KERRY ECOLOGICAL SERVICES

Appropriate Assessment Screening for proposed works at Blackberry Lane, Athlone, Co. Westmeath

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On behalf of: O'BFA

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1. INTRODUCTION

1.1 General

It is proposed to construct 41 bungalows on an existing site with dwellings adjacent to Blackberry Lane, Athlone, Co. Westmeath.

A Habitats Directive Screening Report has been requested*.*

The overall objectives of this assessment are:

- To assess any likely impacts that may impact on any existing Natura 2000 site(s) and their associated species.
- To assess the likely impacts, if any, on the existing habitats and associated fauna, which may arise from the proposed development.

This report has been compiled by Ciaran Ryan (B.Sc. Analytical Science; M.Sc. Environmental Science) with over 25 years experience in ecological survey (including SAC & SPA designations), SAC & SPA Management Plans, Commonage Framework Plans, SAC Appeals, Natura 2000 site assessments and reports (NIS) and general environmental consultancy. I am an accredited Native Woodland Scheme ecologist.

1.2 Description of project / development

The project proposes the development of 41 No new residential homes, 2,3,4-bedroom single storey predominantly semidetached on individual defined plots. The works involve the provision of temporary halting site services, decant and rehousing of families over 3-4 phases of development and wholly within the existing inhabited site and immediate boundary lands.

Full detailed maps and drawings of the proposed buildings are given in documents already submitted.

2. LEGISLATIVE SCOPE OF THIS REPORT

2.1 Environmental Impact Assessment

The Habitats Directive (92/43/EEC) and EC (Natural Habitats) Regulations 1997 (S.I. 94/97), require local governments to ensure that appropriate ecological assessment of any proposed developments or works is carried out. Section 31 of the Natural Habitats Regulations stipulates that where an operation or activity is likely to have a significant effect on a European Site (i.e. an SAC or SPA), then an assessment should be carried out on the implications for that site in view of the site's conservation objectives. The Environmental Impact Regulations 1989 - 2000 stipulates the classes of development that would require an Environmental Impact Assessment (EIA).

The proposed project is sub-threshold and will not require an EIA as per the legislation.

2.2 Appropriate Assessment

The concept of Appropriate Assessment (AA) is the requirement to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network, before that plan or project proceeds. The obligation to undertake an AA derives from Article 6(3) and 6(4) of the Habitats Directive. Both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. An AA is a focused and detailed impact assessment of the implications of the plan or projects, alone and in combination with other plans and projects, on the integrity of a Natura 2000 site, in view of its conservation objectives. Assessments should be undertaken on the basis of best scientific evidence and methods.

The European Commission's Guidance promotes a four-stage process to complete the AA:

- Stage 1 – Screening Process
- Stage 2 – Appropriate Assessment
- Stage 3 – Assessment of Alternative Solutions
- Stage 4 – Assessment where no alternative solutions exist and where adverse effects remains, in this case, the competent authority must establish whether or not the plan or project can be considered to be necessary for imperative reasons of overriding public interest.

Stages 1 and 2 deal with the main requirements of assessment, under Article 6.3

The Department of Environment, Heritage and Local Government (DoEHLG) has issued a document entitled *Appropriate Assessment of Plans and Projects in Ireland: guidance for planning authorities (2010).* This document states that it is the responsibility of the competent authority to undertake the AA. The assessment should be based on sufficient relevant information such as that submitted by the proponent of the plan.

This assessment must be prepared by an ecological specialist(s) undertaking surveys, research and analysis, with input from other relevant disciplines as required e.g. engineers, hydrologists, archaeologists etc. Assessments should be undertaken on the basis of best scientific evidence and methods. Accordingly, data and information on the project and on the site must be obtained and an analysis of potential effects on the site must be undertaken.

This AA has been undertaken in accordance with the European Commission Notice 2021/C 437/01 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' and in accordance with current DoEHLG guidance. It provides the information required in order to establish whether or not the proposed development is likely to have a significant impact on any Natura 2000 site. It considers the potential impacts on local Natura 2000 sites in the context of the habitats and species for which such Natura 2000 site(s) has been selected, along with their conservation objectives.

2.3 Screening Statement/ Natura Impact Assessment

The first step in an AA is a Screening Statement. This requires a description of the project, identification and description of relevant Natura 2000 sites, and an assessment of likely effects of the proposed project. If these are not deemed to be potentially significant, then there is no need to conduct a full AA. However, if any likely effects are deemed to be potentially significant, then a full AA or Natura Impact Statement (NIS) must be conducted.

