APPROPRIATE ASSESSMENT SCREENING REPORT FOR PROPOSED DEVELOPMENT SITE AT MONKSLAND, ATHLONE, CO. ROSCOMMON AND POSSIBLE IMPACTS ON ANY PROTECTED SITES (SAC/SPA)

Appropriate Assessment Screening
In accordance with the requirements of Article 6 (3) of the Habitats Directive (Council Directive 92/43/EEC)

Prepared for
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1. INTRODUCTION

I was contracted by Sweeney Architects, Longford to prepare an Appropriate Assessment screening report for a proposed development site at Monksland, Athlone, Co. Roscommon.

The proposed development site is situated at Sli An Choiste, Monksland, Co. Roscommon. The proposed development will consist of the construction of 51 no. residential units with all associated site development works including widening of existing site entrance, construction of access roads and footpaths, public & private open spaces, car parking spaces, electric car charging points, boundary wall/fence, pedestrian link, street lighting, ducting for utilities, hard & soft landscaped areas, removal of existing trees and planting of new native trees, hedges and shrubs , formation of new connections to existing foul services and to pumping station, attenuation tank for surface water drainage and connection to existing utilities and all associated site works and services.

This Appropriate Assessment screening report pertains to Lough Ree SAC 000440, Lough Ree SPA 004064, River Shannon Callows SAC 000216 and Middle Shannon Callows SPA 004096 which are the closest protected sites to the proposed development site (distance range of 1.94 km – 2.6km).

This Appropriate Assessment Screening report has been prepared in compliance with Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DoEHLG 2009, February 2010) and the European Communities (Birds and Natural Habitats) Regulations 2011 (DoEHLG) in order to assess any potential impacts of this development project on the Natura 2000 network.
The closest Protected Sites are Lough Ree SAC 000440 and Lough Ree SPA 004064 which at their closest point is approximately 1.94 km to the north-east of the site. River Shannon Callows SAC and Middle Shannon Callows SPA lie 2.6km to the south east of the proposed site.
Therefore, Appropriate Assessment under Article 6 (3) of the Habitat's Directive is required.
This report provides the information required in order to establish whether or not the proposed development is likely to have a potential impact on these protected sites in relation to their conservation objectives and specifically on the habitats and species for which these sites have been designated.

1.1 Protected Sites

In accordance with the Guidance of Planning Authorities, it is suggested that Appropriate Assessment screening takes into consideration the likely effects on any protected site (SACs or SPAs) within 15km of the proposed works site. A 15 km zone of impact was assessed for the proposed site.

Appropriate Assessment screening takes into consideration the likely effects on any protected site (SAC or SPA) within 15km of the proposed works sites. These sites are listed in Table 1.

SITE	PROTECTED SITE	SITE CODE	DISTANCE FROM SITE
Site at Monksland	Lough Ree SAC	000440	1.94 km to north-east
	Lough Ree SPA	004064	1.94 km to north-east
	River Shannon Callows SAC	000216	2.6 km to south-east
	Middle Shannon Callows SPA	004096	2.6 km to south-east
	Castlesampson Esker SAC	001625	5.74 km to south-west
	Ballynamona Bog and Corkip Lough SAC	002339	5.95 km to north-west
	Crosswood Bog SAC	002337	7.25 km to south east
	Cam Park Bog SAC	002336	9.73 km to east
	Lough Funshinagh SAC	000611	10.3 km to north-west
	Pilgrims Road Esker SAC	001776	10.5 km to south
	Mongan Bog SAC	000580	11.1 km to south east
	Mongan Bog SPA	004017	11.1 km to south-east
	Fin Lough (Offaly) SAC	000576	12.3km to south east
	Lough Croan Turlough SPA	004139	13.5 km to north west
	Lough Croan Turlough SAC	000610	13.5 km to north west
	Killeglan Grassland	002214	13.8 km to west

	SAC		

Table 1 – Protected Natura 2000 sites within 15km of site

There are 16 protected sites within 15km of the proposed development site. Only the first four sites listed in Table 1 will be considered further. The remaining 12 sites range from 5.74 km to 13.8 km from the proposed site. There is no hydrological connectivity between the proposed site and these twelve sites, therefore adverse effects can be ruled out.

Table 2 – Qualifying features and threats to each protected site

SITE	SITE CODE	DISTANCE FROM SITE	QUALIFYING FEATURES (Qualifying Interests or Special Conservation Interests)	SITE DESCRIPTION AND VULNERABILITY/THREATS
Lough Ree SAC	000440	1.94 km to north east	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Alkaline fens [7230] Limestone pavements [8240] Bog woodland	Lough Ree is the third largest lake in Ireland and is situated in an ice-deepened depression in Carboniferous limestone on the River Shannon system between Lanesborough and Athlone. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi- aquatic habitats also occur. The lake has been classified as mesotrophic in quality, but the size of the system means that a range of conditions prevail depending upon, for example, rock type. This gives rise to local variations in nutrient status and pH, which in turn results in variations in the phytoplankton and macrophyte flora. The water of Lough Ree tends to be strongly peat-stained, restricting macrophytes to depths of less than 2 m, and as a consequence, macrophytes are restricted to sheltered bays, where a typical Shannon flora occurs. Reedbeds of Common Reed (Phragmites australis) are an extensive habitat in a number of more sheltered places around the lake Dry broadleaved semi-natural woodland occurs in several places around the lake, most notably at St John′s Wood and on Hare Island. St John′s Wood is recognised as the largest and most natural woodland in the Midlands. Small examples of raised bog occur, which are of interest in that they show a natural transition through wet woodland and/or swamp to lakeshore habitats The lake itself contains one of only two populations in Ireland of the

			[91D0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Lutra lutra (Otter) [1355]	endangered fish species, Pollan (Coregonus autumnalis). Small flocks of Greenland White-fronted Goose, an Annex I species on the E.U. Birds Directive, use several areas of callowland around the lake in winter. Some of the lake islands provide nesting sites for Common Tern, a species listed on Annex I of the E.U. Birds Directive. The lake also provides excellent breeding habitat for wildfowl, including Common Scoter (30-40 pairs), a rare breeding species listed as ″Endangered″ in the Red Data Book, and Tufted Duck (>200 pairs). There is a population of Otter around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the E.U. Habitats Directive. **Threats identified by NPWS** Land uses within the site include recreation in the form of cruiser hire, angling, camping, picnicking and shooting. Chalet accommodation occurs at a few locations around the lake. Low-intensity grazing occurs on dry and wet grassland around the shore, and some hay is made within the site. Some of these activities are damaging, but in a very localised way, and require careful planning. The main threat to the aquatic life in the lake comes from artificial enrichment of the waters by agricultural and domestic waste, and also by peat silt in suspension which is increasingly limiting the light penetration, and thus restricting aquatic flora to shallower waters. At present Lough Ree is less affected by eutrophication than Lough Derg. Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent quality. St John′s Wood is particularly important; it is one of the very few remaining ancient woodlands in Ireland. The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

Lough Ree SPA	004064	1.94km to north-east	Little Grebe (Tachybaptus ruficollis) [A004] Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Mallard (Anas platyrhynchos) [A053] Shoveler (Anas clypeata) [A056] Tufted Duck (Aythya fuligula) [A061] Common Scoter (Melanitta nigra) [A065] Goldeneye (Bucephala clangula) [A067] Coot (Fulica atra) [A125] Golden Plover (Pluvialis apricaria)	Situated on the River Shannon between Lanesborough and Athlone, Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. The lake has a very long, indented shoreline and hence has many sheltered bays. It also has a good scattering of islands, most of which are included in the site. Lough Ree is one of the most important Midland sites for wintering waterfowl. Greenland White-fronted Goose has been recorded on occasion on the flooded margins of the site. Lough Ree SPA is of high ornithological importance for both wintering and breeding birds. It supports nationally important populations of eleven wintering waterfowl species. The site has a range of breeding waterfowl species, notably nationally important populations of Common Scoter and Common Tern. Of particular note is the regular presence of three species, Whooper Swan, Golden Plover and Common Tern, which are listed on Annex I of the E.U. Birds Directive. Parts of Lough Ree SPA are Wildfowl Sanctuaries.

