

**APPROPRIATE ASSESSMENT
SCREENING REPORT AND
CONCLUSION STATEMENT**

(A) Project Details

Planning File Ref	Part 8 No. 109
Applicant name	Longford County Council
Development Location	St John's Church Graveyard, Battery Rd, Abbeycartron, Longford Town
Site size	0.016Ha
Application accompanied by an EIS (Yes/NO)	No
Distance from nearest Natura 2000 site(s) in km	The nearest Natura 2000 site is Ballykenny-Fisherstown Bog SPA (004101) and Lough Forbes Complex SAC (001818)

Description of the project/proposed development

Proposed 160 square metre burial ground extension to the east of the existing St. John's Church Graveyard, Battery Road, Abbeycartron, Longford Town. The area relating to the proposed was previously granted planning permission for residential use under reference 00/700044. The proposed development relates to works to Record of Protected Structure (RPS) No. 14 and 18 of the current CDP 2021 – 2027.

(B) Identification of Natura 2000 sites which may be impacted by the proposed development

		Yes/No
		If answer is yes, identify list name of Natura 2000 site likely to be impacted.
1	<p>Impacts on sites designated for freshwater habitats or species. Sites to consider (but not limited to): Lough Forbes Complex SAC Lough Ree SAC</p>	<p><i>Is the development within a Special Area of Conservation whose qualifying interests include freshwater habitats and/or species, or in the catchment (upstream or downstream) of same?</i></p> <p style="text-align: center;">No</p>

2	Impacts on sites designated for wetland habitats - bogs, fens, marshes and heath. <u>Sites to consider (but not limited to):</u> Lough Forbes Complex SAC Lough Ree SAC Clooneen Bog SAC Mount Jessop Bog SAC Brown Bog SAC	<i>Is the development within a Special Area of Conservation whose qualifying interests include wetland habitats (bog, marsh, fen or heath), or within 1 km of same?</i>	No
3	Impacts on designated terrestrial habitats. <u>Sites to consider (but not limited to):</u> Lough Forbes Complex SAC Lough Ree SAC Clooneen Bog SAC Brown Bog SAC	<i>Is the development within a Special Area of Conservation whose qualifying interests include woodlands, dunes or grasslands, or within 100m of same?</i>	No
4	Impacts on birds in SPAs <u>Sites to consider (but not limited to):</u> Ballykenny-Fisherstown Bog SPA	<i>Is the development within a Special Protection Area, or within 5 km of same?</i>	Yes

(C) Identification of Potential Impacts on Habitats and Birds

1	Impacts on designated rivers, streams, lakes and freshwater dependant habitats and species	
	If 'Yes' is recorded in answer to question 1 in Table B, please answer the following.	
	Does the development involve any of the following:	
1.1	Works within the boundary of a Special Area of Conservation (SAC) excluding small extensions/alterations to existing buildings.	No – N/A
1.2	Discharge to surface water or groundwater within 5km of SAC.	No – N/A
1.3	Abstraction from surface water or groundwater within 5km of SAC	No – N/A
1.4	Removal of topsoil within 500m of watercourses.	No – N/A
1.5	Infilling or raising of ground levels within 100m of watercourses.	No – N/A
1.6	Construction of drainage ditches within 1km of SAC.	No – N/A
1.7	Installation of wastewater treatment systems; percolation areas; septic tanks within 500m of watercourses.	No – N/A
1.8	Construction within a floodplain or within an area liable to flood.	No – N/A
1.9	Crossing or culverting of rivers or streams within 5km of SAC.	No – N/A
1.10	Storage of chemicals, hydrocarbons or organic wastes within 1km of a watercourse.	No – N/A
1.11	Development of a large-scale which involves the production of an EIAR.	No – N/A
1.12	Development of quarries/mines.	No – N/A
1.13	Development of windfarms.	No – N/A
1.14	Development of pumped hydro-electric stations.	No – N/A

