KERRY ECOLOGICAL SERVICES

Appropriate Assessment Screening for Dunlo Hill, Ballinasloe, Co. Galway

[Ref. 2209]

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1. INTRODUCTION

1.1 General

It is proposed to build renovate houses (with some demolition of outbuildings) at Dunlo Hill, Ballinasloe, Co. Galway. The location is shown on accompanying maps.

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

Galway County Council plans to renovate and extend the existing terraced buildings at Dunlo Hill, including "Dooley's Pub" (protected structure RPS ref 2730) to create a residential housing development comprising of; 10 no. duplex one bed apartments, 1 no. single-storey one-bed apartment, 2 no. duplex two-bed apartments (13 no apartments in total), as well as the conversion of "Dooley's Pub" from a public house to a community use. The proposal includes partial demolitions (outbuildings and sheds to the rear courtyard areas) and alterations. A new single storey extension is proposed to the rear of Dooley's townhouse at ground level housing a new store, part of unit 10 and an escape route for the community centre. This extension forms an external access roof terrace enabling part M compliant stepped access to the entrances of the upper-level duplex apartments (units 11 to 13). New construction forming 2 no. one-bed duplexes (units 08 & 09) in lieu of the existing sheds along the northern boundary. Site renewable energy design measures are planned for all units. The existing rear courtyard area to be adapted creating a new pedestrian route through the development. Provision of common services such bike parking and bin storage are proposed. The development includes for connections to existing services (including existing mains drainage), temporary construction signage, new estate signage, the delineation of on-street carparking, provision of street trees, set down area and all associated ancillary site development works, at Dunlo Hill, Ballinasloe.

Full detailed maps and drawings of the proposed buildings are given in documents 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 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 "*Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC*" and the European Commission Guidance on "*Managing Natura 2000 Sites*" 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 Assessment (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.
- 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 approximately 500m from (west of) a Natura 2000 site(s) i.e. the River Suck Callows Special Protection Area (SPA code 4097). This is part of the EU designated Natura 2000 site network.

It is also c. 15km from the River Shannon Callows Special Area of Conservation (SAC code 0216) into which the River Suck flows. However, considering the separation distance and that this report shows that the River Suck SPA can be screened out, there cannot be any detrimental impact on this SAC and any potential impact can be screened out for this SAC at this stage.

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 River Suck Callows SPA (code 4097)

This SPA has been designated for:

Species

Whooper Swan (*Cygnus cygnus*) [A038]

Wigeon (*Anas penelope*) [A050]

Golden Plover (*Pluvialis apricaria*) [A140]

Lapwing (*Vanellus vanellus*) [A142]

Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]

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/ CO004097.pdf

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

4. SITE ASSESSMENT

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).

The site comprises 7 single storey terraced houses, Dooley's Pub and an adjoining 3 storey building facing a public road. These are all classified as buildings and artificial surfaces habitat (BL3). Dooley's Pub is a protected structure (Galway Co. Co. Protected Structures reg. no. 2730). The buildings have slate roofs, mostly in poor condition with holes evident in places. To the rear of the buildings, there are small yards, stone outbuildings and walls (BL3, BL1, ED2, ED3). Here, overgrown vegetation has been mostly cleared, with vegetation brash and stone rubble present. Scattered vegetation includes Bramble (*Rubus fruticosus*), Ivy (*Hedera helix*), Hart's Tongue (*Asplenium scolopendrium* – stone walls) and Dock (*Rumex* sp.), with occasional young Birch (*Betula pendula*), Ash (*Fraxinus excelsior*) and Willow (*Salix* sp.).

4.3 Fauna

There is no notable fauna recorded on this site. Urban buildings and yards are not attractive to most notable fauna, although it can provide roosting sites for bat species and some birds. However, a bat and Swift survey (Sheil, 2022) found no evidence of Swift. It did recorded Swallow nests on roof timbers within the archway between Dooley's Pub and Dunlo Hill. Although some of the outbuildings had potential for roosting bat (with natural stone walls and intact roofs), no bats recorded emerging from or foraging in the vicinity of any of the buildings. This was as expected with very poor foraging conditions in the locality. A few droppings of Long-eared Bat were recorded, but this was considered to be only beneath a feeding perch of 1 bat.

