	Protected Species: Wildlife Acts

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
amphibian	Common Frog	<i>Rana temporaria</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
bird	Barn Swallow	<i>Hirundo rustica</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Black-headed Gull	<i>Larus ridibundus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Common Coot	<i>Fulica atra</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Goldeneye	<i>Bucephala clangula</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Grasshopper Warbler	<i>Locustella naevia</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Greenshank	<i>Tringa nebularia</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Kestrel	<i>Falco tinnunculus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Kingfisher	<i>Alcedo atthis</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

<b>Hectad G91</b>			
<b>Taxonomic group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Designation</b>
bird	Common Linnet	<i>Carduelis cannabina</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Pheasant	<i>Phasianus colchicus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Common Redshank	<i>Tringa totanus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Common Sandpiper	<i>Actitis hypoleucos</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Snipe	<i>Gallinago gallinago</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Starling	<i>Sturnus vulgaris</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Swift	<i>Apus apus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Tern	<i>Sterna hirundo</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Wood Pigeon	<i>Columba palumbus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Corn Crake	<i>Crex crex</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Eurasian Curlew	<i>Numenius arquata</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Eurasian Oystercatcher	<i>Haematopus ostralegus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
			Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Teal	<i>Anas crecca</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Wigeon	<i>Anas penelope</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Woodcock	<i>Scolopax rusticola</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	European Golden Plover	<i>Pluvialis apricaria</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Great Black-backed Gull	<i>Larus marinus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Great Cormorant	<i>Phalacrocorax carbo</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Great Crested Grebe	<i>Podiceps cristatus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Hen Harrier	<i>Circus cyaneus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	House Martin	<i>Delichon urbicum</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	House Sparrow	<i>Passer domesticus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern



Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
			Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Lesser Black-backed Gull	<i>Larus fuscus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Little Grebe	<i>Tachybaptus ruficollis</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Mallard	<i>Anas platyrhynchos</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Mew Gull	<i>Larus canus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Mute Swan	<i>Cygnus olor</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Northern Lapwing	<i>Vanellus vanellus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Northern Wheatear	<i>Oenanthe oenanthe</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Red Grouse	<i>Lagopus lagopus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Red-breasted Merganser	<i>Mergus serrator</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species
bird	Sand Martin	<i>Riparia riparia</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Sky Lark	<i>Alauda arvensis</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Spotted Flycatcher	<i>Muscicapa striata</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Tufted Duck	<i>Aythya fuligula</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
			Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Water Rail	<i>Rallus aquaticus</i>	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Whooper Swan	<i>Cygnus cygnus</i>	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bony fish (Actinopterygii)	European Eel	<i>Anguilla anguilla</i>	Threatened Species: OSPAR Convention    Threatened Species: Critically Endangered
bony fish (Actinopterygii)	Pollan	<i>Coregonus autumnalis</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Threatened Species: Vulnerable
crustacean	Freshwater White-clawed Crayfish	<i>Austropotamobius pallipes</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
insect - butterfly	Large Heath	<i>Coenonympha tullia</i>	Threatened Species: Vulnerable
insect - butterfly	Marsh Fritillary	<i>Euphydryas aurinia</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Threatened Species: Vulnerable
insect - dragonfly (Odonata)	Irish Damselfly	<i>Coenagrion lunulatum</i>	Threatened Species: Vulnerable
insect - hymenopteran	Moss Carder- bee ( <i>muscorum</i> )	<i>Bombus (Thoracombus</i>	Threatened Species: Near threatened
liverwort	Anomalous Flapwort	<i>Mylia anomala</i>	Threatened Species: Least concern
liverwort	Bifid Crestwort	<i>Lophocolea bidentata</i>	Threatened Species: Least concern
liverwort	Bog-moss Flapwort	<i>Odontoschisma sphagni</i>	Threatened Species: Least concern
liverwort	Bristly Fingerwort	<i>Kurzia pauciflora</i>	Threatened Species: Least concern
liverwort	Chiloscyphus polyanthos	<i>Chiloscyphus polyanthos</i>	Threatened Species: Least concern
liverwort	Comb Notchwort	<i>Anastrophyllum minutum</i>	Threatened Species: Least concern
liverwort	Common Pouchwort	<i>Calypogeia fissa</i>	Threatened Species: Least concern
liverwort	Creeping Fingerwort	<i>Lepidozia reptans</i>	Threatened Species: Least concern
liverwort	Crenulated Flapwort	<i>Jungermannia gracillima</i>	Threatened Species: Least concern
liverwort	Crescent-cup Liverwort	<i>Lunularia cruciata</i>	Threatened Species: Least concern
liverwort	Deceptive Featherwort	<i>Adelanthus decipiens</i>	Threatened Species: Least concern

