Habitats and Ramsar Regulations Assessment: Test of Likely Significance

Assessment of the Lough Erne commercial fishery on the designated features of the Upper Lough Erne SPA, SAC and Ramsar site

Prepared by AFBI Fisheries and Aquatic Ecosystems Branch for the Department of Agriculture, Environment and Rural Affairs

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Further information

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Contents

Introduction

European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, and Directive 2009/147/EC on the Conservation of wild birds (often referred to as the Habitats and Birds Directives respectively) were developed with the aims of protecting habitats and species considered to be of European interest. This is achieved through member states designating sites as Special Areas of Conservation (SAC) for the protection of habitats and species (as listed in Annex I and Annex II of the Habitats Directive respectively) and Special Protection Areas (SPA) for the protection wild birds and the habitats of listed species. The Habitats and Birds Directives were brought into effect in Northern Ireland law by the Conservation Regulations (Natural Habitats, etc.) (Northern Ireland) 1995, also known as the Habitats Regulations. SAC and SPA designated sites form the Natura 2000 network of sites (sometimes referred to as N2K). The convention on wetlands - the Ramsar Convention is an intergovernmental environmental treaty established in 1971 by UNESCO, and implemented in 1975. It provides for national action and international cooperation regarding the sustainable use and conservation of wetlands. The Department of Agriculture, Environment and Rural Affairs commissioned AFBI to undertake a Habitats Regulations and Ramsar Assessment report for commercial fishing activities within the Upper Lough Erne SPA, SAC and Ramsar site in Northern Ireland. This document therefore assesses the potential impacts of commercial fishing activities on the designated features and conservation objectives of the designated sites outlined above. This assessment is based on information available from AFBI researchers, the DAERA and the scientific literature.

The Erne basin is one of the most perplexing and interesting of the large waterbodies on the island of Ireland. It is an area of outstanding natural beauty, ecological, historical and archaeological significance. Lough Erne consists of two sub lakes, Upper and Lower Lough Erne and many of its inflowing rivers widen into significantly sized lakes.

Lower Lough Erne is the fourth largest Irish lake, with a surface area of 110 km^2 (Gibson, 1988). The broadest sections of the lake are deep with a maximum recorded depth of 62m and a mean depth of 12m. This lake is considered a heavily modified waterbody (NIEA, 2009). Littoral areas along the shores are confined to sheltered bays on western shores and exposed bays on eastern shores situated on

carboniferous limestone. There are many other smaller lakes in the catchment connected either directly or indirectly to Upper Lough Erne (Gibson, 1998). The system spans each side of the Northern Ireland – Republic of Ireland border. In the southern jurisdiction in counties Cavan and Monaghan there are 44 lakes (Bowman *et al* 1996) and in County Fermanagh in the northern jurisdiction where each of the Erne sub lakes are situated, there is a total of 357 lakes of diverse water chemistry reflected by differing underlying geology (Gibson, 1988).

Until 2009, Lough Erne supported a commercial eel fishery. Between 10 and 16 commercial fishing licences were issued annually between 2007 and 2009; subsequently commercial eel fishing was prohibited on Lough Erne from 2010 due to a pan-European decline in eel abundance and a need for conservation led management. Currently the only significant commercial fisheries are a small pike fishery consisting of only two to six active fishermen and a conservation eel fishery which captures migrating eels and transports these past the hydro-electric stations.

Upper Lough Erne was designated a Ramsar site in 1994, SPA in 1997 and SAC in 2005 (JNCC, 2008, JNCC, 2015a, JNCC, 2015b). The protected areas include the entire Upper Lough including islands and shorelines and some marginal terrestrial habitats (Figure 1,Figure *2* & Figure *3*). The SPA and SAC qualifies under Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC by supporting populations of whooper swan (*Cygnus Cygnus*), otter (*Lutra lutra*) and Atlantic salmon (*Salo salar*),

Assessment under Article six of the Habitats Directive

Screening Matrix: Commercial fishing activities within the Upper Lough Erne SPA, SAC and Ramsar site.