			[A140] Lapwing (Vanellus vanellus) [A142] Common Tern (Sterna hirundo) [A193] Wetland and Waterbirds [A999]	
River Shannon Callows SAC	000216	2.6 km to south-east	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,	The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along much of its length the site is bordered by raised bogs (many, but not all, of which are subject to large-scale harvesting), esker ridges and limestone-bedrock hills. The soils grade from siltyalluvial to peat. This site has a common boundary, and is closely associated, with two other sites with similar habitats, River Suck Callows and Little Brosna Callows. **Specific Threats identified by NPWS** The River Shannon is used increasingly for recreational purposes with coarse angling and boating accounting for much of the visitor numbers. Intermittent and scattered damage to the habitats has occurred due to over-deepening of drains and peat silt deposition, water-skiing, ploughing and neglect of hay meadow (or reversion to pasture). However, none of these damaging activities can yet be said to be having a serious impact. Threats to the quality of the site may come from the siting of boating marinas in areas away from centres of population, fertilising of botanically-rich fields, the use of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow, disturbance of birds by

			Salicion albae) [91E0] Lutra lutra (Otter) [1355]	boaters, anglers, birdwatchers and the general tourist. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming. The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland, and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive occur within the site – Molinia meadows and lowland hay meadows with good examples of a further three Annex habitats (two with priority status). In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration, and in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.
Middle Shannon Callows SPA	004096	2.6 km to south-east	Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Corncrake (Crex crex) [A122] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus	The Middle Shannon Callows SPA is a long and diverse site which extends for approximately 50 km from the town of Athlone to the town of Portumna; it lies within Counties Galway, Roscommon, Westmeath, Offaly and Tipperary. The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The callows are mainly too soft for intensive farming but are used for hay or silage or for summer grazing. Other habitats of smaller area which occur alongside the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. The diversity of semi-natural habitats present and the sheer size of the site attract an excellent diversity of bird species, including significant populations of several. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

			vanellus) [A142] Black-tailed Godwit (Limosa limosa) [A156] Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999]	Whooper Swan, Wigeon, Corncrake, Golden Plover, Lapwing, Black-tailed Godwit and Black-Headed Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds The Middle Shannon Callows qualifies as a site of international importance as it regularly supports in excess of 20,000 wintering waterbirds The callow grasslands provide optimum feeding grounds for these various species of waterfowl, while many of the birds also roost or rest within the site. The Shannon Callows is also an important site for breeding waders with the total population on the Shannon and Little Brosna Callows being one of three major concentrations in Ireland and Britain in 1987. The Middle Shannon Callows SPA is an internationally important site that supports an assemblage of over 20,000 wintering waterbirds. It holds internationally important populations of two species - Whooper Swan and Black-tailed Godwit. In addition, there are four species that have wintering populations of national importance. The site also supports a nationally important breeding population of Corncrake. Of particular note is that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Corncrake and Golden Plover.

Only four protected sites Lough Ree SAC, Lough Ree SPA, River Shannon Callows SAC and Middle Shannon Callows SPA will be considered further. None of the other sites or their qualifying interests will be affected by this proposed development.
Lough Ree SAC and SPA are located approximately 1.94km to the north west of the proposed site and River Shannon Callows SC/ Middle Shannon Callows SPA are located approximately 2.6 km to south east of the proposed site at Monksland.

Lough Ree SPA is selected as a Special Protection Area for the following bird species - Little Grebe, Whooper Swan, Wigeon, Teal, Mallard, Shoveler, Tufted Duck, Common Scoter, Goldeneye, Coot , Golden Plover, Lapwing, Common Tern and Wetland and Waterbirds. None of these bird species will be affected by this proposed development.

Middle Shannon Callows SPA is designated for Whooper Swan, Wigeon, Corncrake, Golden Plover, Lapwing, Black-tailed Godwit, Black-headed Gull and Wetland and Waterbirds. None of these species will be affected by the proposed development which lies over 2.6 km from the site.

Neither of these two SPA's will be considered further.

2. METHODOLOGY OF SCREENING

This screening report examines whether the effects of the proposed housing development project at Monksland townland will have a negative effect on Lough Ree SAC River Shannon Callows SAC or on their Qualifying Interests.

2.1 Appropriate Assessment

The assessment of a proposed project likely to affect a Natura 2000 site is a 4-stage process -

The assessment of a proposed project likely to affect a Natura 2000 site is a 4-stage process

1. Screening/Test of Significance – identifies the likely impacts upon a Natura 2000 site of the particular project and decides whether these impacts are significant or not.
2. Appropriate Assessment – the consideration of the impact of the project on the Natura 2000 site with respect to sites structure and function and its conservation objectives. Where there are adverse impacts there must be an assessment of potential mitigation of those impacts. The results are presented in a Natura Impact Statement (NIS).
3. Assessment of Alternative Solutions – explores alternative ways of conducting the project that avoid adverse impacts on the Natura 2000 site
4. Assessment where adverse impacts remain – an assessment of compensatory measures where an assessment of Imperative Reasons for Overriding Public Interest, it is deemed that the project should continue.

This report is comprised of the ecological impact assessment and testing required under the provisions of Article 6(3) by means of the first stage of Appropriate Assessment – **Stage 1 - the screening process**.
EU Guidance states:
"*This stage examines the likely effects of a project or plan, either alone or 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*".

This report also provides the information required for the Competent Authority to complete the Appropriate Assessment (Stage 2) should this be necessary in the opinion of the Competent Authority. Screening has been undertaken in accordance with the European Commission's Guidance on Appropriate Assessment (European Commission, 2001) which comprises the following:

1. Description of the Plan
2. Identification of Natura 2000 Sites potentially affected by the Plan
3. Identification and Description of Individual and Cumulative impacts likely to result from the Plan
4. Assessment of the Significance of the impacts identified on the Conservation Objectives of the site(s)
5. Exclusion of sites where it can be objectively concluded that there will be no significant impacts on conservation objectives

Following the guidelines set out by NPWS (2009), Appropriate Assessment Screening (Phase 1 - Appropriate Assessment) is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the EU Habitats Directive –

(1) Is the plan or project directly connected to or necessary for the management of the site?
(2) Is the plan or project, alone or in combination with other such plans or projects likely to have significant negative effects on a Natura 2000 site(s) in view of the conservation objectives of that site(s)?

The proposed construction works do not comply with the first screening test as the proposed development is not directly connected to, or necessary for the management of any Natura 2000 site. This screening exercise will therefore inform the Appropriate Assessment process in determining whether the proposed development, alone or in combination with other plans or projects, is likely to have significant effects on the Natura 2000 sites within the study area.
If effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overtly complicated, then the Appropriate Assessment process must proceed to Stage 2 Appropriate Assessment and the preparation of a Natura Impact Statement (NIS).

2.2 Guidance and Data Sources

The following documents have been used to complete this Stage 1 Appropriate Assessment:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010).
- Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities (Reference: NPW 1/10 & PSSP 2/10).
- Managing Natura 2000 Sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- Appropriate Assessment Mapping Tool at www.gis.epa.ie/EPAMaps/AAGeoTool

3. DESCRIPTION OF THE PROJECT

The proposed development site is a greenfield site situated at Sli An Choiste, Monksland, Co. Roscommon. The site is situated to the west of Athlone Town and west of the River Shannon.

