# **Galway County Council**

# **Development of a Single Rural Dwelling House**

**Knockaloura West, Cortoon, Tuam** 

# **Appropriate Assessment Screening**

May 2020

**Galway County Council,** Aras an Chontae, Prospect Hill, Galway



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### DOCUMENT APPROVAL

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#### 1. INTRODUCTION

#### 1.1 BACKGROUND

Jennings O'Donovan & Partners Limited have been commissioned by Galway County Council to carry out a Stage I Appropriate Assessment Screening under Article 6(3) of Council Directive 92/43/EEC (Habitats Directive) for the development of a single rural dwelling house at Knockaloura West, Cortoon, Tuam, Co. Galway, hereafter referred to as the Proposed Development.

Appropriate Assessment (AA) is the process whereby the potential impacts of a project or plan are assessed in view of the sites conservation objectives. The first step in the process is to conduct AA screening to determine, on the basis of a preliminary assessment and objective criteria, whether the project or plan, alone or in combination with other projects or plans could have significant effects on the conservation objectives of a Natura 2000 site. Where significant effects are likely, uncertain or unknown at the screening stage a Natura Impact Statement (NIS) is required to enable a consent authority to carry out an appropriate assessment.

#### 1.2 AUTHOR'S QUALIFICATION AND EXPERTISE

This Stage I Appropriate Assessment Screening has been prepared on behalf of the applicant by Sarah Moore, Senior Environmental Scientist of Jennings O'Donovan & Partners Limited.

Sarah Moore is a Senior Environmental Consultant with Jennings O'Donovan & Partners Limited. She holds a Bachelor (Hons.) Degree in Environmental Science from University of Limerick and a MSc (Dist) in Environmental Engineering from Queen's University Belfast. She has worked in environmental consultancy for over ten years and is highly experienced in areas of soil and groundwater contamination, environmental coordination for large pharmaceutical companies and annual environmental returns, specifically Pollutant Release and waste Transfer Register (PRTR). Sarah's experience includes invasive species surveys, management plans, ecological studies, EIA screenings, Appropriate Assessment (AA) screenings, Stage II appropriate assessments, environmental reports, environmental impact assessments and construction environmental management plans.

#### 1.3 REGULATORY CONTEXT

Under Section 177U (1) of the Planning Acts, a Screening for AA of the Proposed Development shall be carried out by the competent authority (in this case, Galway County Council) to assess in view of best scientific knowledge, if that Proposed Development, individually or in combination with other plans or projects, is likely to have a significant effect(s) on any European sites.

Collectively, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are referred to as the Natura 2000. The legal basis on which SACs are selected and designated is the EU Habitats Directive, 92/43/EEC transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended. The designation features of SACs are referred to as Qualifying Interests (QI) and include both species (excluding birds) and habitats Similarly, Special Protection Areas (SPA's) are legislated in the Birds Directive 2009/147/EC. The designation features of SPAs are referred to as Special Conservation Interests (SCIs) which comprise bird species as well as wetland bird habitats.

In general terms, SACs and SPAs are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

Article 6, paragraphs 3 of the Habitats Directive state that:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in-combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national

authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public".

The statutory agency responsible for the European sites is the National Parks and Wildlife Service of the Department of Culture, Heritage and the Gaeltacht.

This report has been prepared in accordance with current guideline documents:

- Assessment of plans and projects significantly effecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2001)
- Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (DEHLG 2009, Revised February 2010)
- Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DoEHLG, 2009, rev 2010)
- Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg, (EC, 2000a)
- European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No.477 of 2011).
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013).
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (EC, 2007)
- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)

The following European Court and Irish High Court rulings have been considered:

- C-127/02 Waddenzee v Staatssecretaris
- C-258/11 Sweetman v An Bord Pleanála
- C-512/12 Briels
- C-387/12 & C388/15 Orleans and others v Vlaams Gewest
- C-142/15 Moorbug
- C-323/17 People Over Wind and Peter Sweetman v Coillte
- C-162/17 Grace and Sweetman
- C-883/18 Holohan and others v An Bord Pleanála
- IEHC 84 (2019) Kelly v An Bord Pleanála
- IEHC 39 (2020) Sweetman v An Bord Pleanála & Ors

Relevant plans from national to local scales are critical to inform a robust assessment of incombination impacts; these are listed below:

- National Biodiversity Action Plan, for the period 2017-2021
- River Basin Management Plan for Ireland 2018-2021
- Galway County Development Plan 2015-2021

#### 1.4 THE STAGES IN AN APPROPRIATE ASSESSMENT

Property 2

There are 4 stages in an Appropriate Assessment as outlined in the European Commission Guidance document (2001). The following is a brief summary of these steps:

Stage 1 - Screening: This stage examines the likely effects of a project either alone or incombination with other projects upon a European site and considers whether it can be objectively concluded that these effects will not be significant.