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
liverwort	Dilated Scalewort	<i>Frullania dilatata</i>	Threatened Species: Least concern
liverwort	Endive Pellia	<i>Pellia endiviifolia</i>	Threatened Species: Least concern
liverwort	Even Scalewort	<i>Radula complanata</i>	Threatened Species: Least concern
liverwort	Fairy Beads	<i>Microlejeunea ulicina</i>	Threatened Species: Least concern
liverwort	Forcipated Pincerwort	<i>Cephalozia connivens</i>	Threatened Species: Least concern
liverwort	Forked Veilwort	<i>Metzgeria furcata</i>	Threatened Species: Least concern
liverwort	Greater Featherwort	<i>Plagiochila asplenioides</i>	Threatened Species: Least concern
liverwort	Greater Whipwort	<i>Bazzania trilobata</i>	Threatened Species: Least concern
liverwort	Hampe's Threadwort	<i>Cephaloziella hampeana</i>	Threatened Species: Least concern
liverwort	Heath Earwort	<i>Scapania irrigua</i>	Threatened Species: Least concern
liverwort	Heath Fingerwort	<i>Kurzia trichoclados</i>	Threatened Species: Least concern
liverwort	Hill Notchwort	<i>Lophozia sudetica</i>	Threatened Species: Least concern
liverwort	Inflated Notchwort	<i>Gymnocolea inflata</i>	Threatened Species: Least concern
liverwort	Jagged Notchwort	<i>Lophozia incisa</i>	Threatened Species: Least concern
liverwort	Ladder Flapwort	<i>Nardia scalaris</i>	Threatened Species: Least concern
liverwort	Lesser Featherwort	<i>Plagiochila porelloides</i>	Threatened Species: Least concern
liverwort	Marchantia polymorpha subsp. polymorpha	<i>Marchantia polymorpha subsp. polymorpha</i>	Threatened Species: Least concern
liverwort	Marsupella emarginata var. emarginata	<i>Marsupella emarginata var. emarginata</i>	Threatened Species: Least concern
liverwort	Matchstick Flapwort	<i>Odontoschisma denudatum</i>	Threatened Species: Least concern
liverwort	Micheli's Least Pouncewort	<i>Lejeunea cavifolia</i>	Threatened Species: Least concern
liverwort	Mueller's Pouchwort	<i>Calypogeia muelleriana</i>	Threatened Species: Least concern
liverwort	Notched Pouchwort	<i>Calypogeia arguta</i>	Threatened Species: Least concern
liverwort	Overleaf Pellia	<i>Pellia epiphylla</i>	Threatened Species: Least concern
liverwort	Pearl Pouncewort	<i>Lejeunea patens</i>	Threatened Species: Least concern
liverwort	Prickly Featherwort	<i>Plagiochila spinulosa</i>	Threatened Species: Least concern
liverwort	Rock Fingerwort	<i>Lepidozia cupressina</i>	Threatened Species: Least concern
liverwort	Rough Earwort	<i>Scapania aspera</i>	Threatened Species: Least concern
liverwort	Sea Scalewort	<i>Frullania teneriffae</i>	Threatened Species: Least concern
liverwort	Shady Earwort	<i>Scapania umbrosa</i>	Threatened Species: Least concern
liverwort	Straggling Pouchwort	<i>Saccogyna viticulosa</i>	Threatened Species: Least concern
liverwort	Tamarisk Scalewort	<i>Frullania tamarisci</i>	Threatened Species: Least concern



Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
liverwort	Taylor's Flapwort	<i>Mylia taylorii</i>	Threatened Species: Least concern
liverwort	Transparent Flapwort	<i>Jungermannia hyalina</i>	Threatened Species: Least concern
liverwort	Trunk Pawwort	<i>Barbilophozia attenuata</i>	Threatened Species: Least concern
liverwort	Tumid Notchwort	<i>Lophozia ventricosa</i>	Threatened Species: Least concern
liverwort	Two-horned Pincerwort	<i>Cephalozia bicuspidata</i>	Threatened Species: Least concern
liverwort	Water Earwort	<i>Scapania undulata</i>	Threatened Species: Least concern
liverwort	Western Earwort	<i>Scapania gracilis</i>	Threatened Species: Least concern
liverwort	Western Pouncewort	<i>Lejeunea lamacerina</i>	Threatened Species: Least concern
liverwort	White Earwort	<i>Diplophyllum albicans</i>	Threatened Species: Least concern
mollusc	Common Whorl Snail (pygmaea)	<i>Vertigo (Vertigo)</i>	Threatened Species: Near threatened
mollusc	Striated Whorl Snail (substriata)	<i>Vertigo (Vertigo)</i>	Threatened Species: Near threatened
mollusc	Whirlpool Ramshorn (vortex)	<i>Anisus (Disculifer)</i>	Threatened Species: Vulnerable
moss	Aloe Haircap	<i>Pogonatum aloides</i>	Threatened Species: Least concern
moss	Andreaea rothii subsp. falcata	<i>Andreaea rothii subsp. falcata</i>	Threatened Species: Least concern
moss	Atrichum undulatum var. undulatum	<i>Atrichum undulatum var. undulatum</i>	Threatened Species: Least concern
moss	Big Shaggy-moss	<i>Rhytidiadelphus triquetrus</i>	Threatened Species: Least concern
moss	Blunt Feather-moss	<i>Homalia trichomanoides</i>	Threatened Species: Least concern
moss	Blunt-bud Thread-moss	<i>Pohlia bulbifera</i>	Threatened Species: Least concern
moss	Bog Groove-moss	<i>Aulacomnium palustre</i>	Threatened Species: Least concern
moss	Bristly Fringe-moss	<i>Racomitrium heterostichum</i>	Threatened Species: Least concern
moss	Bristly Haircap	<i>Polytrichum piliferum</i>	Threatened Species: Least concern
moss	Brittle Swan-neck Moss	<i>Campylopus fragilis</i>	Threatened Species: Least concern
moss	Broom Fork-moss	<i>Dicranum scoparium</i>	Threatened Species: Least concern
moss	Bruch's Pincushion	<i>Ulota bruchii</i>	Threatened Species: Least concern
moss	Bryum dichotomum	<i>Bryum dichotomum</i>	Threatened Species: Least concern
moss	Capillary Thread-moss	<i>Bryum capillare</i>	Threatened Species: Least concern
moss	Clay Earth-moss	<i>Archidium alternifolium</i>	Threatened Species: Least concern
moss	Common Bladder-moss	<i>Physcomitrium pyriforme</i>	Threatened Species: Least concern