The proposed development will consist of the construction of 51 no. residential units which comprises of (a) Type A- 12 no. two storey 2 bed semi-detached houses (b.) Type B - 18 no. two storey 3 bed semi-detached houses. (c.) Type B1 - 2 no. two storey 3 bed semidetached houses (d.) Type B2 - 4 no. two storey 3 bed semi-detached houses. (e.) Type C- 9 no. two storey 2 bed terraced houses, f.) Type D - 1 no. single storey 3 bed detached house g.) Type D1 - 1 no. single storey 3 bed detached house g.) Type E - 4 no. single storey 2 bed semidetached houses with all associated site development works including widening of existing site entrance, construction of access roads and footpaths, public & private open spaces, car parking spaces, electric car charging points, boundary wall/fence, pedestrian link, street lighting, ducting for utilities, hard & soft landscaped areas, removal of existing trees and planting of new native trees, hedges and shrubs , formation of new connections to existing foul services and to pumping station, attenuation tank for surface water drainage and connection to existing utilities and all associated site works and services.

Figure 1 – position of proposed site for housing indicated by red star. Lough Ree SAC/SPA is indicated by red/pink hatching 1.94 km to north-east of site and River Shannon Callows SAC/Middle Shannon Callows SPA 2.6km to south-east of site

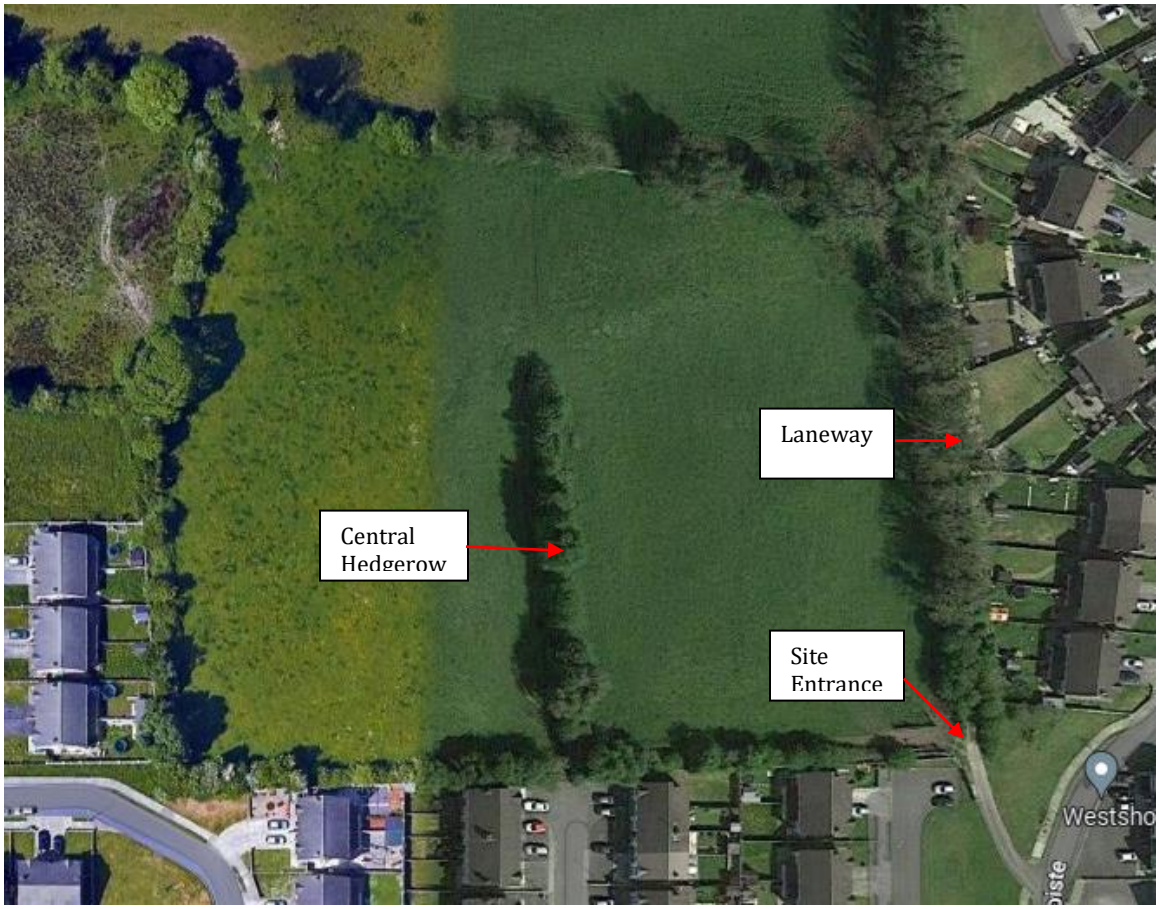

Figure 2 – Aerial photo of proposed site. The habitat on site is improved agricultural grassland surrounded by mature hedgerows and tree lines

SITE VISIT

A site visit was conducted on 5th December 2022 to conduct an ecological walkover survey and survey the site for invasive plant species. The entrance to the site is at the south-east corner of the site. The site is currently a greenfield site. The site is comprised of improved agricultural grassland surrounded by mature hedgerows/treelines. The site is partly divided by a mature treeline running north south from the centre of the southern site boundary. A mature laneway flanked by mature hedgerow on both sides runs in a northerly direction from the entrance gate and forms the eastern boundary of the site.

The eastern boundary is comprised of mature hawthorn, ash and blackthorn. The ash is heavily ivy-covered. The northern site boundary is comprised of mainly mature ash trees – many with signs of of Ash die-back disease. There is also hawthorn in the northern boundary. A mature ash showing signs of ash-die back disease is situated approximately halfway along length of western boundary. Briars are encroaching into the field from the western boundary.

The southern boundary is comprised mainly of mature hawthorn, blackthorn and some birch, with a cement wall behind the treeline.

The hedgerow projecting into the field from the southern boundary is comprised of mainly mature hawthorn.

Signs of badgers feeding (snuffle holes) were recorded at the north-east corner of the field and along the northern boundary. Badgers pass through the northern boundary hedge. The field boundaries and the laneway running north from the entrance gate were surveyed for badger setts. No badger setts were located. Any badger setts are most likely to be situated to the north of the site.

No invasive plants were recorded on site.

PHOTOGRAPHS

Photo 1 – entrance gate to site and entrance to laneway on right hand side (red arrow)

Photo 2 – eastern boundary of site with laneway behind hedgerow

Photo 3 – ivy covered ash in eastern boundary hedgerow

Photo 4 – ivy covered ash in eastern boundary hedgerow

Photo 5 – mature ash trees on eastern boundary

Photo 6 – mature ash trees on eastern boundary with heavy ivy cover

Photo 7 – north east corner of site looking along northern boundary

Photo 8 – badger snuffle holes close to northern boundary of site

Photo 9 – looking south across site from northern boundary hedge

Photo 10 – Ivy covered hawthorn on northern boundary

Photo 11 – heavy ivy cover on mature ash on northern boundary with ash die-back disease

Photo 12 – canker on ash bough caused by ash die-back disease – cavities provide potential roosting sites for bats

Photo 13 – base of mature ash tree in treeline of northern boundary

Photo 14 – badger latrine close to northern boundary of site

Photo 15 – badger trails from site through northern treeline

Photo 16 – north-west corner of site

Photo 17 – western boundary of site

Photo 18 – mature ash tree on western boundary of site

Photo 19 – western boundary of site – looking south

Photo 20 – western boundary of site – looking south

Photo 21 – south western corner of site backing onto rear gardens of adjacent estate

Photo 22 – southern boundary treeline with concrete wall to rear of treeline – looking east

Photo 23 – fox trail in grass along southern boundary

Photo 24 – southern treeline with cement wall to rear

Photo 25 – central treeline in field comprised mainly of hawthorn

Photo 26 – northern end of central treeline in field comprised mainly of hawthorn

Photo 27 – southern boundary looking towards entrance gate

Photo 28 – mature lane running north beside entrance gate

4. RECEIVING ENVIRONMENT

Identification of Natura 2000 sites potentially impacted by the proposed works

The Habitats Directive protects important habitats and species within Special Areas of Conservation (SACs). It lists certain habitats (Annex I) and species (Annex II) for special protection. A second European Directive – the Birds Directive – seeks to protect birds of conservation importance by the designation of Special Protection Areas (SPA's). Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites.

European and national legislation places an obligation on Ireland to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas.