Stage 2 - Appropriate Assessment: In this stage, the impact of the project on the integrity of the European site is considered, with respect to the conservation objectives of the site and to its structure and function.

Stage 3 - Assessment of Alternative Solutions: Should the Appropriate Assessment determine that adverse impacts are likely upon the European site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts.

Stage 4 - Assessment where no alternative solutions exist and where adverse impacts remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the European site will be necessary.

As part of this Screening for Appropriate Assessment, a desk-based study of the European site within the zone of influence (ZoI) of the Proposed Development is required.

#### 1.5 SCREENING METHODOLOGY

The function of the Screening Assessment is to identify whether or not the proposal will have a likely significant effect on any European Site. In this context "likely" refers to the presence of doubt with regard to the absence of significant effects (ECJ case C-127/02) and "significant" means not trivial or inconsequential but an effect that has the potential to undermine the site's conservation objectives (ECJ case C-127/02). In other words, any effect that compromises the functioning and viability of a site and interferes with achieving the conservation objectives for the site would constitute a significant effect.

The nature of the likely interactions between the project and the integrity of a European Site will depend upon the sensitivity of the European Site's qualifying features to potential impacts arising from the project; the current conservation status of the European Site and its qualifying features; and any likely changes to key environmental indicators (e.g. water quality) that underpin the conservation status of European Sites and their qualifying features, in-combination with other plans and projects.

The European Commission (2018) Guidelines outline the stages involved in undertaking a Screening Assessment of a project that has the potential to have likely significant effects on European Sites. The methodology adopted for this Screening Assessment is informed by these guidelines and was undertaken in the following steps:

- 1. Define the project and determine whether it is directly connected with or necessary for the conservation management of European Sites
- 2. Identify other plans or projects that, in-combination with the project, have the potential to effect European Sites
- 3. Assess whether or not the project is likely to have significant effects on European Sites in the view of its conservation objectives.

#### 1.6 DESK STUDY

A desk study was carried out to collate the available information on the ecological environment of the Proposed Development site. The National Parks and Wildlife Service (NPWS) database was consulted concerning designated conservation areas and records of rare and protected plant and animal species in the vicinity of the Proposed Development. The EPA Geoportal website was used when researching European designated sites and watercourses. The National Biodiversity Data Centre (NBDC) website was also consulted.

The Galway County Development Plan 2015-2021 and the Galway County Council planning enquiry website were reviewed to identify any proposed plans or projects which may have a direct, indirect or cumulative impact with this project.

#### 1.7 FLOODING

Office of Public Works (OPW) website and the CFRAM study were accessed (May 25, 2020) to determine flood areas within and near the Proposed Development. There is no potential for flooding to occur at the Proposed Development site (**Figure 1.1**).

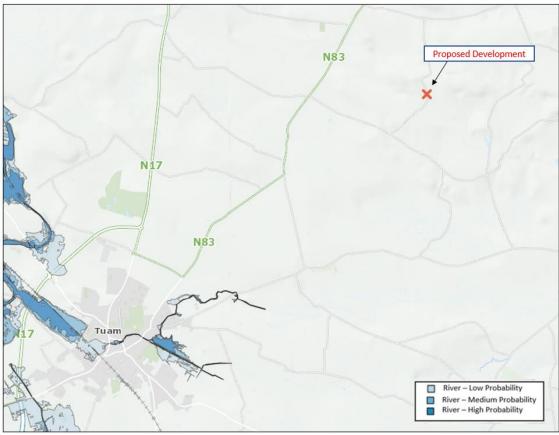


Figure 1.1 Flood Map for the Development Site (FloodInfo.ie, May 2020)

### 2. PROJECT DESCRIPTION

#### 2.1 SITE LOCATION

The Proposed Development site is located approximately 9km north-east of Tuam, a town of County Galway. The site of the Proposed Development is located off a local access road, off the N83. A national secondary road the N17 runs north of Tuam. Ireland West Airport in Knock is located along the N17, 55km from Tuam. The site area is approximately 0.31 hectares. The location of the site is outlined on Figure 2.1.