1.15	Construction of roads or other infrastructure on peat habitats within 1km of rivers, streams, lakes and freshwater-dependant habitats.	No – N/A
2	<p align="center">Impacts on designated wetlands – bogs, fens, marshes and heath</p> <p align="center">If ‘Yes’ is recorded in answer to question 2 in Table B, please answer the following.</p> <p align="center">Does the development involve any of the following:</p>	
2.1	Works within the boundary of a Special Area of Conservation (SAC), excluding small extensions/alterations to existing buildings.	No – N/A
2.2	Construction of roads or other infrastructure on peat habitats within 1km of bog, marsh, fen or heath habitat within a Natura 2000 site.	No – N/A
2.3	Development of a large scale within 1km of bog, marsh, fen or heath habitat within a Natura 2000 site which involves the production of an EIS.	No – N/A
3	<p align="center">Impacts on other designated terrestrial habits (woodland, grasslands)</p> <p align="center">If ‘Yes’ is recorded in answer to question 3 in Table B, please answer the following.</p> <p align="center">Does the development involve any of the following:</p>	
3.1	Works within the boundary of a Special Area of Conservation (SAC).	No – N/A
3.2	Development within 200m of Natura 2000 site with woodland, grassland or coastal habitats.	No – N/A
3.3	Development of a large scale within 1km of Natura 2000 site with woodland, grassland or coastal habitats which involves the production of an EIS.	No – N/A
4	<p align="center">Impacts on birds in SPAs</p> <p align="center">If ‘Yes’ is recorded in answer to question 4 in Table B, please answer the following.</p> <p align="center">Does the development involve any of the following:</p>	
4.1	Works within the boundary of a Special Protection Area (SPA) excluding small extensions/alterations to existing buildings.	No
4.2	Erection of wind turbines within 5km of a SPA.	No
4.3	Proposed discharges directly to SPA.	No
4.4	Development of cycleways or walking routes within 100m of SPA.	No

Conclusion:

If the answer to all of the above is **No**, significant impacts on habitats within Natura 2000 sites can be ruled out. No further assessment is required in relation to habitats.

If the answer is **Yes**, you will require further information, which should be provided in the form of a Natura Impact Statement which should address the particular issues of concern as identified through the above.

(G) SCREENING CONCLUSION STATEMENT		
<i>Selected relevant category for project assessed by ticking box.</i>		
1	AA is not required because the project is directly connected with/necessary to the conservation management of the site	
2	No potential significant affects/AA is not required	X
3	Significant effects are certain, likely or uncertain. Seek a Natura Impact Statement Reject proposal. (Reject if potentially damaging/inappropriate)	
Justify why it falls into relevant category above (based on information in above tables)		
Having regard to the proximity of the nearest Natura 2000 site and the nature of the proposed development, it is not considered there would be potential for significant effects on the Natura 2000 network.		
Name:	Richard Smith	
Position:	Acting Senior Executive Architect	
Date:	27/06/2023	

Appendix A
Location map and 15km radius.