In complying with the obligations under Article 6(3) and following the above guidelines, this AA has been prepared using the following structure:

Stage 1: Screening
This includes:

- Description of the proposed development/project (and if the plan/project is necessary for the management of the Natura 2000 site(s)).
- Consultation with NPWS (if relevant).
- Identification of all Natura 2000 sites potentially affected by the plan/project.
- Identification and description of individual and cumulative impacts likely to result from the plan/project.
- Assessment of the significance of the impacts identified above on site integrity.
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.
- Determination of the necessity or otherwise for a Natura Impact Statement (NIS).

Screening for AA examines the likely effects of a project or plan, alone and in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant. If it is determined during screening that the development may have a significant effect on a Natura 2000 site then a NIS will need to be prepared. If it is determined during screening that the development may have a significant effect on a Natura 2000 site then a Stage 2 NIS will need to be prepared. This assessment has concluded that a Stage 2 Appropriate Assessment is not required on this occasion.

This report complies with a Screening Statement in accordance with current DoEHLG guidance. It provides the information required in order to establish that the proposed development is not likely to have a significant impact on any Natura 2000 site. It considers the potential impacts on local Natura 2000 sites in the context of the habitats and species for which such Natura 2000 site(s) has been selected, along with their conservation objectives.

3. ECOLOGICAL STATUS

3.1 General background

The proposed development is within 5km of the following Natura 2000 sites part of the EU designated Natura 2000 site network:
- c. 2.5km north-west of Crosswood Bog Special Area of Conservation (SAC code 2337);
- c. 3km north-east or the River Shannon Callows SAC (code 0216) & Middle Shannon Callows Special Protection Area (SPA code 4096);
- c. 4.8km west of Carn Park Bog SAC (code 2336).
- c. 4.5km south-east of Lough Ree SAC (code 4064);

With the introduction of the Birds Directive in 1979 (79/409/EEC) and the Habitats Directive in 1992 (92/43/EEC), came the obligation to establish the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites; from these the conservation objectives of the site are derived.

SACs are to be managed in a method to maintain a favourable ecological status for the relevant Annex I habitat(s) and Annex II species listed under the Habitats Directive.

Similarly, SPAs require the maintenance of the favourable conservation status of habitats for birds listed under Annex I of the EU Birds Directive, or areas that are important to migratory bird species. Important migratory sites are graded as either of national or of international importance i.e.:

- holds 1% of the estimated national population for non-Annex I migratory species,
- regularly supports 20,000 waterfowl,
- regularly sustains 1% of the all-Ireland bird population for an Annex I species,
- regularly sustains 1% of the bio-geographical (European) bird population for an non-Annex I migratory species.

3.2 Natura 2000 site(s)

It is considered that there cannot be any potential impact on any of the aforementioned Natura 2000 sites owing to:

- The separation distances.
- The intervening relatively flat urban and agricultural land comprising buildings, major roads, a railway line, fields, hedgerow, scrub and embankments.
- The lack of any watercourse on site which could act as a conduit for the transfer of sediment and/or polluting material off site.
- There is no habitat on site suitable for most bird species, and definitely not for SPA designated bird species.

Notwithstanding the above, the River Shannon Callows SAC / Middle Shannon Callows SPA are considered with respect to any potential impacts from the proposed development. It is considered that this water-based ecosystem is the most likely Natura 2000 site that could be impacted upon, as it is potentially downstream of the project. Also, the subsequent Screening logic outlined also applies to other nearby Natura 2000 sites.

3.2.1 River Shannon Callows SAC (code 0216)

This SAC has been designated for:

Habitats

Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]

Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510]

Alkaline fens [7230]

Limestone pavements [8240]

Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]

Species

Lutra lutra (Otter) [1355]

Full site synopsis for this site can be accessed on the NPWS database, while details of the conservation objectives for this site can be accessed at:

http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/ CO000216.pdf

3.2.2 Qualifying Interests & Conservation Objectives

The qualifying interests of the SAC potentially relevant to this development are aquatic based habitats and species, namely *Molinia* meadows, alkaline fens, alluvial forests and Otter.

The Conservation Objectives of the SAC are to maintain or restore the favourable conservation status of Annex I Habitats and Annex II Species.

The potential impacts on habitats and species within the SAC are addressed in section 5. This shows that there will be no potential for a significant ecological impact. As such, there cannot be any impact on the Conservation Objectives.