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
moss	Common Cord-moss	<i>Funaria hygrometrica</i>	Threatened Species: Least concern
moss	Common Feather-moss	<i>Eurhynchium praelongum</i>	Threatened Species: Least concern
moss	Common Pincushion	<i>Dicranoweisia cirrata</i>	Threatened Species: Least concern
moss	Common Striated Feather-moss	<i>Eurhynchium striatum</i>	Threatened Species: Least concern
moss	Common Tamarisk-moss	<i>Thuidium tamariscinum</i>	Threatened Species: Least concern
moss	Compact Bog-moss	<i>Sphagnum compactum</i>	Threatened Species: Least concern
moss	Cow-horn Bog-moss	<i>Sphagnum denticulatum</i>	Threatened Species: Least concern
moss	Crisped Pincushion	<i>Ulota crispa</i>	Threatened Species: Least concern
moss	Cylindric Beard-moss	<i>Didymodon insulanus</i>	Threatened Species: Least concern
moss	Dotted Thyme-moss	<i>Rhizomnium punctatum</i>	Threatened Species: Least concern
moss	Drab Brook-moss	<i>Hygrohypnum luridum</i>	Threatened Species: Least concern
moss	Dusky Fork-moss	<i>Dicranum fuscescens</i>	Threatened Species: Least concern
moss	Dwarf Neckera	<i>Neckera pumila</i>	Threatened Species: Least concern
moss	Dwarf Swan-neck Moss	<i>Campylopus pyriformis</i>	Threatened Species: Least concern
moss	Elegant Bristle-moss	<i>Orthotrichum pulchellum</i>	Threatened Species: Least concern
moss	Elegant Silk-moss	<i>Pseudotaxiphyllum elegans</i>	Threatened Species: Least concern
moss	Fallacious Beard-moss	<i>Didymodon fallax</i>	Threatened Species: Least concern
moss	Feathery Bog-moss	<i>Sphagnum cuspidatum</i>	Threatened Species: Least concern
moss	Felted Thyme-moss	<i>Rhizomnium pseudopunctatum</i>	Threatened Species: Near threatened
moss	Fern-leaved Hook-moss	<i>Cratoneuron filicinum</i>	Threatened Species: Least concern
moss	Flagellate Feather-moss	<i>Hycomium armoricum</i>	Threatened Species: Least concern
moss	Flag-moss	<i>Discelium nudum</i>	Threatened Species: Near threatened
moss	Flat Neckera	<i>Neckera complanata</i>	Threatened Species: Least concern
moss	Flat-topped Bog-moss	<i>Sphagnum fallax</i>	Threatened Species: Least concern
moss	Floating Hook-moss	<i>Warnstorfia fluitans</i>	Threatened Species: Least concern
moss	Fountain Apple-moss	<i>Philonotis fontana</i>	Threatened Species: Least concern
moss	Fountain Smoothcap	<i>Atrichum crispum</i>	Threatened Species: Not Evaluated
moss	Fox-tail Feather-moss	<i>Thamnobryum alopecurum</i>	Threatened Species: Least concern
moss	Fringed Bog-moss	<i>Sphagnum fimbriatum</i>	Threatened Species: Least concern

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
moss	Frizzled Crisp-moss	<i>Tortella tortuosa</i>	Threatened Species: Least concern
moss	Frizzled Pincushion	<i>Ulotia phyllantha</i>	Threatened Species: Least concern
moss	Glittering Wood-moss	<i>Hylocomium splendens</i>	Threatened Species: Least concern
moss	Golden-head Moss	<i>Breutelia chrysocoma</i>	Threatened Species: Least concern
moss	Great Plait-moss	<i>Hypnum lacunosum var. lacunosum</i>	Threatened Species: Least concern
moss	Greater Water-moss	<i>Fontinalis antipyretica var. antipyretica</i>	Threatened Species: Least concern
moss	Green Mountain Fringe-moss	<i>Racomitrium fasciculare</i>	Threatened Species: Least concern
moss	Grey-cushioned Grimmia	<i>Grimmia pulvinata</i>	Threatened Species: Least concern
moss	Hart's-tongue Thyme-moss	<i>Plagiomnium undulatum</i>	Threatened Species: Least concern
moss	Heath Plait-moss	<i>Hypnum jutlandicum</i>	Threatened Species: Least concern
moss	Heath Star Moss	<i>Campylopus introflexus</i>	Threatened Species: Least concern
moss	Isothecium myosuroides var. myosuroides	<i>Isothecium myosuroides var. myosuroides</i>	Threatened Species: Least concern
moss	Juniper Haircap	<i>Polytrichum juniperinum</i>	Threatened Species: Least concern
moss	Kneiff's Hook-moss	<i>Drepanocladus aduncus</i>	Threatened Species: Least concern
moss	Large White-moss	<i>Leucobryum glaucum</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Threatened Species: Least concern
moss	Larger Mouse-tail Moss	<i>Isothecium alopecuroides</i>	Threatened Species: Least concern
moss	Lateral Cryphaea	<i>Cryphaea heteromalla</i>	Threatened Species: Least concern
moss	Lesser Bird's-claw Beard-moss	<i>Barbula convoluta</i>	Threatened Species: Least concern
moss	Lesser Cow-horn Bog-moss	<i>Sphagnum inundatum</i>	Threatened Species: Least concern
moss	Little Shaggy-moss	<i>Rhytidiadelphus loreus</i>	Threatened Species: Least concern
moss	Long-shanked Pincushion	<i>Ptychomitrium polyphyllum</i>	Threatened Species: Least concern
moss	Mamillate Plait-moss	<i>Hypnum andoi</i>	Threatened Species: Least concern
moss	Narrow-leaved Fringe-moss	<i>Racomitrium aquaticum</i>	Threatened Species: Least concern
moss	Neat Feather-moss	<i>Scleropodium purum</i>	Threatened Species: Least concern
moss	Nicholson's Beard-moss	<i>Didymodon nicholsonii</i>	Threatened Species: Least concern



Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
moss	Nodding Thread-moss	<i>Pohlia nutans</i>	Threatened Species: Least concern
moss	Olive Beard-moss	<i>Didymodon tophaceus</i>	Threatened Species: Least concern
moss	Pale Thread-moss	<i>Bryum pallens</i>	Threatened Species: Least concern
moss	Papillose Bog-moss	<i>Sphagnum papillosum</i>	Threatened Species: Least concern
moss	Pellucid Four-tooth Moss	<i>Tetraphis pellucida</i>	Threatened Species: Least concern
moss	Pink-fruited Thread-moss	<i>Pohlia melanodon</i>	Threatened Species: Least concern
moss	Pointed Spear-moss	<i>Calliergonella cuspidata</i>	Threatened Species: Least concern
moss	Polytrichum commune var. commune	<i>Polytrichum commune var. commune</i>	Threatened Species: Least concern
moss	Rambling Tail-moss	<i>Anomodon viticulosus</i>	Threatened Species: Least concern
moss	Red Beard-moss	<i>Bryoerythrophyllum recurvirostrum</i>	Threatened Species: Least concern
moss	Redshank	<i>Ceratodon purpureus</i>	Threatened Species: Least concern
moss	Red-stemmed Feather-moss	<i>Pleurozium schreberi</i>	Threatened Species: Least concern
moss	River Feather-moss	<i>Brachythecium rivulare</i>	Threatened Species: Least concern
moss	Rock Pocket-moss	<i>Fissidens dubius</i>	Threatened Species: Least concern
moss	Rough-stalked Feather-moss	<i>Brachythecium rutabulum</i>	Threatened Species: Least concern
moss	Rufous Forklet-moss	<i>Dicranella rufescens</i>	Threatened Species: Least concern
moss	Rusty Feather-moss	<i>Sciuro-hypnum plumosum</i>	Threatened Species: Least concern
moss	Rusty Swan-neck Moss	<i>Campylopus flexuosus</i>	Threatened Species: Least concern
moss	Scott's Fork-moss	<i>Dicranum scottianum</i>	Threatened Species: Least concern
moss	Sessile Grimmia	<i>Schistidium apocarpum</i>	Threatened Species: Least concern
moss	Shaw's Bristle-moss	<i>Orthotrichum striatum</i>	Threatened Species: Least concern
moss	Shining Hookeria	<i>Hookeria lucens</i>	Threatened Species: Least concern
moss	Silky Forklet-moss	<i>Dicranella heteromalla</i>	Threatened Species: Least concern
moss	Silky Wall Feather-moss	<i>Homalothecium sericeum</i>	Threatened Species: Least concern
moss	Silver-moss	<i>Bryum argenteum</i>	Threatened Species: Least concern
moss	Slender Ditrichum	<i>Ditrichum gracile</i>	Threatened Species: Least concern
moss	Slender Fringe-moss	<i>Racomitrium sudeticum</i>	Threatened Species: Least concern
moss	Smaller Lattice-moss	<i>Cinclidotus fontinaloides</i>	Threatened Species: Least concern

Hectad G91			
Taxonomic group	Common Name	Scientific Name	Designation
moss	Soft Bog-moss	<i>Sphagnum tenellum</i>	Threatened Species: Least concern
moss	Sphagnum subnitens var. subnitens	<i>Sphagnum subnitens</i> var. <i>subnitens</i>	Threatened Species: Least concern
moss	Spiral Extinguisher-moss	<i>Encalypta streptocarpa</i>	Threatened Species: Least concern
moss	Springy Turf-moss	<i>Rhytidiadelphus squarrosus</i>	Threatened Species: Least concern
moss	Supine Plait-moss	<i>Hypnum cupressiforme</i> var. <i>resupinatum</i>	Threatened Species: Least concern
moss	Swan's-neck Thyme-moss	<i>Mnium hornum</i>	Threatened Species: Least concern
moss	Swartz's Feather-moss	<i>Oxyrrhynchium hians</i>	Threatened Species: Least concern
moss	Tender Feather-moss	<i>Rhynchostegiella tenella</i>	Threatened Species: Least concern
moss	Transparent Fork-moss	<i>Dichodontium pellucidum</i>	Threatened Species: Least concern
moss	Urn Haircap	<i>Pogonatum urnigerum</i>	Threatened Species: Least concern
moss	Variable Crisp-moss	<i>Trichostomum brachydontium</i>	Threatened Species: Least concern
moss	Variable Forklet-moss	<i>Dicranella varia</i>	Threatened Species: Least concern
moss	Wall Screw-moss	<i>Tortula muralis</i>	Threatened Species: Least concern
moss	Waved Silk-moss	<i>Plagiothecium undulatum</i>	Threatened Species: Least concern
moss	Weissia controversa var. controversa	<i>Weissia controversa</i> var. <i>controversa</i>	Threatened Species: Least concern
moss	Welsh Pocket-moss	<i>Fissidens celticus</i>	Threatened Species: Least concern
moss	Woodsy Silk-moss	<i>Plagiothecium nemorale</i>	Threatened Species: Least concern
moss	Woolly Fringe-moss	<i>Racomitrium lanuginosum</i>	Threatened Species: Least concern
moss	Yellow Fringe-moss	<i>Racomitrium aciculare</i>	Threatened Species: Least concern
moss	Yellow-tuber Thread-moss	<i>Bryum tenuisetum</i>	Threatened Species: Data deficient
moss	Zygodon viridissimus var. viridissimus	<i>Zygodon viridissimus</i> var. <i>viridissimus</i>	Threatened Species: Least concern
terrestrial mammal	Daubenton's Bat	<i>Myotis daubentonii</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
terrestrial mammal	Eurasian Badger	<i>Meles meles</i>	Protected Species: Wildlife Acts
	Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	Protected Species: Wildlife Acts
	European Otter	<i>Lutra lutra</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex

<b>Hectad G91</b>			
<b>Taxonomic group</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Designation</b>
			II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
	Pine Marten	<i>Martes martes</i>	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
	West European Hedgehog	<i>Erinaceus europaeus</i>	Protected Species: Wildlife Acts

## Appendix III

Habitat characteristics and descriptions from the ecological site visit referred to in Section 3.1.5 of this assessment and Figure 5 of the report (replicated below). These habitat types were identified and categorised following the Fossitt (2000)<sup>1</sup> classification system for Ireland. Brief descriptions of each of the habitats are provided below.