Name of Project or Plan:	Commercial fishing activities in the Upper Lough Erne SPA, SAC and Ramsar site
Name and location of Natura 2000 site (s)	**Assessment of the Lough Erne commercial fishery on the designated features of the Upper Lough Erne SPA** SAC Area: 5751.34 ha SPA Area: 5762.08 ha Ramsar area: 5818.07 Site centre location: Latitude : 54.2° Longitude: -7.49444° Date Designated as SAC: 2005 Date Designated as SPA: 1997 Date Designated as Ramsar site: 1994 Upper Lough Erne is situated in Co. Fermanagh in the west of Northern Ireland. It is a large and complex freshwater system consisting of a series of flooded drumlins which give rise to many islands and bays. Marginal habitats include damp pastures, fens, reed swamp, alder/willow carr and oak woodland (DOE, 2007, DOE, 2008, JNCC, 2008)
Natura 2000 site features:	Natura 2000 data forms list designated features as being classified either A, B, C, D, E etc. Only features classified as either A, B, or C are considered as Natura 2000 features and need to be considered within impact assessments. This site qualifies under Article 4 of the Directive 79/409/EC (EEC, 1979) by supporting populations of European importance of the following species:

	<u>Whooper Swan (*Cygnus cygnus*) (JNCC, 2015b)</u> 2016-2017 Population size – 442 individuals 5 year average – 531 individuals **Population count taken from Frost et al. (2018)** **<u>Otter (*Lutra lutra*) (JNCC, 2015a)</u>** ***<u>Salmo salar</u>* <u>(JNCC, 2015a)</u>** **The site qualifies under annex 1 of the directive for providing the following habitats as listed in JNCC (2015a):** **3150 –** Natural eutrophic lakes with magnapotomnion or hydrocharition type vegetation. **6410 –** Molinia meadows on calcareous, peatey or clayey – silt lafen soils (*Molinion caerulae*). **7230 –** Alkaline fens. **91A0 –** Old sessile oak woods with Ilex and Blechnum in the British Isles. **91D0 –** Bog woodland. **91E0 –** Alluvial forests with *Alnus glutinosa, Fraxinus excelsior* and *Salicion albae.*
Additional Ramsar features	**Criterion 1** This site is a particularly good representative example of a eutrophic lake and associated swamp, fen and wet grassland.

	This site is also a particularly good representative example of a wetland which plays a substantial hyrdrological, biological and ecological system role in the functioning of a major river basin which is located in a cross border region. (DOE, 2007) **Criterion 2** The site supports an appreciable assemblage of rare, vulnerable or endangered species or sub-species of plant and animal. Plant species published in Irish Red Data Books (1988) include *Viola stagnalis, Spiranthes romanzoffiana, Nitella mucronata* and the moss *Fissidens monguilloni.* Vertebrate species listed in the Irish Red Vertebrate Data Books (2009, 2011, 2013) Whiskered Bat (*Myotis mystacinus*), Shoveler (*Anas clypeata*), Pochard (*Aythya ferina*) and Brook Lamprey (*Lampetra planeri*). Rare or endangered invertebrate species include White-Clawed Crayfish (*Austropotamobius pallipes*), Lunar Hornet Moth (*Sesia bembeciformes*), *Lymnoporus rufoscutellatus*, *Donacia aquatic, D. bicolora, Gyrinus distinctus, G. natator* and *Hydroporus glabriusculus* and the carabid *Lebia cruxminor.* This site qualifies under this criterion as it is of special ecological value for maintaining the genetic and ecological diversity of Northern Ireland due to the quality and uniqueness of its flora and fauna. Many of the plant and animal species listed above are isolated within this area (DOE, 2007). **Criterion 3** The site regularly supports significant numbers of individuals of waterfowl which are indicative of productivity, diversity and wetland value. Wildfowl species which occur in significant numbers include Great Crested Grebe (*Podiceps cristatus*), Cormorant (*Phalacrocorax carbo*), Whooper Swan (*Cygnus Cygnus*), Mute Swan (*Anser olor*), Tufted Duck (*Aythya fuligula*), Wigeon (*Anas penelope*), Teal (*Anas crecca*), Goldeneye (*Bucephala clangula*), Coot (*Fulica atra*) and Mallard (*Anas platyrhynchos*). Additionally this site also occasionally supports