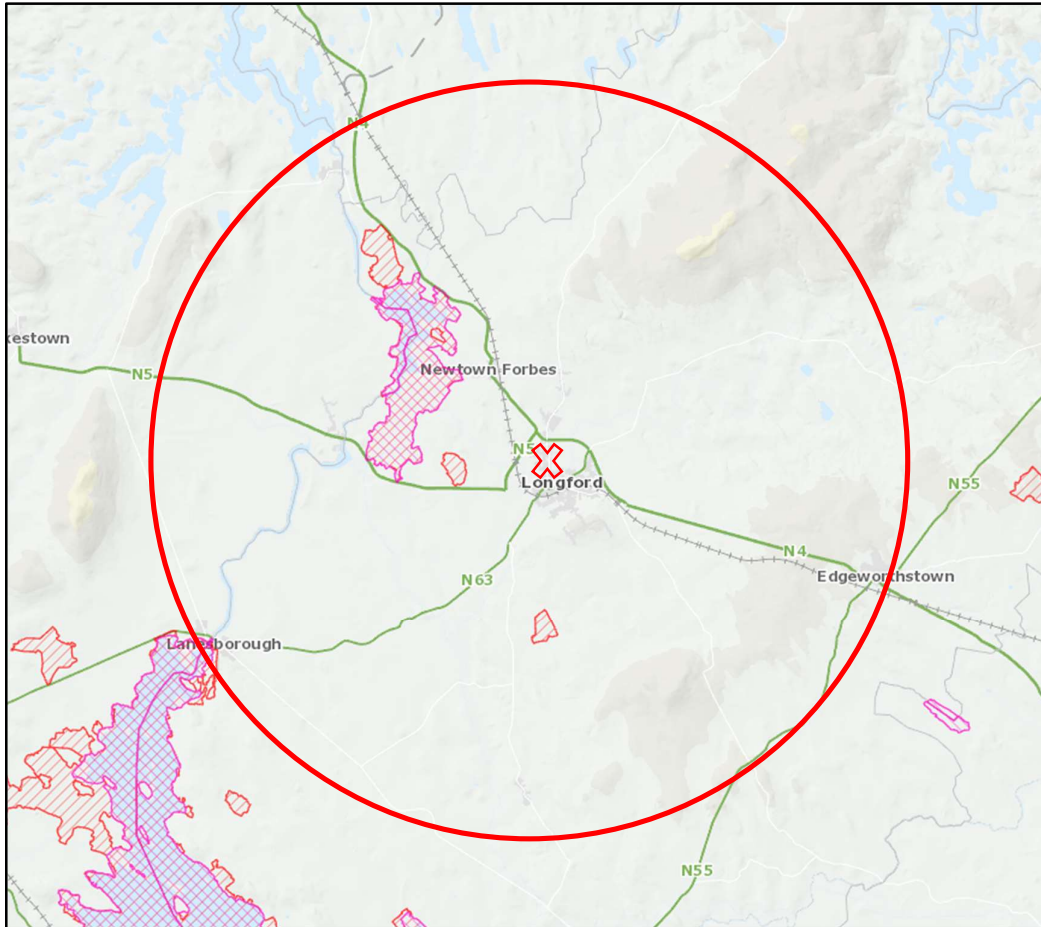


Fig. 1. 'X' Marking site location with 15km catchment radius

Appendix B

Synopsis of Sites

Site Name: Lough Forbes Complex SAC

Site Code: 001818

This site consists of a number of different habitats, and is centred around Lough Forbes, a lake formed by a broadening of the River Shannon. As well as the lake itself, there is also a series of raised bogs, callow grasslands and a variety of other aquatic and terrestrial habitats to the west of Newtown Forbes on the Longford/Roscommon boundary.

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
[7110] Raised Bog (Active)*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation
[91E0] Alluvial Forests*

Active raised bog 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. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*) and Carnation Sedge (*Carex panicea*).

The raised bogs, located on the south-eastern shore of Lough Forbes, are known as the Ballykenny-Fishertown complex. These bogs are of international importance as unique examples of Shannon River edge bogs and they are also the most northerly intact bogs adjacent to the River Shannon. The central core areas of the bogs are quite wet and spongy, with a good complement of bog mosses and well developed hummocks. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. Between the Camlin River and this bog, a complete transition from raised bog to callow grasslands can be seen, while the interface between the bog and lake is colonised by a narrow band of deciduous woodland.

In the wetter areas of the bog surface, Rhynchosporion vegetation is sometimes found. *Sphagnum cuspidatum* is frequent, along with Bogbean (*Menyanthes trifoliata*), White Beak-sedge and Common Cottongrass (*Eriophorum angustifolium*). The relatively rare Brown Beak-sedge has also been recorded. Degraded raised bog is largely confined to the marginal areas of uncut high bog where drainage effects from adjoining turbary are most pronounced. The plant species composition of degraded raised bog is generally similar to that of active raised bog, however species typical of very wet bog conditions are either much reduced in abundance or absent. In general, the most frequent vascular species are Deergrass, Common Cottongrass, Hare's-tail Cottongrass (*E. vaginatum*), Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Bog Asphodel and Carnation Sedge. The most frequent lower

plant species present are the lichen *Cladonia portentosa* and the mosses *Hypnum cupressiforme* and *Sphagnum capillifolium*.

Lough Forbes is a medium sized lake underlain by limestone. It has extensive swamps of Common Reed (*Phragmites australis*) which provide good cover for wildfowl, although numbers have declined recently, possibly due to the increase in cruisers and other pleasure boats. Freshwater marshes are also a common feature along the lakeshore. These areas contain a good diversity of aquatic and emergent vegetation, comprised of species such as sedges (*Carex vesicaria*, *C. rostrata* and *C. acuta*), Bogbean, Common Spike-rush (*Eleocharis palustris*), Fine-leaved Waterdropwort (*Oenanthe aquatica*), Water Plantain (*Alisma plantago-aquatica*), Cowbane (*Cicuta virosa*), Common Club-rush (*Scirpus lacustris*) and Reed Canary-grass (*Phalaris arundinacea*).

The site contains extensive areas of woodland. The wet woodland types present include willow woodland, Ash-Alder woodland on slightly higher ground, Ash-oak woodland at the highest levels and birch woodlands on dried-out or cut-away bog. The principal woodland type, however, is a drier mixed oak-Ash woodland. The total area of woodland within the SAC is estimated at over 170 ha, of which at least 40 ha are alluvial woodland. Several individual woodlands exceed 40 ha and there is good continuity. There is little woodland on the Roscommon side of the lough. The majority of the woodland within the SAC is recorded as having been present in part or in full on the 1st edition Ordnance Survey maps from the 1840s. These may be considered therefore as potentially ancient or long-established woodlands, a conclusion reinforced by the presence of a number of relatively rare species and ancient woodland indicator species.