### Existing Carpark Area – Mosaic

The area around the existing carpark is a mosaiced habitat of artificial surfaces, amenity grassland and planted trees which form 'treelines' with no understory other than mown grassland.

### Wet grassland (GS4)

This is agricultural pasture land that is wet by nature and is low diversity with species such as *Juncus effusus*, *Holcus lanatus*, *Filipendula ulmaria*, *Juncus acutiflorus*, *Menta aquatica*, *Stachys palustris*, *Valeriana sp.*, *Angelica sylvestris*.

### Riparian Woodland (WN5)

The riparian woodland area was well developed with semi-mature-mature trees, dense tree cover with minimal gashiness' and a complex understory. The species on site included *Alnus glutinosa*, *Salix caprea*, *Quercus sp.*, *Sorbus aucuparia* (planted), *Stachys lacustris*, *Urtica dioica*, *Filipendula ulmaria*, *Typha latifolia*, *Abies alba*, *Salix alba*, *Fraxinus excelsior*, *Sambucus sp.*, *Mimulus effusus*, *Crataegus monogyna*, *Salix sp.*

### Lake (FL4) and waterways (FL3)

The lake itself has benthic floral populations including the following *Nymphaea Alba*, *Nuphar lutea*, *Elodea canadensis*, *Potamogeton natans*, *Potamogeton pectin*, *Alisma plantago-aquatica*. Canadian waterweed is an invasive species.

### Reed and large sedge swamps (FS1) or Marsh (GM1)

The area around the water's edge which is also under the boardwalk structure has a reed sedge swamp/marsh habitat with the following species *Typha latifolia*, *Schoenoplectus lacustris*, *Sparganium erectum*, *Eupatorium canabicum*, *Juncus effusus*, *Holcus lanatus*, *Filipendula ulmaria*, *Juncus acutiflorus*, *Menta aquatica*, *Stachys palustris*, *Valeriana sp.*, *Angelica sylvestris*. This area is used by wading birds such as Moorhen.

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<sup>1</sup> Fossitt, J.A., 2000. *A guide to habitats in Ireland*. Heritage.





