

Appendix 3

Site Synopses and Conservation Objectives References

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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*
[91A0] Old Oak Woodlands
[91D0] Bog Woodland*
[1355] Otter (<i>Lutra lutra</i>)

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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*), Carlina 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.

Pockets of wet woodland occur around the lake. Most of these are dominated by willows (*Salix* spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*). 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 Clooncraft/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. Bog Woodland is considered a variant of ARB.

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's 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, and Marsh Pea (*Lathyrus palustris*) occurs on some of the callowland. 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 quality and include some of the best examples of this habitat in Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for ancient woodland 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.

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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 effuses*) 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 that this habitat will mature and develop further over time as the cutover becomes

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 drain-blocked 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: Ballymore Fen SAC

Site Code: 002313

Ballymore Fen lies approximately 17 km west of Mullingar adjacent to the Mullingar to Ballymore road (R390) in Co. Westmeath. The geology of the area is Carboniferous Limestone. The site occupies a relatively wide and deep depression in the surrounding drift which is fed on both the east and west by springs. The area may at one stage have been a lake of some size but at present is occupied by a transition mire complex with a characteristic lagg fen at the edges.

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):

[7140] Transition Mires

In the wetter areas towards the centre and south of this site the vegetation is characterised by a scraw (i.e. floating vegetation) typified by patches with an abundance of Bogbean (*Menyanthes trifoliata*) and Water Horsetail (*Equisetum fluviatile*). Other associated plants include Marsh Helleborine (*Epipactis palustris*), Water Mint (*Mentha aquatica*), Marsh Cinquefoil (*Potentilla palustris*), Marsh Bedstraw (*Galium palustre*), Wild Angelica (*Angelica sylvestris*), Lesser Spearwort (*Ranunculus flammula*) and sedges (*Carex* spp.). In slightly drier areas and on old banks are willow (*Salix* sp.) saplings, with occasional Ash (*Fraxinus excelsior*), and ferns such as Regal Fern (*Osmunda regalis*) and Broad Buckler-fern (*Dryopteris dilatata*). Where there is flowing water Lesser Water-parsnip (*Berula erecta*) occurs.

At the edge of the wetter area, particularly at the east of the site, a gradation to Black Bog-rush (*Schoenus nigricans*) dominated fen occurs. Willow saplings with some Purple Moor-grass (*Molinia caerulea*) and bog moss hummocks (*Sphagnum* spp.) are found throughout. Between the hummocks, abundant Round-leaved Wintergreen (*Pyrola rotundifolia*), a Red Data Book species, occurs with species typically found in such conditions. The bryophyte communities are of considerable interest.

On the slopes surrounding the fen is a mosaic of improved, semi-improved and species-rich calcareous grasslands lightly grazed by cattle. Plant species present on the slopes at the east include Common Spotted-orchid (*Dactylorhiza fuchsii*), Quaking-grass (*Briza media*), Common Knapweed (*Centaurea nigra*), Oxeye Daisy (*Leucanthemum vulgare*), Crested Hair-grass (*Koeleria macrantha*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Ribwort Plantain (*Plantago lanceolata*) and Cat's-ear (*Hypochoeris radicata*).

Associated with drains and flowing streams throughout the site are the 10-spined Stickleback, along with the Common Frog and Smooth Newt. Five species of dragonfly and damselfly were recorded on the wing: Brown Hawker (*Aeshna grandis*), Common Hawker (*Aeshna juncea*), Keeled Skimmer (*Orthethrum coerulescens*), Azure damselfly (*Coenagrion puella*) and Variable damselfly (*Coenagrion pulchellum*).

Parts of the site have been cut for turf in the past, as evidenced by parallel heather covered ridges and banks. Peat cutting has not occurred for a long time – confirmed by a local landowner. Regeneration of vegetation is occurring in these areas and the ground underfoot is very wet and soft.

Ballymore Fen is interesting due to the overall variety of habitats and species in a relatively small area, and also due to the richness of the transition mire/scraw which is enhanced by the presence of the Red Data Book species Round-leaved Wintergreen.

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SITE SYNOPSIS

SITE NAME: GLEN LOUGH SPA

SITE CODE: 004045

Glen Lough is situated about 5 km north-west of Lough Iron on the border of Co. Westmeath and Co. Longford. Extensive drainage in the 1960s has resulted in a dramatic drop in the watertable here, with the result that there is now little open water, except during flooding in the winter months. Sedge-dominated freshwater marsh now occupies the majority of what was once open water. Plant species present include Bottle Sedge (*Carex rostrata*), Water Horsetail (*Equisetium fluviatile*) and Canary Reed-grass (*Phalaris arundinacea*). Other habitats present include reedswamp, wet and dry grassland, cutaway bog colonised by heath vegetation, scrub and wet willow (*Salix* spp.) woodland.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan.