Favourable conservation status of a habitat is achieved when:

- Its natural range, and the area it covers within that range, is stable of increasing, and
- The ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population data on the species concerned indicate that it is maintaining itself, and
- The natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and
- There is, and probably will continue to be a sufficiently large habitat to maintain its populations on a long-term basis.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition.

4.1 Description of the Receiving Environment

Appropriate Assessment screening is required by National Parks and Wildlife Service (NPWS) to determine the potential for significant effects on any Natura 2000 site (SAC or SPA) or its conservation objectives as a result of the proposed construction works at the proposed site.
The only Natura 2000 sites which has the potential be adversely affected by these works are Lough Ree SAC and River Shannon Callows SAC. Lough Ree SAC is situated 1.94 km to the north east of the site and River Shannon Callows 2.6 km to the south east.
An Environmental Protection Agency EPA map was consulted to investigate if there are any watercourses linking the proposed site to either of these SAC sites. There are no connecting watercourses.

A Site Synopsis for Lough Ree SAC was prepared in 2019. A Conservation Objectives document was prepared in 2016 (NPWS, 2016)
The site synopsis is included in the Appendix of this report.
A Site Synopsis for River Shannon Callows SAC was prepared in 2012. A Conservation Objectives document was prepared in 2022 (NPWS, 2022)
The site synopsis is included in the Appendix of this report.

A description of the Natura 2000 sites potentially impacted upon the proposed works including conservation objectives, qualifying interests, vulnerability and conservation status of habitats/species within individual sites and conservation status of qualifying interests is provided below.

Lough Ree SAC (Site Code 000440)
Lough Ree is the third largest lake in Ireland and is situated in an ice-deepened depression in Carboniferous limestone on the River Shannon system between Lanesborough and Athlone. It has a very long, indented shoreline and hence has many sheltered bays.
Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi- aquatic habitats also occur.
The lake has been classified as mesotrophic in quality, but the size of the system means that a range of conditions prevail depending upon, for example, rock type. This gives rise to local variations in nutrient status and pH, which in turn results in variations in the phytoplankton and macrophyte flora.

The Qualifying Interests for Lough Ree SAC are:

- Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
- Active raised bogs

- Degraded raised bogs still capable of natural regeneration
- Alkaline fens
- Limestone pavements
- Bog woodland
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
- Lutra lutra (Otter)

The water of Lough Ree tends to be strongly peat-stained, restricting macrophytes to depths of less than 2 m, and as a consequence, macrophytes are restricted to sheltered bays, where a typical Shannon flora occurs.
Reedbeds of Common Reed (Phragmites australis) are an extensive habitat in a number of more sheltered places around the lake

Dry broadleaved semi-natural woodland occurs in several places around the lake, most notably at St John′s Wood and on Hare Island. St John′s Wood is recognised as the largest and most natural woodland in the Midlands.
Small examples of raised bog occur, which are of interest in that they show a natural transition through wet woodland and/or swamp to lakeshore habitats
The lake itself contains one of only two populations in Ireland of the endangered fish species, Pollan (Coregonus autumnalis).
Small flocks of Greenland White-fronted Goose, an Annex I species on the E.U. Birds Directive, use several areas of callowland around the lake in winter.

Some of the lake islands provide nesting sites for Common Tern, a species listed on Annex I of the E.U. Birds Directive.
The lake also provides excellent breeding habitat for wildfowl, including Common Scoter (30-40 pairs), a rare breeding species listed as ″Endangered″ in the Red Data Book, and Tufted Duck (>200 pairs).
There is a population of Otter around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the E.U. Habitats Directive.

Threats identified by NPWS
Land uses within the site include recreation in the form of cruiser hire, angling, camping, picnicking and shooting. Chalet accommodation occurs at a few locations around the lake. Low-intensity grazing occurs on dry and wet grassland around the shore, and some hay is made within the site. Some of these activities are damaging, but in a very localised way, and require careful planning.
The main threat to the aquatic life in the lake comes from artificial enrichment of the waters by agricultural and domestic waste, and also by peat silt in suspension which is

increasingly limiting the light penetration, and thus restricting aquatic flora to shallower waters. At present Lough Ree is less affected by eutrophication than Lough Derg.

Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent quality. St John′s Wood is particularly important; it is one of the very few remaining ancient woodlands in Ireland.
The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

River Shannon Callows SAC 000216
The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along much of its length the site is bordered by raised bogs (many, but not all, of which are subject to large-scale harvesting), esker ridges and limestone-bedrock hills. The soils grade from siltyalluvial to peat. This site has a common boundary, and is closely associated, with two other sites with similar habitats, River Suck Callows and Little Brosna Callows.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive

- Molinia Meadows
- Lowland Hay Meadows
- Alkaline Fens
- Limestone Pavement*
- Alluvial Forests*
- Otter (Lutra lutra)

Specific Threats identified by NPWS
The River Shannon is used increasingly for recreational purposes with coarse angling and boating accounting for much of the visitor numbers. Intermittent and scattered damage to the habitats has occurred due to over-deepening of drains and peat silt deposition, water-skiing, ploughing and neglect of hay meadow (or reversion to pasture). However, none of these damaging activities can yet be said to be having a serious impact.
Threats to the quality of the site may come from the siting of boating marinas in areas away from centres of population, fertilising of botanically-rich fields, the use of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow, disturbance of birds by boaters, anglers, birdwatchers and the general tourist. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland, and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive occur within the site – Molinia meadows and

lowland hay meadows with good examples of a further three Annex habitats (two with priority status).
In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration, and in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.

5. DESCRIPTION OF POTENTIAL IMPACTS

The proposed site lies 1.94 km distant from Lough Ree SAC and 2.6 km distant from River Shannon Callow SAC. There are no hydrological links between the proposed building site and these two protected sites. There fore there is no potential for adverse affects.

6. ASSESSMENT OF SIGNIFICANCE

In determining the potential for significant effects, a number of factors have been taken into account. This assumes the absence of any controls, conditions or mitigation measures.
Firstly, the sensitivity and reported threats to European sites were evaluated. Secondly, the individual elements of the proposed project and the potential effects they may cause to the sites were considered. The elements of the proposed project with potential to cause effects to the integrity of European sites are presented in Table 2.

Sites are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are no pathways for effects such as hydrological links between activities of the proposed project and the European site being screened.
- Where the site is located at a distance from proposed project such that effects are not foreseen and
- Where known threats or vulnerabilities at a site cannot be linked to potential effects that may arise from the proposed project.

The following parameters are described when characterizing impacts - **Direct and Indirect Impacts**, **Magnitude** size of an impact (high, medium, low, very low, negligible), **Extent** (the area over which the impact occurs), **Duration** Time impact is expected to last (Temporary (up to 1 year), Short term effects would take 1-7 years to be mitigated), Medium term (effects would take 7-15 years to mitigate), Long term (effects would take 15-60 years to be mitigated), Permanent (effects would take 60+ years to be mitigated) and **Likelihood** the probability of the effect occurring (Certain/Near certain >95% chance of occurring, Probable 50 – 95% chance of occurring, Unlikely 5-50% chance of occurring, Extremely unlikely <5% chance of occurring).