The dry Pedunculate Oak (*Quercus robur*) – Ash (*Fraxinus excelsior*) woodland is dominated by Pedunculate Oak and Ash, up to 20 m tall, with occasional Alder (*Alnus glutinosa*), Rowan (*Sorbus aucuparia*) and Yew (*Taxus baccata*), as well as a variety of exotic species, principally Sycamore (*Acer pseudoplatanus*), Beech (*Fagus sylvatica*) and lime (*Tilia* sp.). The shrub layer is variable in cover and species, with Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*), Hawthorn (*Crataegus monogyna*), Spindle (*Eunonymus europaea*), willows (*Salix caprea* and *S. cinerea* subsp. *oleifolia*) and the relatively rare species Bird Cherry (*Prunus padus*), Buckthorn (*Rhamnus catharticus*) and Alder Buckthorn (*Frangula alnus*). The introduced and invasive

Cherry Laurel (*Prunus laurocerasus*) and Rhododendron (*Rhododendron ponticum*) are locally abundant. The herb layer consists of Bramble (*Rubus fruticosus* agg.), Enchanter's-nightshade (*Circaea lutetiana*), violet (*Viola* sp.), Bluebell (*Hyacinthoides non-scripta*) and several species of ferns, e.g. *Dryopteris filix-mas*, *D. affine*, *D. dilatata* and *Polystichum setiferum*.

Areas of birch woodland are dominated by birch, occasional Alder on more base-rich sites, Rowan, Holly and Scots Pine (*Pinus sylvestris*). Rhododendron forms thickets in some stands. The herb layer is relatively species-poor with Bramble, Purple Moorgrass (*Molinia caerulea*), Bracken (*Pteridium aquilinum*), Wood-sorrel (*Oxalis acetosella*) and abundant mosses, e.g. *Polytrichum* species.

Extensive areas of alluvial woodland fringe the shores of Lough Forbes and the Shannon, as well as extending along some of the tributaries. Three main types occur: willow woodlands, Alder-Ash woodlands and Ash-oak woodlands.

The willow woodland stands are generally found fringing the rivers and lake, and are usually quite narrow due to the hilly/boggy landscape which tends to rise steeply from

the river. This results in a mostly narrow floodplain, but in places, lower lying ground may be flooded at times of high water levels. These woodlands are generally structurally complex stands of multi-stemmed Rusty Willow (*Salix cinerea* subsp. *oleifolia*), up to 8 m tall, where the roots are in permanently waterlogged, acidic to neutral, base-rich silty soils. Birch (*Betula* sp.) and Alder are occasional. A thin shrub layer of Hawthorn may be present in drier locations. Ivy (*Hedera helix*) and Bramble occur only in small amounts. The field layer consists of tall herbaceous species such as Reed Canary-grass, Yellow Loosestrife (*Lysimachia vulgaris*), Purple Loosestrife (*Lythrum salicaria*), Meadowsweet (*Filipendula ulmaria*), Marsh Ragwort (*Senecio aquaticus*), Yellow Iris (*Iris pseudacorus*) and Marsh-marigold (*Caltha palustris*). The moss layer is poorly developed with just a scattering of species such as *Rhizonmium punctatum* and *Mnium hornum*.

Alder-Ash woodland is the most extensive type of alluvial woodland at this site. This community occurs behind the willow woodland on slightly more elevated land that nonetheless is regularly flooded. The main canopy species are Alder and Ash, with occasional Pedunculate Oak, birch and Sycamore. Rusty Willow and Hawthorn are the principal shrub species, with a small amount of Guelder-rose (*Viburnum opulus*), Bird Cherry and Hazel. The herb flora is species-rich and is dominated by Meadowsweet, with Remote Sedge (*Carex remota*) and Golden Saxifrage (*Chrysosplenium oppositifolia*). Geophytes include Bluebell and Lesser Celandine (*Ranunculus ficaria*). Other characteristic species include Ivy, Enchanter's-nightshade, Reed Canary-grass, Yellow Iris, Cuckooflower (*Cardamine pratensis*), Yellow Loosestrife and Broad Buckler-fern (*Dryopteris dilatata*). Where grazing occurs, Creeping Bent (*Agrostis stolonifera*) is abundant. The moss layer is mostly poorly developed, with *Thamnobryum alopecurum*, *Calliergonella cuspidata* and *Conocephalum conicum* being the most frequent species. The rare Elongated Sedge (*Carex elongata*) occurs locally.