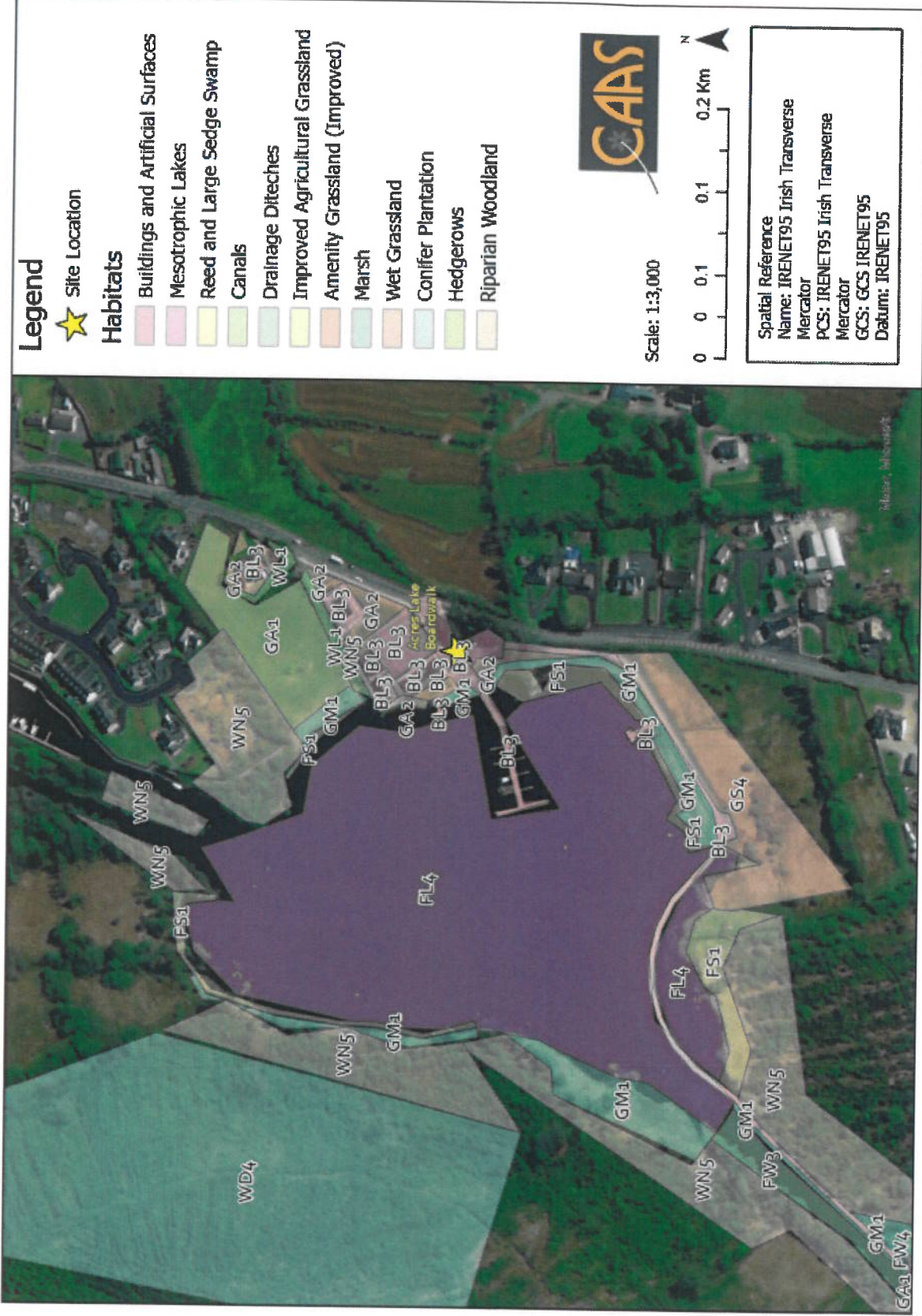


Figure 1 Habitat map (Fossit level 3) within the Acres Lake Boardwalk area





## Appendix IV Winter Bird Data

**Appendix IV Table 1 All bird foraging behaviours observed in the Acres Lake Boardwalk area**

BTO Code	Number of Individuals	Common Name	Scientific Name	Habitat Description	Tidal Condition	Foraging Group Composition
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	jetty		BH1
BH	12	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	FL4 - birds foraging in the water and reed beds bordering the lake		MA7, MS2, BH12
BH	20	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	jetty		MA8, BH20
BH	12	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	FL4- birds foraging in water and reed beds bordering the lake. Birds all flocked around family at benches feeding them bread at 13.30		MA11, BH12, MS2
BH	10	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	lake		BH10, CA1
BH	23	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	FL with reedbeds along the shore		BH23, MS2, CA1, MA8
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	lake		CA1, BH1
BH	14	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	GA2		MS2, MA5, BH14
BH	9	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	jetty. Man feeding birds at 15.22		MA6, BH9, LB2, MS2
BH	6	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	FL		BH6, LB2
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	lake		BH10, CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	lake		CA1, BH1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	FL		CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	FL with reedbeds along the shore		BH23, MS2, CA1, MA8
LB	2	Lesser Black-backed Gull	<i>Larus fuscus</i>	FL		BH6, LB2
LB	2	Lesser Black-backed Gull	<i>Larus fuscus</i>	jetty. Man feeding birds at 15.22		MA6, BH9, LB2, MS2
MA	7	Mallard	<i>Anas platyrhynchos</i>	FL4 - birds foraging in the water and reed beds bordering the lake		MA7, MS2, BH12
MA	5	Mallard	<i>Anas platyrhynchos</i>	lake		MA5, M 2
MA	2	Mallard	<i>Anas platyrhynchos</i>	lake	Mid Tide	MS2, MA2
MA	12	Mallard	<i>Anas platyrhynchos</i>	patch of GA2 beside jetty and car park. Disturbed by dog at 15.56		MA12
MA	4	Mallard	<i>Anas platyrhynchos</i>	FL and reed beds along shore		MS1, MH1, MA4
MA	2	Mallard	<i>Anas platyrhynchos</i>	FL and Reed beds along shore		MS2, MA2, MH1

BTO Code	Number of Individuals	Common Name	Scientific Name	Habitat Description	Tidal Condition	Foraging Group Composition
MA	11	Mallard	<i>Anas platyrhynchos</i>	FL4- birds foraging in water and reed beds bordering the lake. Birds all flocked around family at benches feeding them bread at 13.30		MA11, BH12, MS2
MA	4	Mallard	<i>Anas platyrhynchos</i>	FL with reedbeds along shore		MA4
MA	5	Mallard	<i>Anas platyrhynchos</i>	GA2		MS2, MA5, BH14
MA	4	Mallard	<i>Anas platyrhynchos</i>	lake		MA4
MA	8	Mallard	<i>Anas platyrhynchos</i>	jetty		MA8, BH20
MA	8	Mallard	<i>Anas platyrhynchos</i>	lake, reedbed		MA8, MS2, MH1
MA	8	Mallard	<i>Anas platyrhynchos</i>	FL with reedbeds along the shore		BH23, MS2, CA1, MA8
MA	6	Mallard	<i>Anas platyrhynchos</i>	jetty. Man feeding birds at 15.22		MA6, BH9, LB2, MS2
MH	1	Moorhen	<i>Gallinula chloropus</i>	lake, reedbed		MA8, MS2, MH1
MH	1	Moorhen	<i>Gallinula chloropus</i>	FL and reed beds along shore		MS1, MH1, MA4
MH	1	Moorhen	<i>Gallinula chloropus</i>	FL and Reed beds along shore		MS2, MA2, MH1
MS	2	Mute Swan	<i>Cygnus olor</i>	lake	Mid Tide	MS2, MA2
MS	2	Mute Swan	<i>Cygnus olor</i>	FL with reedbeds along the shore		BH23, MS2, CA1, MA8
MS	2	Mute Swan	<i>Cygnus olor</i>	lake, reedbed		MA8, MS2, MH1
MS	2	Mute Swan	<i>Cygnus olor</i>	jetty. Man feeding birds at 15.22		MA6, BH9, LB2, MS2
MS	2	Mute Swan	<i>Cygnus olor</i>	GA2		MS2, MA5, BH14
MS	2	Mute Swan	<i>Cygnus olor</i>	FL4 - birds foraging in the water and reed beds bordering the lake		MA7, MS2, BH12
MS	1	Mute Swan	<i>Cygnus olor</i>			MS1
MS	1	Mute Swan	<i>Cygnus olor</i>	FL and reed beds along shore		MS1, MH1, MA4
MS	2	Mute Swan	<i>Cygnus olor</i>	FL and Reed beds along shore		MS2, MA2, MH1
MS	2	Mute Swan	<i>Cygnus olor</i>	FL4- birds foraging in water and reed beds bordering the lake. Birds all flocked around family at benches feeding them bread at 13.30		MA11, BH12, MS2