	regionally significant numbers of wintering Greenland White-fronted Geese (*Anser albifrons flavirostris*) (DOE, 2007, JNCC, 2008). This site also supports significant numbers of breeding birds including 2% of the Irish population of Great Crested Grebe (*Podiceps cristatus*), Shoveler (*Anas clypeata*), Pochard (*Aythya farina*), Curlew (*Numenius arquata*), Snipe (*Gallinago gallinago*) and Redshank (*Tringa totanus*) (DOE, 2007, JNCC, 2008). **Criterion 6** The site regularly supports internationally important numbers of wintering Whooper Swans (*Cygnus cygnus*) (JNCC, 2008). 2016-2017 Population size – 442 individuals 5 year average – 531 individuals **Population count taken from Frost et al. (2018)**
Description of the Project or Plan	Commercial fishing on Upper Lough Erne **Size and scale** Commercial fishing is licensed to take place on Lough Erne (upper and lower). The vast majority of fishing occurs on Lower Lough Erne which is outside the remit of the habitat regulations. Upper Lough Erne comprises of an area of aproximately 4,000 ha. It must be noted that the legislating body for commercial fishing in Upper Lough Erne are proposing to stop commercial fishing in the Upper Lough (DAERA, 2018). Commercial fishing must be conducted in accordance with the law, see: Fisheries Act (1966), Fisheries Regulations (2014). The pike fishing open season spans the 1st October to the last day of February. Fishers must use gill nets with mesh size ≥ 63mm. The maximium length of net is 460 m. Fishing is prohibited within 1,610 m of river mouths.

	Land-take Not applicable **Distance to key features of Site** Fishing activity occurs within the boundaries of Lough Erne but does not occur in other waterbodies within the habitat regulated area.
Is the Project or Plan directly connected with or necessary to the management of the site (provide details)?	**No**
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on Natura 2000 site.	**Potential impacts of commercial fishing within upper Lough Erne on the designated features are as follows:** **Entanglement and disturbance to migratory, resident and breeding birds including Whooper Swan (*Cygnus cygnus*)** This site supports significant numbers of wildfowl. **Entanglement and disturbance of Otter (*Lutra lutra*)** **Capture of Atlantic Salmon (*Salmo salar*)**

N2K Feature: Mention all features	**Describe any likely direct, indirect effects to the N2K features arising as a result of: Loss, reduction of habitat area; disturbance; habitat or species fragmentation; reduction in species density; changes in key indicators of**	***Effect Significant/Not Significant? Why?**

	conservation value (e.g. water quality, climate change).	
	Whooper Swan (*Cygnus cygnus*)	The regulated site Upper Lough Erne is a relatively small component of the Lough Erne fishery and as such commercial fishing activities at this site as described above are not likely to cause any significant disturbance to overwintering Whooper Swans (*Cygnus Cygnus*) and will not impact on food items. The methods of fishing used is also unlikely to entangle or adversely impact on this species. 2016-2017 Population size– 442 individuals 5 year average - 531 individuals **Population data from Frost et al. (2018)**
	Otter (*Lutra lutra*)	Due to the low intensity of fishing in upper Lough Erne, otters are unlikely to be significantly disturbed. Entanglement of otters in gill nets is not regularly reported in scientific or grey literature. It is likely that the breaking strain of the net mesh is weak enough to not entangle otter. In AFBI gill net surveys of Lough Erne and elsewhere over the past 27 years

		no otters have been caught in gill nets. Capture of otters in fyke nets is well reported (Koed and Dieperink, 1999, CFB, 2010) and if fyke net licences are to be issued it would be advisable to ensure that fishers use otter guards on their nets to mitigate this risk.
	Atlantic Salmon (*Salmo salar*)	Due to a series of anthropogenic features downstream of Lough Erne including hydropower stations and arterial drainage, the population of Atlantic Salmon in each of the lakes is minimal (2018 run = 2,492; %CL = 15% (Gargan et al., 2018)). AFBI surveys using similar gear to commercial fishers has throughout a >20 year time series failed to capture any wild Atlantic Salmon. Given the low intensity of the commercial fishery and the limited run of wild Salmon in these lakes this activity is unlikely to have any adverse impact. On the contrary a cessation of commercial pike fishing could have a detrimental effect on Salmon should the population increase following any future downstream mitigation measures.