The Habitats Direct requires the focus of the assessment at this stage to be on the integrity of the site as indicated in its Conservation objectives. It is an aim of NPWS to

draw up conservation management plans for all areas designated for nature conservation, with clear objectives for the conservation of the features of interest within a site.
Site Specific Conservation Objectives have been prepared for a number of European sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets which define the character habitat.
EU guidance outlines the type of effects that may affect European sites. These effects are listed in Table 3.
Table 3 summarises the project's construction, operation and decommissioning phases, with special reference to their impact, if any, on any Natura 2000 site (European Commission 2001) - Assessment of plans and projects significantly affecting Natura 2000 sites – methodological guidance on the provisions of Article 6(3) and 6 (4) of the Habitats Directive 92/43/EEC

Size and Scale

- Land-take
- Distance from Natura 2000 site or key features of the site
- Resource requirements (Water abstraction etc)
- Emissions (disposal to land, water or air)
- Excavation requirements
- Transportation requirements
- Duration of construction, operation, decommissioning etc
- Reduction of habitat area
- Disturbance to key species
- Habitat or species fragmentation
- Reduction in species density
- Changes in key indicators of conservation value (water quality etc)
- Climate change
- Key relationships that define the structure of the sites

Table 3 - Likely direct, indirect or secondary impacts of the proposed works (either alone or in combination with any other plans or projects) on Natura 2000 sites within 15km radius of the site by virtue of:

ITEMS	PROJECT FEATURES	DIRECT OR INDIRECT IMPACT ON NATURA 2000 SITES?
Size, scale & land-take	This project is classified as a medium-scale development. No land situated within a Natura 2000 site	No
Distance from	Closest site is Lough	No

Natura 2000 site	Ree SAC SAC 000440 which is ca. 1.94km to the north east of the proposed site at its nearest point	
Resource requirements (water extraction etc.)	There are no resource requirements such as water extraction required for this project. Therefore, no interactions with resources necessary for the maintenance of the ecological integrity of any European site.	No impact
Emissions (disposal to land, water or air)	Emissions before and after the scheme are not expected to increase significantly. Existing emissions can be expected to increase during the construction period, eg noise levels. However, given the proposed small scale development these are expected to be negligible.	No impact
Excavation requirements	Excavation works will be necessary planned.	No impact
Transportation requirements	Temporary increase in traffic during the construction phase	No impact
Duration of construction, operation, decommissioning etc	Duration expected to be x months. There will be no decommissioning phase.	No impact
Reduction of habitat area	No reduction of habitat area	No impact
Disturbance to Key Species	No key species identified in vicinity.	No impact
Habitat or Species Fragmentation	Development will not cause fragmentation of habitat or species	No impact
Changes in Key Indicators of Conservation Value	There will be no impact on water quality.	No impact

(water quality etc)		
Climate Change	Due to the nature and scale of the proposed development, the effects on climate are not anticipated to be significant	No impact

7. IN-COMBINATION/CUMULATIVE EFFECTS

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. As noted in the Department's Guidance document for Planning Authorities, Appropriate Assessment must take account of cumulative effects, as these effects often only occur over time, plans or projects that are completed, approved but uncompleted, or proposed (but not yet approved).

The proposed project is foreseen to have no effects on Lough Ree SAC/River Shannon Callows SAC. Therefore the in-combination effects do need to be considered as per CIEEM guidelines 2016.

There will be no in combination effects to any European site.

8. SCREENING STATEMENT

This Stage 1 Appropriate Assessment has investigated the proposed housing development at Monksland townland and the potential effects on Natura 2000 sites within a 15km radius of the site. The closest protected sites are Lough Ree SAC/SPA. There are no hydrologically links or connectivity from the proposed work site to this SAC.

Following objective analysis of the proposed construction project, and assuming all codes of best practice and management are complied with, this Appropriate Assessment (Stage 1) concludes the following:

1. It is possible to conclude that there would be no significant effects, no potentially significant effects and no uncertain effects if the project were to proceed.

It is therefore the determination of this report that it is not necessary to proceed to Stage 2 of the Appropriate Assessment process and the preparation of a Natura Impact Statement is not required.

9. REFERENCES

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European Commission (2000) Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC. Luxembourg: Office for Official Publications of the European Communities.

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NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. Conservation Status in Ireland of Habitats and Species Listed in the European Council Directive on the Conservation of Habitats, Flora and Fauna 92/43/EEC. National Parks and Wildlife Service. Department of Environment, Heritage and Local Government, Dublin.

NPWS (2022) Conservation objectives for Lough Ree SPA [004064]. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.

NPWS (2022) Conservation Objectives: River Shannon Callows SAC 000216. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage

NPWS (2022) Conservation Objectives: Middle Shannon Callows SPA 004096. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

Wildlife Act 1976 pp 1-209. Dublin: Government Publications.

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Websites

www.npws.ie – website of the national Parks and Wildlife Service

www.nbdc.ie – website of the National Biodiversity Data Centre

www.epa.ie – website of the Environmental Protection Agency

APPENDIX

Site Synopsis
Site Name: Lough Ree SAC
Site Code: 000440

Lough Ree is the third largest lake in Ireland and is situated in an ice-deepened depression in Carboniferous limestone on the River Shannon system between Lanesborough and Athlone. The site spans Counties Longford, Roscommon and Westmeath. Some of its features (including the islands) are based on glacial drift. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi- aquatic habitats also occur.
The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[3150] Natural Eutrophic Lakes
[6210] Orchid-rich Calcareous Grassland*
[7110] Active Raised Bog*
[7120] Degraded Raised Bog
[7230] Alkaline Fens
[8240] Limestone Pavement*
[91D0] Bog Woodland*
[91E0] Alluvial Forests*
[1355] Otter (Lutra lutra)

The greater part of Lough Ree is less than 10 m in depth, but there are six deep troughs running from north to south, reaching a maximum depth of about 36 m just west of Inchmore. The lake has been classified as mesotrophic in quality, but the size of the system means that a range of conditions prevail depending upon, for example, rock type. This gives rise to local variations in nutrient status and pH, which in turn results in variations in the phytoplankton and macrophyte flora. Therefore species indicative of oligotrophic, mesotrophic, eutrophic and base-rich situations occur. The water of Lough Ree tends to be strongly peat-stained, restricting macrophytes to depths of less than 2 m, and as a consequence, macrophytes are restricted to sheltered bays, where a typical Shannon flora occurs. Species present include Intermediate Bladderwort (Utricularia intermedia), pondweeds (Potamogeton spp.), Quillwort (Isoetes lacustris), Greater Duckweed (Spirodela polyrhiza), stoneworts (Chara spp., including C. pedunculata) and Arrowhead (Sagittaria sagittifolia). The latter is a scarce species which is almost confined in its occurrence to the Shannon Basin. Reedbeds of Common Reed (Phragmites australis) are an extensive habitat in a number of more sheltered places around the lake, but single-species 'swamps' consisting of such species as Common Club-rush (Scirpus lacustris), Slender Sedge (Carex lasiocarpa), Great Fen-sedge (Cladium mariscus) and two scarce species of sedge (Carex appropinquata and C. elata) also occur in suitable places. Some of these grade up

into species-rich alkaline fen with Black Bog-rush (Schoenus nigricans) and Whorl-grass (Catabrosa aquatica), or freshwater marsh with abundant Water Dock (Rumex hydrolapathum) and Hemp-agrimony (Eupatorium cannabinum).
Lowland wet grassland is found in abundance around the shore and occurs in two types. One is 'callowland', grassland which floods in winter. This provides feeding for winter waterfowl and breeding waders. The other is an unusual community on stony wet lake shore which is found in many places around the lake, and is characterized by Water Germander (Teucrium scordium), a scarce plant species almost confined to this lake and Lough Derg.
Dry calcareous grassland occurs scattered around the lake shore. This supports typical species such as Yellow-wort (Blackstonia perfoliata), Carline Thistle (Carlina vulgaris) and Quaking-grass (Briza media). Orchids also feature in this habitat e.g. Bee Orchid (Ophrys apifera) and Common Spotted-orchid (Dactylorhiza fuchsii).

Limestone pavement occurs occasionally around the lake shore. The most substantial area is at Rathcline in the extreme north-east. While this has been planted with commercial forestry since the 1950s, it still displays a diverse representation of pavement types, from the typical clint-gryke system to large blocky pavements and scattered boulders. In all cases the pavement is covered by a bryophyte-rich flora, with abundant Ivy (Hedera helix), and a scrub layer dominated by Ash (Fraxinus excelsior), Hazel (Corylus avellana) and some Spindle (Euonymus europaeus). The ground flora is variable, though in places it is species-rich.