Ash-Pedunculate Oak alluvial woodland occurs behind the Alder-Ash woodland where the land is subject to occasional flooding or where the water-table is high. Ash and Pedunculate Oak are the dominant canopy species, with occasional Sycamore, Beech and Horse-chestnut (*Aesculus hippocastanum*). The shrub layer is formed chiefly from Hazel, with Elder (*Sambucus nigra*), Hawthorn and occasional Bird Cherry, along with regenerating Ash and Sycamore. It is essentially a wetter version of the Oak-Ash woodland described above, but the field layer is characterised by moisture-loving species such as Golden Saxifrage, Remote Sedge, Wood-sedge (*Carex sylvatica*) and Bugle (*Ajuga reptans*). While the field layer is diverse and species-rich, the moss layer is only moderately developed, the most common species being *Thamnobryum alopecurum*, *Thuidium tamariscinum* and *Rhytidiadelphus triquetrus*.

Areas of callows (winter-flooded grassland) along the Camlin River are also included within this site. Like the internationally important Shannon Callows, these wet grasslands are included for their botanical interest as well as for the waterbirds that they support. Both Lough Forbes and the callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers. Counts in two of the winters in the 1995/96 to 1999/00 period are as follows: Cormorant (51), Whooper Swan (40), Wigeon (419), Teal (444), Shoveler (6), Tufted Duck (49) and Goldeneye (11). The bogs were formerly used by part of the Loughs Kilglass and Forbes Greenland White-fronted Goose wintering population, but these appear to have now been abandoned in favour of grassland sites elsewhere. Merlin has been recorded within the site and may nest. Whooper Swan and Merlin are listed on Annex I of the E.U. Birds Directive. Red Grouse are known from the bogs. Red

Grouse is a Red Listed species in Ireland as it has declined in numbers in recent decades.

The raised bogs are vulnerable to water loss from peat-cutting and drainage, though ongoing restoration work involving blocking of drains is occurring. There are no known threats to the wintering birds though the increased use of the River Shannon system by leisure craft could cause disturbance.

The importance of the Lough Forbes site lies in its excellent diversity of habitats, some of which, for example the raised bogs, are rare and threatened. The site is also of ornithological importance for its wintering waterfowl, breeding Merlin and Red Grouse. The presence of Whooper Swan and Merlin is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

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 Deergass (*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 Deergass. 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 Name: Clooneen Bog
SAC Site Code: 002348

Clooneen Bog lies approximately 3 km south-east of Roosky in Co. Longford on the east bank of the River Shannon, just north of Lough Forbes. It is located almost entirely in the townlands of Clooneen, Bunanass, Edercloon and Cloonart (North and South). The site comprises areas of high bog, including bog woodland and cutover bog, and is bounded by a mineral ridge to the east and agricultural fields to the north. Although it would have originally adjoined the River Shannon to the west and Lough Forbes to the south, it is now separated from these by a road and agricultural fields.

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):

[7110] Active Raised Bog*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation
[91D0] Bog Woodland*

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. Degraded Raised Bog (DRB) corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergass (*Scirpus cespitosus*) and Carnation Sedge (*Carex panicea*).

This site consists of a narrow bog dome, with cutover bog to the north, south and west. An interesting feature is the extensive area of bog woodland growing on a flush in the northern section of the bog. There is also a large flush to the south-east associated with a marginal area which slopes relatively steeply towards an extensive region of old cutover. Wet grassland in this area floods from Lough Forbes.

Much of the high bog has vegetation typical of the Midland Raised Bog type, with Heather (*Calluna vulgaris*), Common Cottongrass (*Eriophorum angustifolium*) and Deergass all occurring abundantly. Other species present include Cranberry (*Vaccinium oxycoccos*), Cross-leaved Heath (*Erica tetralix*), White Beak-sedge and Bog Asphodel. In the narrow central region of the high bog there are small pools containing the bog moss *Sphagnum cuspidatum*, Great Sundew (*Drosera anglica*) and Bogbean (*Menyanthes trifoliata*). Bog mosses are plentiful between these pools, with *S. capillifolium*, *S. magellanicum* and *S. fuscum* noted. These pools are associated with a depression and become algal-filled tear pools towards the margins of the high bog.