3.2.3 Middle Shannon Callows SPA (code 4096)

This SPA has been designated for:

Whooper Swan (Cygnus cygnus) [A038]

Wigeon (Anas penelope) [A050]

Corncrake (Crex crex) [A122]

Golden Plover (Pluvialis apricaria) [A140]

Lapwing (Vanellus vanellus) [A142]

Black-tailed Godwit (Limosa limosa) [A156]

Black-headed Gull (Chroicocephalus ridibundus) [A179]

Wetland and Waterbirds [A999]

Full site synopsis for this site can be accessed on the NPWS database, while details of the conservation objectives for this site can be accessed at:

http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/ CO004096.pdf

3.2.4 Qualifying Interests & Conservation Objectives

The qualifying interests of the SPA potentially relevant to this development would include all species if there was a significant impact on this Natura 2000 site.

The conservation objectives of the SPA are to maintain or restore the favourable condition of the bird species listed as of Special Conservation Interest.

The potential impacts on species within the SPA are addressed in section 5. This shows that there will be no significant ecological impact. As such, there cannot be any impact on the Conservation Objectives.

4. SITE ASSESSMENT

4.1 General

Habitats and species likely to be affected were identified. This assessment was carried out in accordance with the Smith *et al*., (2011). Foulkes *et al*., (2013) and the Institute of Ecology and Environmental Management (2011 & 2012). Habitats are classified according to Fossitt (2000). Using information gathered in the field, together with any published and/or local information on the site and its environs, it is considered that an adequate ecological assessment is achieved.

Terrestrial mammals were considered, with special attention is paid to species listed under Schedule 5 of the Wildlife Act, 1976; 2000 in particular Badger or Otter. Any bird species potentially present were considered. The presence of any invasive species listed under the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) was noted.

4.2 Habitats

Habitats identified are categorised as per level 3 habitat mapping classification (Fossitt, 2000). Most of the area comprises buildings and artificial surfaces (BL3). The site is laid out around a single access cul-de-sac road serving a small cluster of detached bungalows followed by larger 'Serviced Sites' with an ablutions block and surrounding Caravan emplacements. Along the east-west road to the western edge of the site are a series of 'Dayroom' buildings – permanent bungalow structures which are accompanied to the rear by caravans. To the perimeter, there are a series of ad-hoc lean-to sheds and enclosures used for storage and animals.

To the north-centre and north-east there is an area of rank grassland (GS4/GS1), with spoil and bare ground (ED2) and re-colonising bare ground (ED3) in evidence and some dumping also present. There are occasional scattered shrubs present (e.g. stunted *Crataegus monogyna*).

The boundaries comprise:

- To the south: Scrub (WS1) and berm (BL2) forming buffer to the N6 Athlone Bypass – approximately 10m in wide.
- To the north: Part masonry boundary wall (BL1), part berm and concrete barrier which forms physical and visual break to OPW Direct Provision encampment.
- To the west: Site road access ends with turning circle, caravan emplacement, scrub and hedgerow (WL1).
- To the east: Multiple boundaries to access road, high masonry walls, some poor hedging.

There are no watercourses present within or adjacent to the site.

There were no non-native, invasive plant species (as listed under schedule 3 of SI no. 477 of 2011) recorded.

4.3 Fauna

4.3.1 General

There is no notable fauna recorded for this site. Buildings and artificial surfaces are not attractive to regular use by native fauna. Badger setts or signs of Badger were not observed. There is no watercourse present on site suitable for Otter. There are no large trees present in the general area that could harbour roosting bats, although the band of hedgerow and scrub along the southern boundary may be utilised by foraging bats.

Species present within N0641 1km grid (encompassing development site) includes typical plants (including the invasive *Clematis vitalba*), insects (including butterflies, moths and a wasp species), Fox and Rabbit. (Biodiversityireland.ie).

Some native songbirds would likely occur within the general area in hedgerow and fields e.g. Blackbird, Wren, Robin and possibly Bullfinch, Chaffinch and Willow Warbler. None of these are listed under Annex I of the EU Birds Directive or on the Birds of Conservation Concern Red List.

4.4 Rare plants / notable species

The site does not support any of the habitats or species for which any nearby SAC and/or SPAs are designated, nor are there rare plants or other notable species present.

The site is not wet enough to provide suitable habitat for amphibians such as Common Frog.