Dry broadleaved semi-natural woodland occurs in several places around the lake, most notably at St John's Wood and on Hare Island. St John's Wood is recognised as the largest and most natural woodland in the Midlands. Its canopy is dominated by Hazel, Pedunculate Oak (Quercus robur), Holly (Ilex aquifolium) and Ash, but a range of other trees and shrubs occur, including Wych Elm (Ulmus glabra), Yew (Taxus baccata), Wild Cherry (Prunus avium) and Irish Whitebeam (Sorbus hibernica). The ground flora of St John's Wood is species-rich, and is remarkable for the presence of two species, Toothwort (Lathraea squamaria) and Bird's-nest Orchid (Neottia nidus- avis), which tend to occur in sites with a long history of uninterrupted woodland cover. The tree species composition on Hare Island is similar to that in St John's Wood, with additional non-native species such as Sycamore (Acer pseudoplatanus) and Beech (Fagus sylvatica). This wood also has an exceptionally rich ground flora. Some of the smaller areas of woodland around Lough Ree are mixed woodland with a high percentage of exotics such as Beech. Some areas of well-developed Hazel scrub also occur.
At St John’s Wood, patches of wet alluvial woodland are present along the lakeshore. They are dominated by Ash, Grey Willow (Salix cinerea), Alder (Alnus glutinosa) and, in places, Downy Birch (Betula pubescens). The ground flora includes Creeping Bent (Agrostis stolonifera), Wild Angelica (Angelica sylvestris), Meadowsweet (Filipendula ulmaria), Common Marsh-bedstraw (Galium palustre), Yellow Iris (Iris pseudacorus), Gipsywort (Lycopus europaeus), Water Mint (Mentha aquatica), Reed Canary-grass (Phalaris arundinacea), Creeping Buttercup (Ranunculus repens) and Wood Dock (Rumex sanguineus). Pockets of wet woodland occur

elsewhere around the lake. Most of these are dominated by willows (Salix spp.), Alder and Downy Birch. In one such wood, at Ross Lough, the terrestrial alga, Trentopohlia sp., has a specialised niche on the willow trunks. The ground layer has a rich bryophyte flora (Calliergon spp. and Sphagnum spp.), scattered clumps of Greater Tussock-sedge (Carex paniculata) and a good diversity of herb species, including Water Dock and Fen Bedstraw (Galium uliginosum). Small examples of raised bog occur, which are of interest in that they show a natural transition through wet woodland and/or swamp to lakeshore habitats.

Active Raised Bog (ARB) habitat comprises areas of high bog that are wet and actively peat- forming, where the percentage cover of bog mosses (Sphagnum spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, Sphagnum lawns, flushes and soaks. Results from surveys of the raised bog habitat in 2003 indicate the presence of 5.9 ha of Active Raised Bog (ARB). Also present are examples of Degraded Raised Bog (DRB) capable of regeneration. In general the vegetation of these degraded areas is dominated by typical raised bog species such as Cross-leaved Heath (Erica tetralix), Heather (Calluna vulgaris), Hare's-tail Cottongrass (Eriophorum vaginatum), Bog Asphodel (Narthecium ossifragum) and Deergrass (Scirpus cespitosus). Typically the degraded bog areas have a low cover of peat-forming bog mosses (Sphagnum spp.). The current extent of DRB as estimated using a recently developed hydrological modelling technique, based largely on Light Detection And Ranging (LiDAR) data, is 44.7 ha. Associated with the extensive raised bog system at Clooncraff/Clonlarge are areas of bog woodland. At least two small areas of woodland occur on the raised bog domes. However it would appear that this habitat is in the early stages of development. The largest area is dominated by low trees of Downy Birch and Lodgepole Pine (Pinus contorta). Occasional trees of Scots Pine (Pinus sylvestris) also occur. The ground layer is wet and quaking with a lush carpet of mosses present, including various species of Sphagnum, Pleurozium schreberi and Aulacomium palustre. The main vascular plant species in the ground flora are Bog-rosemary (Andromeda polifolia), Cranberry (Vaccinium oxycoccos), Bog-myrtle (Vaccinium myrtillus), Hare's-tail Cottongrass and Deergrass. Bog Woodland is of particular conservation importance and is listed with priority status on the E.U. Habitats Directive. At St John's Wood, there is an interesting area of woodland that grows on cut-away peat. This is dominated by Downy Birch and Alder Buckthorn (Frangula alnus). The occurrence of the latter species in such abundance is unusual in Ireland. Smaller lakes occur around the lake shore, especially on the east side, and these often have the full range of wetland habitats contained within and around them. A number of small rivers also pass through the site.

The site supports a number of rare plant species which are listed in the Irish Red Data Book. Alder Buckthorn and Bird Cherry (Prunus padus) are woodland components at St John's Wood and elsewhere. Narrow-leaved Helleborine (Cephalanthera longifolia) and Betony (Stachys officinalis), both of which are also legally protected under the Flora (Protection) Order, 1999, occur among the ground flora of Hare Island (where the former occurs in notable abundance). They also occur in a number of other woods. The stonewort Chara tomentosa is present in

shallow water around the lake. The rare, though not legally protected, Marsh Pea (Lathyrus palustris) occurs on some of the callowland and in alluvial woodland at St John's Wood. The rare Myxomycete fungus, Echinostelium colliculosum, has been recorded from St John's Wood.

The lake itself contains one of only two populations in Ireland of the endangered fish species, Pollan (Coregonus autumnalis), which is genetically different from Continental European stock. The shrimp Mysis relicta (Class Crustacea) occurs in this lake and is a relict of the glacial period in Ireland.

Small flocks of Greenland White-fronted Goose, an Annex I species on the E.U. Birds Directive, use several areas of callowland around the lake in winter. An average spring count of 92 individuals was obtained for this species over the six seasons 1988/89 to 1993/94, indicating that Lough Ree is a nationally important site for the species. The following bird counts are derived from 6 counts during the period 1984/85 to 1986/87: nationally important populations of Golden Plover (1,350), an Annex I species; Wigeon (1,306); Teal (584); Tufted Duck (1,317) and Coot (798). Other winter visitors are Whooper Swan (32), an Annex I species, Mute Swan (91), Little Grebe (48), Cormorant (91), Mallard (362), Shoveler (40), Pochard (179), Goldeneye (97), Curlew (178), Lapwing (1,751) and Dunlin (48). The callowland is also used by Black-tailed Godwit and other species on migration. Some of the lake islands provide nesting sites for Common Tern, a species listed on Annex I of the E.U. Birds Directive. The Lough Ree colony, 86 pairs in 1995, is estimated as one of the largest of this species on midland lakes. The lake also provides excellent breeding habitat for wildfowl, including Common Scoter (30-40 pairs), a rare breeding species listed as "Endangered" in the Red Data Book, and Tufted Duck (>200 pairs). The woodlands and scrub around the lake and on the islands are a stronghold of the Garden Warbler (74 territories in 1997), a bird species mainly confined to the Shannon lakes in Ireland.

There is a population of Otter around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the E.U. Habitats Directive.