An internationally important Whooper Swan population uses the site at times. This flock (mean peak of 327 individuals for the 5 seasons 1995/96-1999/2000) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (81), Teal (69), Mallard (46), Pintail (7) and Shoveler (23). Lapwing (189) is also found in the area (all figures are mean peaks for the 5 seasons 1995/96-1999/2000).

Whilst this site attracts a range of wintering waterfowl, the principal ornithological interest lies in the internationally important Whooper Swan population that is based in the area. Whooper Swan is of particular note as it is listed on Annex I of the E.U. Birds Directive. Greenland White-fronted Goose, nowadays an occasional visitor to the site, is also listed on Annex I of this Directive. The site provides useful habitat for Shoveler, which in Ireland is a fairly localised species. Glen Lough is a Ramsar Convention site.

7.7.2014

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 Club-rush (*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.

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30.5.2015

Lough Ree SPA (Site Code: 004064) overlaps with both Lough Ree SAC (Site Code: 000440) and Lough Slawn pNHA (Site Code: 001443). The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Mount Jessop Bog SAC (Site Code: 002202) overlaps with Mount Jessop Bog NHA (Site Code: 001450). The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Glen Lough SPA (Site Code: 004045) overlaps with Glen Lough pNHA (Site Code: 001687). The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Site specific and more detailed conservation objectives were available for the following sites:

- NPWS (2018a) Conservation Objectives: Lough Ree SPA 004064. Generic Version 6.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2016a) Conservation Objectives: Lough Ree SAC 000440. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- NPWS (2018b) Conservation Objectives: Ballymore Fen SAC 002313. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018c) Conservation objectives for Mount Jessop Bog SAC [002202]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.
- NPWS (2018d) Conservation objectives for Glen Lough SPA [004045]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

The following conservation objectives supporting documents have been produced for Lough Ree SPA (Site Code: 004064):

- NPWS (2016b), Loch Ree SAC (Site Code: 000440) Conservation objectives supporting document – raised bog habitat, Version 1, National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- SI No. 456 of 2012, European Communities (Conservation of wild birds (Lough Re Special Protection Area 004064) regulations 2012. European Union, The Stationery Office, Dublin, Ireland.
- Hunt, J., Heffernan, M.L., McLoughlin, D., Benson, C. & Huxley, C. (2013) The breeding status of Common Scoter, *Melanitta nigra* in Ireland, 2012. Irish Wildlife Manuals, No. 66. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Ireland.

The following conservation objectives supporting documents have been produced for Lough Ree SAC (Site Code: 000440):

- Alexander, K. N. A. (2011) An invertebrate survey of Coill Eoin, St John's Wood, Co Roscommon. Irish Wildlife Manuals, No. 57. National Parks and Wildlife Service, Department of the Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- Martin, J.R., Gabbett, M., Perin, PM., Delaney, A., (2007), 'Semi-Natural Grassland Survey of Counties Roscommon and Offaly', DEC Consultants.
- O Connor, Á. (2015) Habitats Directive Annex I lake habitats: a working interpretation for the purposes of site-specific conservation objectives and Article 17 reporting. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
- NPWS (2016b), Loch Ree SAC (Site Code: 000440) Conservation objectives supporting document – raised bog habitat, Version 1, National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.

The following conservation objectives supporting documents have been produced for Ballymore Fen SAC (Site Code: 002313):

- SI No. 303 of 2016, European Communities (Ballymore Fen Special Area of Conservation 002313) regulations 2016. European Union, The Stationery Office, Dublin, Ireland.

The following conservation objectives supporting documents have been produced for Mount Jessop Bog SAC (Site Code: 002202):

- NPWS (1995a), Mount Jessop Bog NHA (001450) site synopsis, National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- SI No. 599 of 2003, European Communities (Natural Heritage Area (Mount Jessop Bog NHA 001450) regulations 2003. European Union, The Stationery Office, Dublin, Ireland.

The following conservation objectives supporting documents have been produced for Glen Lough SPA (Site Code: 004045):

- NPWS (1995b), Glen Lough pNHA (001687) site synopsis, National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
- SI No. 65 of 2010, European Communities (Conservation of Wild Birds (Glen Lough Special Protection Area 004045)) regulations 2010. European Union, The Stationery Office, Dublin, Ireland.

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