5. SCREEENING

5.1 Identification of potential impacts

Only those features of the development that have the potential to impact on the integrity of the Natura 2000 site are considered. For screening purposes the potential impacts from the proposed development are examined with regard to the following:

- Habitat loss
- Alteration of habitats
- Habitat or species fragmentation
- Potential impairment of water quality
- Disturbance and/or displacement of protected species
- Cumulative impacts

5.2 Assessment of direct impacts

5.2.1 Natura 2000 site(s)

The development site is not located within a Natura 2000 site. Consequently, there is no direct loss of habitat from within the boundaries of any Natura 2000 site and as such no loss of habitat or fragmentation of habitat for the conservation interests of any site. Therefore, it can be concluded that no direct impacts will occur on any Natura 2000 site.

5.2.2 Site habitats

The development will result in an alteration of site habitats. However, this only comprises buildings and artificial surfaces of minimal ecological value. It should be noted that any impact here is localised and has no bearing on any impact on nearby Natura 2000 site(s).

5.3 Assessment of indirect impacts

5.3.1 Sediment run-off / pollution

Sediment and nutrient run-off can occur owing to proposed works and the general operation of machines. These works could result in impacts on the semi-natural habitats present, notably any aquatic environment hydrologically linked with the Natura 2000 site(s). The works could result in the run-off of sediment, dust, hydrocarbons and other potential pollutants into on-site drains and watercourses, which could act as conduit for the transfer of such into a Natura 2000 site(s)**.**

Surface water run-off laden with silt/sediment, nutrients, pollutants and/or dust deposits could potentially have negative impacts (e.g. disturbance and/or displacement of species) on important and sensitive habitats and species that are found within any nearby watercourse such as the River Shannon and associated R. Shannon Callows SAC and Middle Shannon Callows SPA, some 3km to the south-west. Although slope and soil/surface permeability will have a bearing on surface water run-off, in general it can be stated that any works within 10m of a watercourse discharging into this river could potentially result in sediment run-off into the natural aquatic environment and the SAC. With steep downward slope and/or poor surface permeability this figure would decrease.

The qualifying features of the SAC potentially impacted by the proposed development are mostly aquatic based habitats and species as already detailed (refer section 3.2).

5.3.2 Assessment

(i) There are no watercourses present within or near the proposed development. As such, there is no hydrological link that could act as a conduit for the transfer of polluting material between the proposed works and any Natura 2000 site.
(ii) The site ranges from 2.5km (Crosswood Bog SAC) to 4.5km (Louth Ree SAC) from the nearest Natura 2000 sites; with R. Shannon Callows SAC / Middle Shannon Callows SPA being some 3km distant.
(iii) The intervening land comprises relatively flat urban and agricultural land emcompassing buildings, major roads, a railway line, fields, hedgerow, scrub and embankments.
(iv) The nearby Shannon Callows SAC / SPA are accustomed to fluctuations in sediment loading and any small additional loading would have little impact.
(v) As with any development project, the application of good building (CIRIA guidelines) is assumed.

Considering all the above, it can be stated that there is no potential for the run-off of sediment or polluting material having a significant negative impact upon any Natura 2000 site, notably the River Shannon Callows SAC / Middle Shannon Callows SPA. As such, this development will not impact on its conservation objectives.

Notwithstanding that, an adequate surface water drainage system will be established to ensure there can be no contaminated run-off during construction and operational phases of the development, even after heavy rainfall or flood events.

5.4 Assessment of impacts on relevant fauna

The site is not within any Natura 2000 site and as such cannot have any direct impact here. It comprises a built environment with no resident fauna of note. The nature of the works is such to not have any significant impact on any potential nearby resident fauna such as Badger and bat species, as it is already is residential use. The nature of the on-going operation of the development would not represent a significant disturbance factor, as again it is already in residential use.

The potential for impact on the SAC is mostly indirect, as described above. The Shannon Callows (SAC/SPA) and its associated species could be negatively impacted upon. These and other aquatic species could be negatively impacted upon if sediment run-off from the works entered the callows. This potential impact is addressed above (section 5.3).

There is also the potential to negatively impact on foraging bird species within the SPA. However, although the proposed development is within the foraging range of some species (e.g. Whooper Swan) the buildings and artificial surfaces present, along with the rank grassland, have no attraction to any designated bird species. As such, the proposed works will not have any impact on any Natura 2000 site designated fauna, notably those detailed for the Middle Shannon Callow SPA.

5.5 Assessment of cumulative impacts

The proposed development is considered in combination with other developments in the area that could result in cumulative effects on Natura 2000 sites. In combination activities that could potentially impact on water quality with the developments include agriculture, wastewater treatment and further development/ construction in the area. Agricultural grassland predominantly used for grazing livestock is the main landuse in the surrounding area. Farming activities and buildings present potential point and diffuse sources of nutrients to the aquatic environment.