Land uses within the site include recreation in the form of cruiser hire, angling, camping, picnicking and shooting. Chalet accommodation occurs at a few locations around the lake. Low-intensity grazing occurs on dry and wet grassland around the shore, and some hay is made within the site. Some of these activities are damaging, but in a very localised way, and require careful planning. The main threat to the aquatic life in the lake comes from artificial enrichment of the waters by agricultural and domestic waste, and also by peat silt in suspension which is increasingly limiting the light penetration, and thus restricting aquatic flora to shallower waters. At present Lough Ree is less affected by eutrophication than Lough Derg.
Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent. St John's Wood is particularly important; it is one of the very few remaining ancient woodlands in Ireland. The

lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

Site Synopsis
SITE NAME: LOUGH REE SPA
SITE CODE: 004064

Situated on the River Shannon between Lanesborough and Athlone, Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. Some of its features (including the islands) are based on glacial drift. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. The greater part of Lough Ree is less than 10 m in depth, but there are six deep troughs running from north to south, reaching a maximum depth of about 36 m just west of Inchmore. The lake has a very long, indented shoreline and hence has many sheltered bays. It also has a good scattering of islands, most of which are included in the site.
Beds of Common Reed (Phragmites australis) are an extensive habitat in a number of the more sheltered places around the lake; monodominant stands of Common Clubrush (Scirpus lacustris), Slender Sedge (Carex lasiocarpa) and Saw Sedge (Cladium mariscus) also occur as swamps in suitable places. Some of these grade into speciesrich calcareous fen or freshwater marsh. Lowland wet grassland, some of which floods in winter, occurs frequently around the shore.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Wigeon, Teal, Mallard, Shoveler, Tufted Duck, Common Scoter, Goldeneye, Little Grebe, Coot, Golden Plover, Lapwing and Common Tern.
The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Little Grebe (52), Whooper Swan (139), Wigeon (2,070), Teal (1,474), Mallard (1,087), Shoveler (54), Tufted Duck (1,012), Goldeneye (205), Coot (338), Golden Plover (3,058) and Lapwing (5,793) – all figures are three year mean peaks for the period 1997/98 to 1999/2000. Other species which occur in winter include Great Crested Grebe (29), Cormorant (99), Curlew (254) and Black-headed Gull (307) as well as the resident Mute Swan (85). Greenland White-fronted Goose has been recorded on occasion on the flooded margins of the site. The site supports a nationally important population of Common Tern (90 pairs in 1995). It is a traditional breeding site for Black-headed Gull and whilst a full survey has not been carried out in recent years, substantial numbers of nesting birds were present on at least one island in 2003. Lesser Black-backed Gull

and Common Gull have bred in the past and may still breed. Lough Ree is a noted site for breeding duck and grebes: Tufted Duck (202 pairs) and Great Crested Grebe (32 pairs) – records from 1995.
Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. Surveys have recorded 39 pairs and 32 pairs in 1995 and 1999 respectively. Cormorant also breeds on some of the islands within the site – 86 nests were recorded in 2010. The woodland around the lake is a stronghold for Garden Warbler and this scarce species probably occurs on some of the islands within the site.

Lough Ree SPA is of high ornithological importance for both wintering and breeding birds. It supports nationally important populations of eleven wintering waterfowl species. The site has a range of breeding waterfowl species, notably nationally important populations of Common Scoter and Common Tern. Of particular note is the regular presence of three species, Whooper Swan, Golden Plover and Common Tern, which are listed on Annex I of the E.U. Birds Directive. Parts of Lough Ree SPA are Wildfowl Sanctuaries.
(2015)

Site Name: River Shannon Callows SAC
Site Code: 000216

The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along much of its length the site is bordered by raised bogs (many, but not all, of which are subject to large-scale harvesting), esker ridges and limestone-bedrock hills. The soils grade from siltyalluvial to peat. This site has a common boundary, and is closely associated, with two other sites with similar habitats, River Suck Callows and Little Brosna Callows.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[6410] Molinia Meadows
[6510] Lowland Hay Meadows
[7230] Alkaline Fens
[8240] Limestone Pavement*
[91E0] Alluvial Forests*
[1355] Otter (Lutra lutra)

The River Shannon Callows is mainly composed of lowland wet grassland. Different plant communities occur, depending on elevation, and therefore flooding patterns. Two habitats listed on Annex I of the E.U. Habitats Directive are well-represented within the site – Molinia meadows and lowland hay meadows. The former is characterised by the presence of the Meadow Thistle (Cirsium dissectum) and Purple Moor-grass (Molinia caerulea), while typical species in the latter include Meadow Fescue (Festuca pratensis), Rough Meadow-grass (Poa trivialis), Downy Oat-grass (Avenula pubescens), Common Knapweed (Centaurea nigra), Ribwort Plantain (Plantago lanceolata) and Common Sorrel (Rumex acetosa). In places these two habitats grade into one another.

Low-lying areas of the callows with more prolonged flooding are characterised by Floating Sweet-grass (Glyceria fluitans), Marsh Foxtail (Alopecurus geniculatus) and wetland herbs such as Yellow-cress (Rorippa spp.), Water Forget-me-not (Myosotis scorpioides) and Common Spike-rush (Eleocharis palustris). Most of the callows consist of a plant community characterised by Creeping Bent (Agrostis stolonifera), Brown Sedge (Carex disticha), Common Sedge (Carex nigra), and herbs such as Marshmarigold (Caltha palustris) and Marsh Bedstraw (Galium palustre), while the more elevated and peaty areas are characterised by low-growing sedges, particularly Yellow Sedge (Carex flava agg.) and Star Sedge (Carex echinata). All these communities are very diverse in their total number of plant species, and include the scarce species Meadow-rue (Thalictrum flavum), Summer Snowflake (Leucojum aestivum) and Marsh Stitchwort (Stellaria palustris).

A further two Annex I habitats, both listed with priority status, have a minor though important presence within the site. Alluvial forest occurs on a series of alluvial

islands just below the ESB weir near Meelick. Several of the islands are dominated by well-grown woodland consisting mainly of Ash (Fraxinus excelsior) and Willows (Salix spp.). The islands are prone to regular flooding from the river.
At Clorhane, an area of limestone pavement represents the only known example in Co. Offaly. It is predominantly colonised by mature Hazel (Corylus avellana) woodland, with areas of open limestone and calcareous grassland interspersed. The open limestone pavement comprises bare or moss -covered rock, or rock with a very thin calcareous soil cover supporting a short grassy turf. The most notable plant in the grassy area is a substantial population of Green-winged Orchid (Orchis morio), which occurs with such species as Sweet Vernal-grass (Anthoxanthum odoratum), Quaking-grass (Briza media), sedges (Carex caryophyllea, C. flacca), Common Bird'sfoot-trefoil (Lotus corniculatus), Common Knapweed (Centaurea nigra), and Ribwort Plantain (Plantago lanceolata). Ferns associated with the cracks in the pavement include Asplenium trichomanes, A. ruta-muraria, A. adiantum-nigrum and Polypodium australe. Bryophytes include Grimmia apocarpa and Orthotrichum cf. anomalum. Anthills are common within the open grassland. The Hazel wood is well-developed and has herbaceous species such as Primrose (Primula vulgaris), Common Dog-violet (Viola riviniana), Wood-sorrel (Oxalis acetosella) and Herb-Robert (Geranium robertianum). The wood is noted for its luxuriant growth of epiphytic mosses and liverworts, with such species as Neckera crispa and Hylocomium brevirostre. Yew (Taxus baccata) occurs in one area.

Other habitats of smaller area but also of importance within the site are lowland dry grassland, drainage ditches, freshwater marshes and reedbeds. The dry grassland areas, especially where they exist within hay meadows, are species-rich, and of two main types: calcareous grassland on glacial material, and dry grassland on levees of river alluvium. The former can contain many orchid species, Cowslip (Primula veris), abundant Adder's-tongue (Ophioglossum vulgatum) and Spring-sedge (Carex caryophyllea), and both contain an unusually wide variety of grasses, including False Oat-grass (Arrhenatherum elatius), Yellow Oat-grass (Trisetum flavescens), Meadow Foxtail (Alopecurus pratense), and Meadow Brome (Bromus commutatus). In places Summer Snowflake also occurs. Good quality habitats on the edge of the callows included in the site are wet broadleaved semi-natural woodland dominated by both Downy Birch (Betula pubescens) and Alder (Alnus glutinosa), and dry broadleaved woodland dominated by Hazel.
There are also areas of raised bog, fen on old cut-away bog with Black Bogrush (Schoenus nigricans), and a 'petrifying stream' with associated species-rich calcareous flush which supports Yellow Sedge (Carex lepidocarpa), Blunt-flowered Rush (Juncus subnodulosus) and Stoneworts (Chara spp.).
Immediately south of Portumna Bridge and south east of the town of Portumna the area of low-lying terrestrial land west of the river comprises are large area of the Annex I habitat alkaline fen. The fen comprises a complex of rich-fen plant communities. Sedges (Carex lasiocarpa, Carex acutiformis) and Bogbean (Menyanthes trifoliata) dominate parts of the fens while other small sedges are common throughout. The orchids Early Marsh Orchid (Dactylorhiza incarnata), Western Marsh Orchid (D. majalis) and Marsh Helloborine (Epipactis palustris) and