Species present within M83K 2km grid (encompassing development site and including the River Suck SPA) include the protected species Otter, Red Squirrel, bats (Long-eared, Daubenton's, Lesser Noctule, PipistrelleX2), Pigmy Shrew, Hedgehog, Lizard, Frog, Pheasant, Snipe, Starling, Swift, Wood Pigeon, Sparrow, Little Egret, Mallard, Lapwing and Rock Pigeon (Biodiversityireland.ie).

4.4 Rare plants / notable species

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

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 a loss of some back yard habitats. However, this only comprises mostly artificial surfaces, bare ground and re-colonising bare ground. Some stone wall structures may be demolished, but there was no notable fauna recorded therein. As such, any ecological impact on site habitats would not be regarded as significant. It should be noted that any impact here is localised and has no bearing 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). This is most relevant during construction.

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 species that are found within the River Suck watercourse (SPA), some 500m distant. 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 SPA. With steep downward slope and/or poor surface permeability this figure would decrease.

The qualifying features of the SPA potentially impacted by the proposed development are detailed in section 3.2.

5.3.2 Assessment

(i) There is no watercourse on or near the site. As such, there is no hydrological link between the proposed works and any Natura 2000 site.
(ii) The site is some 500m distant from the SPA.
(iii) The site is separated from the SPA by public roads and urban buildings. These will buffer any run-off entering the SPA.
(iv) The land is flat.
(v) The site lands have no attraction for SPA designated bird species.
(vi) 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 Suck Callows SPA. As such, this development will not impact on its conservation objectives.

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 urban buildings with no resident fauna of note. The nature of the on-going operation of the development would not represent a significant disturbance factor, as buildings are already present on site.

A bat and Swift survey detected no potential roost sites for bats (Sheil, 2022). It did identify Swallow nests. However, the loss of these would have no impact on the nearby Natura 2000 SPA site. Ecologically the loss of Swallow nests would not be regarded as significant, albeit regrettable. The site lands have no attraction for SPA designated bird species.

None of the species recorded within the 2km square encompassing the site are qualifying interests for the SPA. None were recorded on site. Many of these species were likely recorded within, or close to, the SPA lands.

The potential for impact on the SPA is mostly indirect, as described above. The River Suck Callows (SPA) provides suitable habitat for designated bird species. These could be negatively impacted upon if sediment run-off from the works entered this watercourse. This potential impact is addressed above (5.3.2).

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. The urban town of Ballinasloe with surrounding agricultural grassland (predominantly used for grazing livestock) are the main landuses in the surrounding area. Buildings and farming activities present potential point and diffuse sources of nutrients to the aquatic environment.

The following was undertaken:

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

Both of the above indicate and urban environment of buildings with surrounding agricultural fields and buildings. Standard building guidelines (e.g. CIRIA) and County Council requirements will be applied.

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 Suck 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 aiding general ecology of the locality,

- If possible, the Swallow nests should be left undisturbed with open access to them retained. However, it is accepted that this may not be feasible based on the renovation design.

- Apply the bat report (Sheil, 2022) recommendations, notably if bats are found during works.

Appendix 1: Matrix of Screening for Appropriate Assessment elements

(European Commission, 2001)

Brief description of the project	Renovations of buildings.
Brief description of Natura 2000 site	The River Suck Callows SPA has been designated for: Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] Wetland and Waterbirds [A999]
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 reasonably small. • There is no land-take involved. • The works are c. 500m 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 18 months.
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 site is some 500m from the SPA separated by the urban environment of Ballinasloe.
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?	Galway 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, the River Suck 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:
- 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.
- Marnell, F. (undated). *Threatened Irish Wildlife – Lampreys*. NPWS leaflet.
- National Parks and Wildlife Service (NPWS). *www.npws.ie*. NPWS database e.g. Site Synopsis, Conservation Objectives, Natura 2000 data.
- 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.Sheil, C. (2022). *Bat and Swift Survey at Dunlo Hill Terrace, Dooley's Pub and adjoining property, Ballinasloe, Co. Galway*. O'BFA
- 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.*