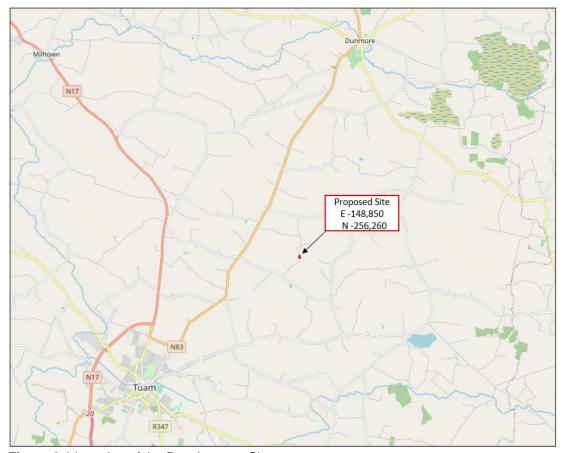


Figure 2.1 Location of the Development Site

#### 2.2 PROPOSED WORKS

The proposed works will consist of the demolition of the existing house, clearance of the existing site, construction of a new single storey, 2-bedroom, dwelling house and the installation of a new septic tank and percolation area with all ancillary site works.

The house will be constructed using traditional techniques of concrete strip foundations, block walls with a tiled timber truss roof.

The proposed access road will consist of tarmac on 200mm of CL.804 broken stone.

All surface water generated from the development will be discharged to on-site soakaways.

The wastewater system will consist of a standard septic tank or treatment plant with a percolation area, all designed and installed according to the EPA Code of Practice for single dwellings.

The works will take approximately 6-8 months to complete from demolition to handover.

#### 3. BASELINE CONDITIONS

#### 3.1 RECEIVING ENVIRONMENT

The Proposed Development site is located within the Water Framework Directive (WFD) wider catchment area of Corrib covering an area of 3113.28km² and more specifically the Clare [Galway]\_SC\_030 sub catchment (127.73km²). One (Nanny (Tuam)\_030) river water body (out of the seven within the subcatchment) is classified as "At Risk" with channelization being identified as a possible significant pressure (WFD Cycle 2 Report on Catchment Corrib, Subcatchment Clare[Galway]\_SC\_030, 2019).

An unnamed lake, is the closest waterbody to the Proposed Development site, located c. 879m southwest of the proposed site boundary. It is separated from the site boundary by extensive agricultural fields and hedgerows. The closest river waterbody to the Proposed Development is Brockagh 30, an order 2 river located 1.75km southeast. The Brockagh 30 flows in a southwesterly direction for c. 558m before merging with the River Nanny (Tuam). There is an Environment Protection Agency (EPA) water monitoring station located on the River Nanny (Tuam) before it reaches Tuam. Only one of the monitoring stations is active (RS30N010100). The latest Q value for this monitoring station (2018) was classified as '4', indicating "Good" water quality. The location of the waterbodies and the EPA water monitoring stations are shown in Figure 3.1.



Figure 3.1 Watercourses close to the Proposed Development Site

#### 4. SCREENING FOR APPROPRIATE ASSESSMENT

This AA Screening examined the likely significant effects of the Proposed Development, either alone or in-combination with other projects or plans on European sites, that were situated within a zone of influence (ZoI), or a distance that has a potential source-pathway-receptor (SPR), both direct and indirect, with the Proposed Development.

### 4.1 EUROPEAN SITES WITHIN THE ZOI OF THE PROPOSED DEVELOPMENT

The potential ZoI currently recommended for plans, is a distance of 15 km from the plan boundary and derives from UK guidance (Scott Wilson et al., 2006). For projects however, the distance could be more, or much less than 15 km, and in some cases less than 100 m, but guidance advises that this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects.