the red-listed plant species Marsh Pea (Lathyrus palustris) have been recorded within the fen.
Two species which are legally protected under the Flora (Protection) Order, 2015, occur in the site - Opposite-leaved Pondweed (Groenlandia densa) in drainage ditches, and Meadow Barley (Hordeum secalinum) on dry alluvial grassland. This is one of only two known inland sites for Meadow Barley in Ireland. The Red Data Book plant Green-winged Orchid is known from dry calcareous grasslands within the site.
The site is of international importance for wintering waterfowl as numbers regularly exceed the 20,000 threshold (mean of 34,985 for five winters 1994/94-1998/99). Of particular note is an internationally important population of Whooper Swans (287). A further five species have populations of national importance (all figures are means for five winters 1995/96-1999/00): Mute Swan (349), Wigeon (2972), Golden Plover (4254), Lapwing (11578) and Black-tailed Godwit (388). Species which occur in numbers of regional or local importance include Bewick's Swan, Tufted Duck, Dunlin, Curlew and Redshank. The population of Dunlin is notable as it is one of the few regular inland flocks in Ireland. Small flocks of Greenland White-fronted Goose use the Shannon Callows; these are generally associated with larger flocks which occur on the adjacent Little Brosna Callows and River Suck Callows. Shoveler (an estimated 12 pairs in 1987) and Black-tailed Godwit (Icelandic race) (one or two pairs in 1987) breed within this site. These species are listed in the Red Data Book as being threatened in Ireland. The scarce bird Quail is also known to breed within the area.
The callows has at times held over 40% of the Irish population of the globally endangered Corncrake, although numbers have declined in recent years. A total of 66 calling birds were recorded in 1999, but numbers have dropped significantly since then. The total population of breeding waders (Lapwing, Redshank, Snipe and Curlew) in 1987 was one of three major concentrations in Ireland and Britain. The population of breeding Redshank in the site was estimated to be 10% of the Irish population, making it nationally significant. Also, the Annex I species Merlin and Hen Harrier are regularly reported hunting over the callows during the breeding season and in autumn and winter.
This site holds a population of Otter, a species listed on Annex II of the E.U. Habitats Directive, while the Irish Hare, which is listed in the Irish Red Data Book, is a common sight on the callows.
The Shannon Callows are used for summer dry-stock grazing (mostly cattle, with some sheep and a few horses), and permanent hay meadow. About 30 ha is a nature reserve owned by voluntary conservation bodies.
The River Shannon is used increasingly for recreational purposes with coarse angling and boating accounting for much of the visitor numbers. Intermittent and scattered damage to the habitats has occurred due to over-deepening of drains and peat silt deposition, water-skiing, ploughing and neglect of hay meadow (or reversion to pasture). However, none of these damaging activities can yet be said to be having a serious impact.
Threats to the quality of the site may come from the siting of boating marinas in areas away from centres of population, fertilising of botanically-rich fields, the use

of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow, disturbance of birds by boaters, anglers, birdwatchers and the general tourist. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland, and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the E.U. Habitats Directive occur within the site – Molinia meadows and lowland hay meadows with good examples of a further three Annex habitats (two with priority status). In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration, and in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.

SITE SYNOPSIS
SITE NAME: MIDDLE SHANNON CALLOWS SPA
SITE CODE: 004096

The Middle Shannon Callows SPA is a long and diverse site which extends for approximately 50 km from the town of Athlone to the town of Portumna; it lies within Counties Galway, Roscommon, Westmeath, Offaly and Tipperary. The site averages about 0.75 km in width though in places is up to 1.5 km wide. Water levels on the site are greatly influenced by the very small fall between Athlone and Portumna and by the weir at Meelick.

The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The callows are mainly too soft for intensive farming but are used for hay or silage or for summer grazing. Other habitats of smaller area which occur alongside the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. The diversity of semi-natural habitats present and the sheer size of the site attract an excellent diversity of bird species, including significant populations of several.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Wigeon, Corncrake, Golden Plover, Lapwing, Black-tailed Godwit and Black-Headed Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The Middle Shannon Callows qualifies as a site of international importance as it regularly supports in excess of 20,000 wintering waterbirds (23,656 – four year mean peak for four of the winters between 1995/96 and 1999/2000). The site also supports internationally important populations of Whooper Swan (305 – five year mean peak for the period 1995/96 to 1999/2000) and Black-tailed Godwit (485 – four year mean peak for four of the winters between 1995/96 and 1999/2000). Four further species of wintering waterbird occur in numbers of national importance, i.e. Wigeon (3,059), Golden Plover (4,133), Lapwing (13,240) and Black-headed Gull (1,209) – all figures are four year mean peaks for four of the winters between 1995/96 and 1999/2000. The Shannon Callows is the largest site monitored as part of I-WeBS and many parts of it are inaccessible on the ground. Annual monitoring of the wintering waterbirds of the Shannon Callows is undertaken by aerial surveys in January/February with some areas also covered by ground counts. The importance of the site for some species may have been underestimated if count coverage missed the brief spring peaks for these species, e.g. peak counts of Lapwing (23,409) and Black-tailed Godwit (1,096) recorded in the baseline period (1995/96 to 1999/2000) have been considerably higher than the four year means. . A wide range of other species occurs within the site, including Mute Swan (407), Teal (88), Tufted Duck (41), Dunlin (335), Curlew (162) and Redshank (39). Small numbers of Greenland White-fronted Goose use the Shannon Callows (peak 55 in 1998/99) and these are generally associated with larger flocks which occur on the adjacent Little Brosna Callows and River Suck Callows. The

callow grasslands provide optimum feeding grounds for these various species of waterfowl, while many of the birds also roost or rest within the site.
The Shannon Callows is also an important site for breeding waders with the total population on the Shannon and Little Brosna Callows being one of three major concentrations in Ireland and Britain in 1987. Numbers of some species have declined since then but a survey of the Shannon Callows in 2002 recorded the following breeding waders - Lapwing (63 pairs), Redshank (116 pairs), Snipe (139 drumming birds) and Curlew (8 pairs). Black-tailed Godwit, a very rare breeding species in Ireland, nests or attempts to nest in small numbers each year within the site. A further scarce breeding species, Shoveler, also nests in small numbers each year (an estimated 12 pairs in 1987).
The Middle Shannon Callows SPA supports a breeding population of Corncrake (19 pairs - five year mean peak between 2003 and 2007, based on records of calling males). Corncrake winter in southern and eastern Africa, migrating northwards to arrive on their breeding grounds from early April onwards, departing again in August and September. They require the cover of tall vegetation throughout their breeding cycle and are strongly associated with meadows which are harvested annually, where they nest and feed. Annual cutting of these meadows creates a sward which is easy for the birds to move through. Other habitats, which can provide cover for Corncrake in the early and late stages of the breeding season, are also important for this species. Corncrake is listed on the 2010 International Union for Conservation of Nature (IUCN) Red List of Threatened Species. This is due to population and range declines of more than 50% in the last 25 years across significant parts of its range. Quail, a related, scarce species, is also known to breed within the callow grasslands.
A good variety of other bird species are attracted to the site. Birds of prey, including scarce species such as Merlin and wintering Hen Harrier have been recorded hunting over the callows. A range of passerine species associated with grassland and swamp vegetation breed, including Sedge Warbler, Grasshopper Warbler, Skylark and Reed Bunting. Kingfisher is also known to occur within the site. Whinchat, an uncommon breeding species, occurs in small numbers.
The Middle Shannon Callows SPA is an internationally important site that supports an assemblage of over 20,000 wintering waterbirds. It holds internationally important populations of two species - Whooper Swan and Black-tailed Godwit. In addition, there are four species that have wintering populations of national importance. The site also supports a nationally important breeding population of Corncrake. Of particular note is that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Corncrake and Golden Plover.