Results from surveys of Clooneen Bog in 1999 indicate the area of ARB to be 10 ha, corresponding with sub-central ecotope, active flush (soak) and bog woodland. The open bog woodland is dominated by lichen encrusted Downy Birch (*Betula pubescens*), with a field layer of Purple Moor-grass (*Molinia caerulea*) and Hare's-tail Cottongrass (*Eriophorum vaginatum*) and ericaceous shrubs such as Heather,

Crowberry (*Empetrum nigrum*), Bog-myrtle (*Myrica gale*) and Bilberry (*Vaccinium myrtillus*). Mosses such as *Hylocomium splendens* and *Breutelia chrysocoma* are also abundant. Species such as *Sphagnum recurvum*, *S. imbricatum* and *S. palustre* are less common. There are also several ferns present including Hard Fern (*Blechnum spicant*) and Broad Buckler-fern (*Dryopteris dilatata*). The flush to the south-east is dominated by Purple Moor-grass and may be associated with an area that has subsided. There are occasional clumps of Bog-myrtle, with some small *Rhododendron* (*Rhododendron ponticum*) bushes encroaching. This latter species is an invasive, non-native species. Common Reed (*Phragmites australis*) is associated with this flush, indicating some groundwater influence.

The current extent of DRB as estimated using a recently developed hydrological modelling technique, based largely on Light Detection and Ranging (LiDAR) data, is 7.6 ha.

Old cutover to the north is dominated by Purple Moor-grass, with cottongrass, Heather and Carnation Sedge. There is some active regeneration in the north-east, with cottongrass dominating over bog moss (*S. cuspidatum*). Birch and Gorse (*Ulex europaeus*) scrub occurs on old cut-away to the west and east. An extensive area of cut-away to the south is dominated by Purple Moor-grass and Heather, with Bogmyrtle occurring abundantly in places. This area forms a mosaic with wet grassland and there is some flooding from Lough Forbes.

Current land use on the site consists of mechanised peat-cutting to the north-west and south-west of the high bog. Some areas of cutover have been reclaimed for agriculture to the south-east and there are small conifer plantations to the east. Damaging activities associated with these land uses include drainage and burning. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site and pose a continuing threat to its viability. The bog is generally *Sphagnum*-poor due to burning, but regeneration is taking place.

Clooneen Bog is a site of considerable conservation significance as it consists of a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level. Bog woodland is listed as a priority habitat on Annex I of the E.U. Habitats Directive - priority status is given to habitats and species that are threatened throughout the E.U. The areas of degraded raised bog and *Rhynchosporion* are also of conservation importance, being habitats that are listed on Annex I of the E.U. Habitats Directive.

Site Name: Mount Jessop Bog SAC
Site Code: 002202

Mount Jessop Bog SAC occurs within the larger raised bog system that is designated as Mount Jessop Bog NHA (001450). It is situated 5 km south-west of Longford Town in the townland of Mount Jessop, Co. Longford. The site is part of a basin raised bog that includes both areas of high bog and cutover bog. The site is bordered by open high bog on its northern and western sides and by agricultural land on its eastern side and southern side. The underlying geology is carboniferous limestone.

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):

[7120] Degraded Raised Bog
[91D0] Bog Woodland*

Degraded Raised Bog corresponds to those areas of high bog where the hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration to Active Raised Bog within 30 years. Bog Woodland develops on wet peaty soils, with a permanently high water level and it is generally dominated by Downy Birch (*Betula pubescens*) or Scots Pine (*Pinus sylvestris*), with the ground layer dominated by bog mosses and other characteristic species. It is a very rare habitat covering less than 150 ha in Ireland.

Mount Jessop Bog SAC consists of 71.91 ha of raised bog (25.7 ha of high bog and 46.21 ha cutover). In the SAC, approximately 31 ha (44%), both high bog and cutover, was afforested with conifer plantations between 1973 and 1975. Only 11% (8.0 ha) remained open high bog. The remainder of the cutover developed either into birch and willow scrub (19.5 ha) or remained open (12.5 ha) and dominated by heath and bog species.

On the remaining area of open high bog much of the vegetation is typical of Midland Raised Bog type, consisting of Heather (*Calluna vulgaris*), Bog Asphodel (*Narthecium ossifragum*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), Cross-leaved Heath (*Erica tetralix*), White Beak-sedge (*Rhynchospora alba*) and bog mosses. There are wet spongy areas with hummock/hollow systems, which are mainly composed of bog mosses such as *Sphagnum capillifolium* and *S. subnitens*, but some small hummocks of scarce *S. austinii* and *S. fuscum* occur. In places, *Sphagnum* hummocks support the Midland raised bog indicator species Bog Rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*). There is also a record of one of the Western raised bog indicators, the liverwort *Pleurozia purpurea*, being present in the NHA suggesting that this bog has transitional features between the two types of raised bog in Ireland. Lodgepole Pine (*Pinus contorta*), which is invading the open bog, is being controlled as part of the restoration plan for the site.