**Appendix II Table 2 All bird roosting behaviours observed in the Acres Lake Boardwalk area**

BTO Code	Number of Individual s	Common Name	Scientific Name	Feature Type	Habitat Description	Roosts Group Composition
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Acres_roost 1_ November	jetty, patch of GA2	BH1, MA7, MS2
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>		sign post in lake	BH1
BH	2	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	boardwalk	posts of boardwalk	BH2
BH	10	Black-headed Gull	<i>Chroicocephalus ridibundus</i>		jetty	BH10, MA6, MS2
BH	2	Black-headed Gull	<i>Chroicocephalus ridibundus</i>		sign posts	CA1, BH2
BH	12	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Jetty	Jetty on Lake	BH12, MA10
BH	23	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Jetty	Jetty	BH23, MA15
BH	4	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	jetty	jetty on lake	BH4, LB2, MA4
BH	2	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	jetty	jetty on lake	BH2
CA	1	Cormorant	<i>Phalacrocorax carbo</i>		sign post in water	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>		sign posts	CA1, BH2
LB	2	Lesser Black-backed Gull	<i>Larus fuscus</i>	jetty	jetty on lake	BH4, LB2, MA4
MA	3	Mallard	<i>Anas platyrhynchos</i>		jetty	MA3
MA	2	Mallard	<i>Anas platyrhynchos</i>	boardwalk	boardwalk over the water	MA2
MA	10	Mallard	<i>Anas platyrhynchos</i>	Jetty	Jetty on Lake	BH12, MA10
MA	4	Mallard	<i>Anas platyrhynchos</i>	Jetty	jetty on lake	BH4, LB2, MA4
MA	7	Mallard	<i>Anas platyrhynchos</i>	Acres_roost 1_ November	jetty, patch of GA2	BH1, MA7, MS2
MA	2	Mallard	<i>Anas platyrhynchos</i>		reed bed	MA2
MA	15	Mallard	<i>Anas platyrhynchos</i>	Jetty	Jetty	BH23, MA15
MA	6	Mallard	<i>Anas platyrhynchos</i>		jetty	BH10, MA6, MS2
MA	2	Mallard	<i>Anas platyrhynchos</i>	Reed beds	Reed beds bordering lake	MA2
MS	2	Mute Swan	<i>Cygnus olor</i>	Acres_roost 1_ November	jetty, patch of GA2	BH1, MA7, MS2
MS	1	Mute Swan	<i>Cygnus olor</i>	flattened tuft of Reed bed	flattened tuft of reed bed - MS nest building	MS 1
MS	2	Mute Swan	<i>Cygnus olor</i>		jetty	BH10, MA6, MS2
SN	2	Snipe	<i>Gallinago gallinago</i>		Reed bed	SN2
SN	5	Snipe	<i>Gallinago gallinago</i>	Reedbed	Reedbed bordering the lake	SN5
SN	2	Snipe	<i>Gallinago gallinago</i>	Reed beds behind boards walk	Reed beds bordering the lake	SN2

**Appendix II Table 3 All birds observed flying overhead in the Acres Lake Boardwalk area**

BTO Code	Number of Individuals	Common Name	Scientific Name	Group Size	Survey Date	Flight Duration in Seconds	Flight Height	Flight Direction	Brief Description	Flight Group Composition
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	29/12/2020	20	0	S	repeated by: BH2 at 10.27, BH1 at 10.32, BH1 at 12.51, BH1 at 15.22, BH1 at 15.54	BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	120	8		foraging	BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	60	7		landed on post in water to roost	BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	60	5		travelling. repeated at 9.18 BH1,	BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	25	25			BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	5	10		getting up from water, circling area and landing back down - foraging.	BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	120	5			BH1
BH	2	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	2	29/12/2020	15	0	N	repeated by: BH9 at 11.48, BH1 at 15.22	BH2
BH	4	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	4	29/12/2020	30	0		repeated by: BH3 at 10.10, BH7 at 10.21, BH2 at 10.36, BH2 at 10.45, BH1 at 10.55, BH11 at 11.00, BH2 at 11.16, BH1 at 11.23, BH1 at 11.30, BH2 at 12.02, BH1 at 12.12, BH1 at 12.40, BH1 at 13.00, BH4 at 13.15, BH2 at 13.44, BH2 at 14.28, BH2 at 14.54, BH	BH 4
BH	3	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	3	29/12/2020	60	0			BH3
BH	2	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	2	20/11/2020	10	10			BH2
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	60	10		repeated BH 1 at 10.24, BH 2 at 11.51, BH 1 at 11.56, BH 1 at 12.04, BH 1 at 12.22, BH 1 at 14.10, BH1 at 14.31	BH1