The following was undertaken:

- A search of on-line system for Westmeath County Council recent planning applications.
- A review of aerial photography in the vicinity of the proposed forestry works.

Both of the above indicate middle-density dwellings, and some agricultural buildings in sub-urban environment including roads and town (i.e. Athlone) buildings. There are no major developments proposed within the vicinity that could be considered to significantly impact on the integrity of the SAC.

The proposed development is relatively small and will have minimal impact on the local environment. There is already buildings and artificial surfaces dominating the site. Standard building guidelines (e.g. CIRIA) and County Council requirements will be applied.

The proposed development will result in an additional loading to the local municipal sewerage treatment works The capacity and regulatory compliance of local sewage treatment works is the responsibility of Uisce Eireann (Irish Water) and the local authority.

Considering that it can be shown that this current project will have no significant impact on any Natura 2000 site, it would therefore contribute little to any potential cumulative /combination impacts with other potential developments. Any future development will be subject to the Appropriate Assessment process, and therefore, cumulative or in-combination impacts are unlikely to ensue.

5.6 Screening Assessment Conclusion

On the basis of the above scientific assessment, this Screening for Appropriate Assessment finds that the proposed works, either individually or in combination with other projects and plans, will not have a significant effect on any designated Natura 2000 European Union site, notably the River Shannon Callows SAC / Middle Shannon Callows SPA

A Screening Matrix for Appropriate Assessment elements is given in Appendix 1.

5.7 Recommendations

Notwithstanding that the proposed works are deemed to not have a significant impact on any Natura 2000 site, the following is recommended with respect to improvement in general ecology of the locality, e.g. providing a nesting/refuge and food resource for birds, mammals and insects:

- The site boundaries will be planted (where appropriate) with native hedgerow comprising a mix of at least 3 species such as Hawthorn, Blackthorn, Holly, Rowan, Birch, Crab Apple, Elder, Aspen, Ash, Oak.

Some trees should be allowed to grow (i.e. not cut) at an interval of approximately 10 – 20m within the hedgerow.

Appendix 1: Matrix of Screening for Appropriate Assessment elements

(European Commission, 2001)

Brief description of the project	Construction of homes
Brief description of Natura 2000 site	Refer 3.2
Assessment criteria	
Describe the individual elements of the project (either along or along with other projects) likely to give rise to impacts on the Natura 2000 site	Run-off from the proposed works could enter the aquatic environment.
Describe any likely impacts of the project (either alone or in combination with other projects) on the Natura 2000 site by virtue of: • Size and scale • Land-take • Distance from Natura 2000 site or key features of the site • Resource requirements (e.g. water abstraction) • Emissions (land, water, air) • Excavations requirements • Transportation requirements • Duration of operation • Other	• The size and scale of the operation is relatively small. • There is no land-take involved. • The works are c. 3km from Natura 2000 site. • There are no resource requirements. • There will be no other emissions. • Excavation required for building, but outside Natura 2000 site(s) • Transportation involves importation of building materials. • Approximately 1.5 years.
Describe any likely changes to the site arising as a result of: • Reduction of habitat area • Disturbance to key species • Habitat or species fragmentation • Reduction in species density • Changes in key indicators of conservation value (e.g. water quality) • Climate change	• There will be no reduction in Natura 2000 habitat area. • There will be no disturbance to key species • Habitat/species fragmentation will not occur as outside any Natura 2000 site. • There will be no reduction in species density. • There are no expected changes in the conservation value of the site e.g. designated habitats and species will not be affected. • No impact on climate change