The conifer plantations were all felled by 2012. All of the intensive drainage systems associated with the plantations were blocked by 2013 as part of an EU-funded LIFE project so as to raise the water table and restore Active Raised Bog (ARB) on the site. Prior to the felling, there were relatively few bog species present in the plantations except along fire breaks and at plantation margins. With the clear-felling of conifers and blocking of drains the high bog appears to be re-wetting, water-levels in some areas now remain high throughout the year and limited areas of wet flats and hollows are developing. As a consequence, raised bog vegetation has returned, with

Heather and Hare's-tail Cottongrass dominating, while Common Cottongrass (*Eriophorum angustifolium*), Bog Asphodel and White Beak-sedge are locally common and small amounts of Bilberry (*Vaccinium myrtillus*) and Cross-leaved Heath are widespread. Purple Moor-grass (*Molinia caerulea*) and Soft Rush (*Juncus effusus*) are also present. Bog mosses are regenerating, including *Sphagnum papillosum*, *S. capillifolium*, *S. palustre* and *S. subnitens*, with *Sphagnum cuspidatum* and *S. recurvum* in drains. However, the majority of the restored areas have not yet developed vegetation characteristic of the wet bog conditions. Associated with the bog species there is the development of a considerable amount of ruderal vegetation such as Bramble (*Rubus fruticosus*) and willowherbs (*Epilobium* spp.) with conifer and birch regeneration. This situation is expected to improve over time as the bog surface becomes wetter.

Four small areas, covering 1.14 ha in the northern and western sections of the SAC, have been identified by hydrological modelling and ground survey as Degraded Raised Bog (7120) habitat and these are showing significant indications of recovery. The main areas are on the open bog in the west of the formerly afforested area and in the north-west of the clear-fell area. These areas now have standing surface water in the hollows and pools for most of the year and considerable areas of regenerating *Sphagnum* species. It is considered that these areas will support some areas of Active Raised Bog (7110) habitat within 10–20 years and that this habitat will continue to develop and spread over the following decades.

The unafforested cutover bog areas of the site are mainly overgrown with Downy Birch, Gorse (*Ulex europaeus*), and willow (*Salix* spp.) scrub with occasional Lodgepole Pine from adjacent forestry. There is an area of 0.23 ha of wet woodland on cutover bog to the south-east of the site. This contains depressions with pools and tree species such as Alder (*Alnus glutinosa*), Willow and Downy Birch, which has developed into Bog woodland (91D0). Water-levels remain high throughout the year and the bog moss *Sphagnum cuspidatum* dominates the wet hollows. It is anticipated wetter. There is also an area of 0.29 ha of very wet clear-fell on cutover adjacent to the Bog Woodland habitat which is expected to develop into that habitat in the medium to long term.

Current landuse on the site consists of conservation management with the removal of conifer plantations and the blocking of drainage associated with these plantations. All the large area planted with coniferous forestry has been clear-felled and drainblocked as part of the Coillte EU Life Project Demonstrating Best Practice in Raised Bog Restoration in Ireland and the control of regeneration of non-native species such as Lodgepole Pine is on-going. There is a small amount of peat-cutting, with its associated risks of drainage and fire in the NHA which, if allowed to continue, could cause some long term problems to the maintenance of the conservation values of the SAC.

Mount Jessop Bog SAC is a site of considerable conservation significance comprising raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. It contains good examples of the Habitats Directive Annex I habitat Degraded Raised Bog (capable of regeneration) which is reverting to the priority Annex 1 habitat Active Raised Bog (7110) and a small area of the Annex 1 priority habitat Bog Woodland which is developing on the cutover. The site already supports a good diversity of raised bog microhabitats, including some hummock/hollow complexes, and rewetted cutover bog. Red Grouse, a bird which is becoming increasingly rare in Ireland, has been recorded at this site, along with the Irish Hare — a Red Data Book species — which increases its overall scientific interest.

Ireland has a high proportion of the total E.U. resource of Atlantic raised bog (over 50%) and so has a special responsibility for its conservation at an international level. The site is being actively managed for conservation as part of the Coillte EU LIFE Project and most of the required major restoration measures have already been carried out. Those measures that remain, or are on-going, will be included in an After LIFE management plan which is being developed by Coillte for the future conservation management of the SAC. The SAC is located within the raised bog Mount Jessop Bog NHA, the conservation management of which should support the redevelopment of Active Raised Bog and Bog Woodland in the SAC. In addition, it is estimated that restoration works carried out on the SAC will benefit the conservation of 2 ha of Active Raised Bog and 0.25 ha of Degraded raised bog in the adjacent area of Mount Jessop Bog NHA (001450).