BTO Code	Number of Individuals	Common Name	Scientific Name	Group Size	Survey Date	Flight Duration in Seconds	Flight Height	Flight Direction	Brief Description	Flight Group Composition
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	8	15			BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	60	25			BH1
BH	1	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	20/11/2020	120	15			BH1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	0	0		same CA took up from sign post and flew from lake to southeast landed in water	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	20/11/2020	5	7			CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	20/11/2020	15	25			CA1
CA	2	Cormorant	<i>Phalacrocorax carbo</i>	2	29/12/2020	30	0	N	repeated by: CA2 at 10.09, CA1 at 11.12, CA3 at 11.36, CA1 at 11.37, CA2 at 13.17, CA1 at 13.20, CA1 at 13.36, CA1 at 14.26, CA1 at 14.42, CA1 at 16.02	CA2
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	50	0		travelling	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	0	0			CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	20/11/2020	10	10	SE	travelling	CA
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	0	0		landed to roost on sign post	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	25	0	S	repeated by: CA1 at 13.39, CA1 at 14.06, CA1 at 14.18	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	40	0		travelling	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	18	0		landed on sign post to roost	CA1
CA	1	Cormorant	<i>Phalacrocorax carbo</i>	1	29/12/2020	60	0			CA1
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	20/11/2020	60	15		travelling	MA1
MA	6	Mallard	<i>Anas platyrhynchos</i>	6	20/11/2020	5	5		flew in from canal landed in water	MA6
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	20/11/2020	15	10			MA1
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	20/11/2020	4	5			MA1
MA	3	Mallard	<i>Anas platyrhynchos</i>	3	20/11/2020	8	5			MA 3

BTO Code	Number of Individuals	Common Name	Scientific Name	Group Size	Survey Date	Flight Duration in Seconds	Flight Height	Flight Direction	Brief Description	Flight Group Composition
MA	6	Mallard	<i>Anas platyrhynchos</i>	6	29/12/2020	5	0			MA6
MA	5	Mallard	<i>Anas platyrhynchos</i>	5	20/11/2020	8	5			MA5
MA	2	Mallard	<i>Anas platyrhynchos</i>	2	20/11/2020	12	8			MA2
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	20/11/2020	10	8			MA1
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	20/11/2020	4	5			MA1
MA		Mallard	<i>Anas platyrhynchos</i>	2	20/11/2020	7	5		flew across lake and landed back down	MA
MA	2	Mallard	<i>Anas platyrhynchos</i>	2	29/12/2020	5	0			MA2
MA	1	Mallard	<i>Anas platyrhynchos</i>	1	29/12/2020	0	0			MA1
MS	2	Mute Swan	<i>Cygnus olor</i>	2	29/12/2020	0	0		swans landed in lake but were immediately chased by 2 resident MS already in the lake	MS2
MS	2	Mute Swan	<i>Cygnus olor</i>	2	29/12/2020	0	0		swans were chased from lake by resident pair and flew away southeast	MS2
SN	1	Snipe	<i>Gallinago gallinago</i>	1	29/12/2020	4	0	E	travelling. landed in reedbed to roost	SN1
SN	1	Snipe	<i>Gallinago gallinago</i>	1	29/12/2020	1	0		second SN in reedbed	SN1
SN	1	Snipe	<i>Gallinago gallinago</i>	1	29/12/2020	40	0		travelling	SN1
SN	1	Snipe	<i>Gallinago gallinago</i>	1	29/12/2020	130	0		travelling	SN1

**Appendix II Table 4 Survey details and comments for all surveys at Acres Lake Boardwalk**

Site	Weather conditions	Surveyor	Date	Arrival Time	Survey Start Time	Survey End Time	Comments	Disturbance Events	Tourism Notes
Acres Lake Boardwalk	Fresh breeze from east. Dry. 100% cloud cover. Good visibility. Light snow towards end of survey. 1/0°C	Kate Bismilla	11/02/2021 12:00	11:10	11:20	14:20		Some disturbance to roosting and foraging MA, BH and MS from dogs and children at jetty. Although human activity brought birds over looking to be fed	
Acres Lake Boardwalk	Light air from N. 60% cloud cover. no rain. snow and frost on ground. good visibility	Kate Bismilla	23/01/2021 12:00	10:00	10:10	13:10			
Acres Lake Boardwalk	Moderate breeze from south in morning. Fresh breeze from south in afternoon. 100% cloud cover. No rain in morning, light and heavy showers in afternoon. Good visibility	Kate Bismilla	23/03/2021 12:00	09:50	10:00	13:00			
Acres Lake Boardwalk	Light breeze from south. no rain. cloud cover 50%. visibility good	Kate Bismilla	06/11/2020 12:00	07:50	08:00	11:00			
Acres Lake Boardwalk	Gentle breeze from SW. some drizzle. 100%cc. visibility good	Kate Bismilla	20/11/2020 12:00	08:20	08:30	11:30			
Acres Lake Boardwalk	Moderate breeze from NW. light showers. visibility good. cloud cover 80%	Kate Bismilla	29/12/2020 12:00	09:40	09:50	12:50			
Acres Lake Boardwalk	Fresh breeze from east. Dry. 100% cloud cover. Good visibility. Light snow towards end of survey. 1/0°C	Kate Bismilla	11/02/2021 12:00	14:50	15:00	18:00			
Acres Lake Boardwalk	Light air from N. 60% cloud cover. no rain. snow and frost on ground. good visibility	Kate Bismilla	23/01/2021 12:00	13:40	13:50	16:50			
Acres Lake Boardwalk	Moderate breeze from south in morning. Fresh breeze from south in afternoon. 100% cloud cover. No rain in morning, light and heavy showers in afternoon. Good visibility	Kate Bismilla	23/03/2021 12:00	13:20	13:30	17:30			
Acres Lake Boardwalk	Light breeze from south. no rain. cloud cover 50%. visibility good	Kate Bismilla	06/11/2020 12:00	12:20	12:30	15:30			
Acres Lake Boardwalk	Gentle breeze from SW. some drizzle. 100%cc. visibility good	Kate Bismilla	20/11/2020 12:00	12:50	13:00	15:00			
Acres Lake Boardwalk	Moderate breeze from NW. light showers. visibility good. cloud cover 80%	Kate Bismilla	29/12/2020 12:00	13:00	13:10	16:10			