There are six (6) European Sites within 15km of the Proposed Development:

Where a European Site is located greater than 15km downstream of the Proposed Development and where a hydrological link exists these sites will also be included. However, European sites hydrologically connected to the proposed works that are located outside the 15km buffer and are located within coastal zones are excluded as they are outside the zone of influence (ZoI) for impacts to cause significant effects.

There are no European Sites located outside the 15km buffer that are considered to be within the ZoI of the Proposed Development.

The locations of the six (6) designated sites are shown on Figure 4.1 and the Qualifying Interests (QI) or Species of Conservation Interest (SCI) of these designated sites are outlined in Table 4.1.

- 1. Lough Corrib SAC
- 2. Williamstown Turlough SAC
- 3. Lough Lurgeen Bog/ Glenamaddy Turlough SAC
- 4. Derrinlough (Cloonkeenleananode) Bog SAC
- 5. Shankill West Bog SAC
- 6. Levally Lough SAC

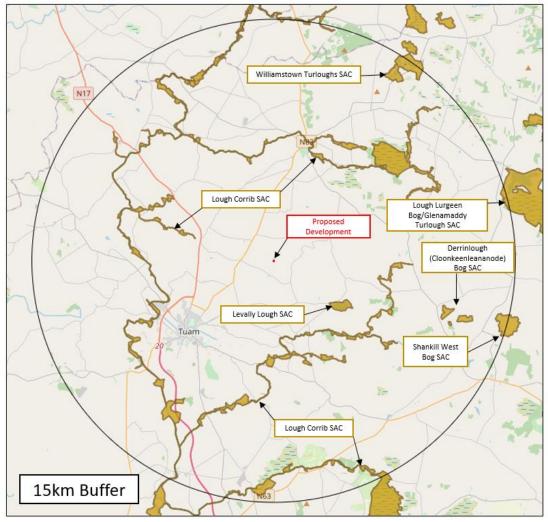


Figure 4.1 European Sites located within 15km of the Proposed Development Site

Table 4.1 European Sites within 15km to the Proposed Development

European Site	Qualifying Habitats	Qualifying Species	Species of Special Conservation Interest (SCI)
European Site  Lough Corrib SAC		Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]  Austropotamobius pallipes (White-clawed Crayfish) [1092]  Petromyzon marinus (Sea Lamprey) [1095]  Lampetra planeri (Brook Lamprey) [1096]  Salmo salar (Salmon) [1106]  Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]  Lutra lutra (Otter) [1355]  Najas flexilis (Slender Naiad) [1833]  Hamatocaulis vernicosus (Slender Green Feathermoss) [6216]	
	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]  Bog woodland [91D0]		

European Site	European Site Qualifying Habitats		Species of Special Conservation Interest (SCI)	
Williamstown Turlough SAC	Turloughs [3180]	na	na	
Lough Lurgeen Bog/Glenamaddy Turlough SAC	Turloughs [3180]  Rivers with muddy banks with <i>Chenopodion rubri</i> p.p. and <i>Bidention</i> p.p. vegetation [3270]  Active raised bogs [7110]  Degraded raised bogs still capable of natural regeneration [7120]  Depressions on peat substrates of the Rhynchosporion [7150]	na	na	
Derrinlough (Cloonkeenleananode) Bog SAC	Degraded raised bogs still capable of natural regeneration [7120]	na	na	
Shankill West Bog SAC	Active raised bogs [7110]  Degraded raised bogs still capable of natural regeneration [7120]  Depressions on peat substrates of the Rhynchosporion [7150]			
Levally Lough SAC	Turloughs [3180]	na	Na	

A source-pathway-receptor (SPR) model was used to assess if any of the six European Sites located within 15km of the proposed developed were actually within the ZoI for impacts from the Proposed Development. This assessment is outlined in Table 4.2.