Site Name: Brown Bog SAC
Site Code: 002346

Brown Bog NHA is located 5 km north-west of Longford town, mainly in the townlands of Tully, Lissanurlan and Cartronlebagh. The site comprises a raised bog that includes both areas of high bog and cutover bog. The bog margins are mainly surrounded by scrub/woodland.

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):

[7110] Raised Bog (Active)*
[7120] Degraded Raised Bog
[7150] Rhynchosporion Vegetation

Active raised bog comprises areas of high bog that are wet and actively peatforming, 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. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*) and Carnation Sedge (*Carex panicea*).

This site is situated in a drumlin-filled valley and consists of a small raised bog characterised by a central wet depression with quaking mats of bog mosses and tear pools colonised by algae. Water flows through the pools and it is possible that there is a spring located in the bog centre. A flush area occurs in the north. Abandoned cutover is found around the northern, western and north-eastern bog margins. Remnant old deciduous woodland occurs to the north-west.

The site supports typical Midland Raised Bog communities, which include Heather (*Calluna vulgaris*), Carnation Sedge, Bog-rosemary (*Andromeda polifolia*) and occasional Cranberry (*Vaccinium oxycoccos*). The high bog supports extensive quaking carpets of bog mosses including *Sphagnum magellanicum*, *S. papillosum* and *S. capillifolium*. Pools occur frequently and support *Sphagnum auriculatum*, Bogbean (*Menyanthes trifoliata*) and Great Sundew (*Drosera anglica*). Bare pools and algal pools are also found. Hummocks of *Sphagnum imbricatum* and *S. fuscum* occur. The high bog is drier around the margins, where Heather and lichens (*Cladonia* spp.) dominate. Scattered Downy Birch (*Betula pubescens*) occurs in association with the northern flush, along with Soft Rush (*Juncus effusus*). Quaking flats of Bog Asphodel and bog moss lawns dominate the inter-pool areas of the flush. One pool with obvious water flow supports Bog Pondweed (*Potamogeton polygonifolius*). Old cutover is mainly colonised by Gorse (*Ulex europaeus*), Downy Birch, Scots Pine (*Pinus sylvestris*) and Purple Moor-grass (*Molinia caerulea*). In the north-west, old deciduous woodland with Downy Birch, Scots Pine, Rowan (*Sorbus aucuparia*) and occasional the Beech (*Fagus sylvatica*) is found.

There are few land uses associated with this site. There are no high bog drains and only two sets of marginal drains are present in the cutover to the north-west. At present there is no active peat-cutting on the site. A large area of cutover to the east

of the site has been recently afforested with Sitka Spruce (*Picea sitchensis*). The majority of the bog has not been burnt for some time, although recent localised burning has taken place along the southern margin. Overall there has been little damage to this bog, with only small areas of cutover present. Most of the extent of the original peat basin appears to be remaining. However, peat-cutting and burning are the two main threats to the site.

Brown Bog is a site of considerable conservation significance as it comprises a relatively little-damaged raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. Although the site is small it supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

SITE NAME: BALLYKENNY-FISHERSTOWN BOG SPA
SITE CODE: 004101

Ballykenny-Fisherstown Bog SPA is located on the border between Counties Longford and Roscommon in the north-central midlands and is underlain by Carboniferous limestone. It is centered around Lough Forbes, a naturally eutrophic lake on the River Shannon system which is fed also from the north by the River Rinn. The lake has well-developed swamp vegetation and displays natural transitions to seasonally flooded grassland, marsh and raised bog. The raised bogs, known as the Ballykenny-Fishertown complex, are separated by the Camlin River, which has further areas of callow grassland. The central core areas of the bogs are quite wet with a good complement of bog mosses (*Sphagnum* spp.) and well-developed hummocks. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. Between the Camlin River and this bog, a complete transition from raised bog to callow grasslands can be seen, while the interface between the bog and lake is colonised by a narrow band of deciduous woodland.

At the time this site was designated as a Special Protection Area (SPA) it was being used by part of the Loughs Kilglass and Forbes Greenland White-fronted Goose population. The geese appear to have since abandoned the peatland sites in favour of grassland sites elsewhere. The site was regularly utilised during the 1980s and Greenland White-fronted Goose is regarded as a special conservation interest for this SPA. The last record of Greenland White-fronted Goose at this site was in 1990/91 (111 individuals).

Merlin and Red Grouse have also been recorded within the site.

The lake and callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers: Cormorant (51), Whooper Swan (40), Wigeon (419), Teal (444), Tufted Duck (49) and Goldeneye (11) – are counts are two year mean peaks for the period 1998/99 to 1999/2000

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 species-rich 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