Describe any likely impacts on the Natura 2000 site as a whole in terms of: Interference with the key relationships that define the (i) structure of the site (ii) function of the site	The limited scale of the proposed works will not result in any interference with the key relationships defining the structure or function of the site.
Provide indicators of significance as a result of the identification of effects set out above in terms of: • Loss • Fragmentation • Disruption/disturbance • Change to key elements of the site (e.g. water quality)	• There will be no habitat loss. • There will be no fragmentation as the works occur outside the site boundary. • Disturbance is restricted to a very small area for a limited time period. • No changes to key elements of the site anticipated.
Finding of no significant effects	
Is the project directly connected with or necessary to the management of the site? (- details)	No. The works relate to building under the planning regulations**.**
Are there other projects that together with the project being assessed could affect the site? (-details)	No
Assessment of significance of effects	
Describe how the project (alone or in combination) is likely to affect the Natura 2000 site.	Run-off from the proposed works could enter the aquatic environment.
Explain why these effects are not considered significant	There are no watercourses present on site eliminating any potential for a hydrological pathway link to any Natura 2000 site. The Shannon Callows SAC/SPA is some 3km distant, separated by a mostly urban environment.
Data collected to carry out assessment	
List of agencies consulted	NPWS.
Response to consultation	Positive
Who carried out assessment?	Ciaran Ryan M.Sc. (Environmental Science)
Sources of data	NPWS, refer Bibliography
Level of assessment completed	Screening Assessment / Statement
Where can the full results of the assessment be accessed?	Westmeath County Council
<u>Overall conclusion</u>: The proposed development will have no significant impact on the flora fauna, conservation interests and integrity of any Natura 2000 site, notably the River Shannon Callows SAC / Middle Shannon Callows SPA.	

REFERENCES & BIBLIOGRAPHY

Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustow, S.H. (2000). *Bird Census Techniques*. BTO, RSPB, Bird International, Ecoscope Applied Ecologists. 2nd addition.

Cross, J. (1997). *Potential natural vegetation of Ireland.* GIS: H. Weber, Federal Agency for Nature Conservation, Bonn 1998.

Curtis T.G, & McGough H.N. (1988). *The Irish Red Data Book 1 (Vascular Plants).*Wildlife Service, Ireland.

European Commission (2003). *Interpretation manual of EU habitats.* EUR25 European Commission, DG Environment.

Felix, J. (1986). *The illustrated book of birds.* Artia Prague.

Forest Service (2020). *Bird foraging table.* Version 6th Jan., 2020. Forest Service Internal document.

Fossitt, J.A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny.

Foulkes N., Fuller, J., Little, D., McCourt, S and Murphy, P. (2013). *Hedgerow appraisal system – Best practice guidance on hedgerow survey, data collation and appraisal.* Woodlands of Ireland, Dublin. Unpublished report (pdf).

Gardiner M.J. and Radford, T. (1980). *General Soil Map of Ireland*. National Soil Survey, An ForasTaluntais, Dublin.

Geological Survey of Ireland website: www.gsi.ie

Institute of Ecology and Environmental Management (IEEM, 2006). *Guidelines for Ecological Impact Assessment in the United Kingdom.*

Institute of Ecology and Environmental Management (2011). *Ecological report writing*. IEEM, Technical Guidance Series 9.

Institute of Ecology and Environmental Management (2012). *Guidelines for preliminary ecological appraisal.* IEEM, Technical Guidance Series.

Kelleher, C. & Marnell, F. (2006). *Bat Mitigation Guidelines for Ireland.* Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.)

Lockhart, N., Madden, B., Wolfe-Murphy, S., Wymer E. & Wyse Jackson, M. (1993). *National ASI survey guidelines for ecologist.* NPWS internal document, version 1.0, March 1993.

National Parks and Wildlife Service (NPWS). *www.npws.ie*. NPWS database e.g. Site Synopsis, Conservation Objectives, Natura 2000 data.

National Rivers Authority (NRA, undated). *Guidance for the control of invasive plants near watercourses.* Publ. Code HO-9/94-20k-C-AKVI (University of Loughborough, UK).

National Roads Authority (NRA, 2009). *Guidelines for assessment of ecological impacts of national road schemes.* NRA, Ireland

Phillips, R. (1994). *Grasses, ferns, mosses and lichens of Great Britain and Ireland.* Macmillan, London.

Richardson, P. (2000). *Distribution atlas of bats in Britain and Ireland 1980-1999*. The Bat Conservation Trust, London.

Rose, F. (1981). *The Wildflower Key; British Isles - N.W. Europe.* Penguin Group.

Scottish Natural Heritage (2016). *Assessing connectivity with Special Protection Areas (SPAs) – guidance.* Version 3 – June, 2016, SNH.

Smal, C.M. (1995). *The Badger and Habitat Survey of Ireland.* The Stationery Office, Dawson St., Dublin 2.

Smith, G., O' Donoghue, P., O' Hora, K. & Delaney, E. (2011). *Best Practice Guidance for Habitat Survey and Mapping.* Heritage Council report.

Webb, D.A, Parnell, J. and Doogue, D. (1996). *An Irish Flora*. Dundalgan Press Ltd., Dundalk.

Wilde, A. (1993). *Threatened mammal, birds, amphibians and fish in Ireland.*