Table 4.2 SPR assessment of the European Sites located with 15km of the Proposed Development

European Site	Distance from Proposed Development Site	Hydrological Pathway	Do Qualifying Habitats occur within the Zol of the Project?	Does the project have the potential to interact with Qualifying Species?	Is the European Site within the Project Zone of Influence?
Lough Corrib SAC	4.98km	No. There is no hydrological link between the Proposed Development and this SAC.	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the qualifying habitat of this SAC.	No. The distance between the proposed works and this SAC and no hydrological link means there is no potential for the proposed works to impact the qualifying species of this SAC.	No. This SAC is not located within the zone of influence of the project.
Williamstown Turlough SAC	13.29km	No. There is no hydrological link between the Proposed Development and this SAC	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the qualifying habitat of this SAC.	na	No. This SAC is not located within the zone of influence of the project.
Lough Lurgeen Bog/ Glenamaddy Turlough SAC	14.53km	No. There is no hydrological link between the Proposed Development and this SAC.	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the five qualifying habitats of this SAC.	na	No. This SAC is not located within the zone of influence of the project.
Derrinlough (Cloonkeenleananode) Bog SAC	10.79km	No. There is no hydrological link between the Proposed Development and this SAC.	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the qualifying habitat of this SAC.	na	No. This SAC is not located within the zone of influence of the project.
Shankill West Bog SAC	14.11km	No. There is no hydrological link between the Proposed Development and this SAC.	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the three qualifying habitats of this SAC.	na	No. This SAC is not located within the zone of influence of the project.
Levally Lough SAC	4.26km	No. There is no hydrological link between the Proposed Development and this SAC.	No. There is no hydrological pathway between the proposed works and the SAC. Also the distance between the site of the proposed works and the SAC means there is no potential for the proposed works to impact the qualifying habitat of this SAC.	na	No. This SAC is not located within the zone of influence of the project.

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#### 5. SCREENING ASSESSMENT

This section will examine the likelihood of significant effects on European Site's within the project's ZoI and the possibility that the project alone or in-combination with other plans or projects, would undermine the conservation objectives of the European Sites.

There are six European Sites within 15km of the proposed development. However, none of these sites are within the ZoI of the proposed development.

#### 5.1 CUMULATIVE IMPACTS

As part of Stage 1 Screening, in addition to the Project, other relevant projects and plans which may interact with the proposal must also be considered. This step aims to identify at this early stage any possible significant effects on the European Sites from the Project in-combination or cumulatively with other plans and projects. This includes an assessment of those plans and projects which would have the potential to interact or impact on any designated European Site, resulting in a cumulative or in-combination effect, either temporally or spatially/geographically, with respect to the sensitive qualifying interests or conservation objectives of such designations.

Given the scale, nature and limited duration of the proposed works themselves, there is no potential for the Project to give arise to significant effects 'alone'; and therefore no potential for the scheme to interact with any other project to contribute to cumulative impacts on any European Site.

#### 6. CONCLUSION

It can be objectively concluded that there are not likely to be significant effects on any European Site as a result of the proposed works at Knockaloura West, Cortoon, Tuam, Co. Galway. Therefore, an Appropriate Assessment is not required.

#### 7. REFERENCES

European Commission (2001) Assessment of Plans and Projects significantly affecting European Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

European Commission (2013) Interpretation manual of European Union habitats EUR 28. European Commission, DG Environment.

European Commission (2018) Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC.

European Union Birds Directive (1979) Council Directive 79/209/EEC of 2 April 1979 on the conservation of wild birds. Brussels: The Council of the European Communities.

European Union Habitats Directive (1992) Council Directives 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

Galway County Council Planning Portal http://www.galway.ie/en/services/planning/onlineplanningsystems/

NPWS (2013) Site Synopsis: Levally Lough SAC [000295]. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

NPWS (2013) Site Synopsis: Shankill West Bog SAC 000326. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) Site Synopsis: Williamstown Turloughs SAC 002296. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015) Conservation Objectives: Shankill West Bog SAC 000326. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2015) Site Synopsis: Lough Corrib SAC 000297. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

NPWS (2015) Site Synopsis: Lough Lurgeen Bog/Glenamaddy Turlough SAC 000301. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2016) Conservation Objectives: Lough Lurgeen Bog/Glenamaddy Turlough SAC 000301. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2016) Site Synopsis: Derrinlough (Cloonkeenleananode) Bog SAC [002197]. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

NPWS (2018) Conservation Objectives: Williamstown Turloughs SAC 002296. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.

NPWS (2020) Conservation Objectives: Levally Lough SAC [000295]. Generic Version 7.0. Department of Culture, Heritage and the Gaeltacht.

NPWS (2020) Conservation Objectives: Derrinlough (Cloonkeenleananode) Bog SAC [002197]. Generic Version 7.0. Department of Culture, Heritage and the Gaeltacht.