Ramsar features:	**Describe any likely direct, indirect effects to the Ramsar features.**	***Effect Significant/Not Significant? Why?**

	Criterion 1	Commercial fishing will pose no significant threat to the features described in criterion Fishing occurs from boats and no terrestrial habitat is affected. Catches are landed at established quays. It must also be noted that the majority of commercial fishing occurs in Lower Lough Erne which is outside the designated Ramsar site.
	Criterion 2	Fishing in open water away from terrestrial or aquatic vegetation. Gill netting is a passive method and disturbs little vegetation. Commercial fishing poses little threat to the listed invertebrates. It must also be noted that the majority of commercial fishing occurs in Lower Lough Erne which is outside the designated Ramsar site.

	Criterion 3	Small scale commercial fishing activities at this site are not likely to cause any significant disturbance to the wider waterfowl assemblage as listed in DOE (2007) and will not significantly impact on food items. It must also be noted that the majority of commercial fishing occurs in Lower Lough Erne which is outside the designated Ramsar site.

Describe any potential effects on the Natura 2000 site as a whole in terms of: interference with the key relationships that define the structure or function of the site	Adequate and measured management of the Lough Erne fishery will ensure that interference to the key species listed in the Upper Lough Erne SPA (JNCC, 2015b) and SAC (JNCC, 2015a) is mitigated. Fishers use established marinas and quays to moor their boats and land their catch and as such no nesting or roosting sites are disturbed. Furthermore pike which are commercially fished have been attributed to population declines or extirpation of several native fish species such as char, brown trout and Atlantic salmon – juveniles of these species are important food sources for piscivorous aves.

Provide details of any other projects or plans that together with the project or plan being assessed could (directly or indirectly) affect the site.	• Modification of cultivation practices • Grazing • Mining and quarrying • Utility and service lines • Airport and flightpaths

	• Outdoor sports, leisure activities and recreational activities • Interpretive centres • Pollution to surface waters • Invasive species • Ecosystem modifications • Changes in biotic / abiotic conditions

Is the potential scale or magnitude of any effect likely to be significant?	**Yes**☐ **No**☒

List of Agencies / Organisations Consulted: Provide contact name and telephone or email address.	Agri-Food and Biosciences Institute Department of Agriculture Environment and Rural Affairs British Trust for Ornithology
Habitats Regulations Assessment Summary	Commercial fishing activities at the Upper Lough Erne SAC and SPA is unlikely negatively impact the conservation objectives of the designated features of the SAC.

Conclusion: Is the proposal likely to have a significant effect on an N2K site?	**Yes**☐ **No**☒

Data collected to carry out the assessment

Who carried out the assessment?	The Agri-food and Biosciences Institute (AFBI) acting on behalf of the Department of Agriculture, Environment and Rural Affairs.
Sources of data	**Agri – Food and Biosciences Institute - data holdings** **WeBS – Core count data** Frost et al. (2018)
Level of assessment completed	Stage one: Screening

Finding of No Significant Effects Report Matrix

Name of Project or Plan	The Agri-Food and Bioscience Institute (AFBI) acting on behalf of the Department of Agriculture Environment and Rural Affairs.
Name and location of Natura 2000 site	Upper Lough Erne Site centre location: Latitude : 54.2° Longitude: -7.4944°
Description of the Project or Plan	Commercial fishing in Upper Lough Erne. Fishing methods used are gill net. All methods are operated from small vessels. Fishers must be licenced by DAERA. There are approximately 5 licenced boats although not all are active.
Is the Project or Plan directly connected with or necessary to the management of the site (provide details)?	**No**
Are there other projects or plans that together with the project of plan being assessed could affect the site (provide details)?	**No**

The Assessment of Significance of Effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site	This project is unlikely to affect this Natura 2000 site as commercial fishing is conducted on the open lake and does not breach the shoreline. Fishers use established quays and marinas to moor boats and land catches. **Entanglement in nets** **Noise disturbance**

Explain why these effects are not considered significant	**New Marinas / Quays** The creation of new marinas or quays would be subject to planning and would require a further habitat regulations assessment. **Entanglement** Gill nets are set in the water column below the surface. There is a small chance of entanglement by diving birds. AFBI has conducted many fish surveys on Lough Erne and elsewhere using commercial gears and also scientific specific sampling equipment which exceed the legal lower limit of mesh size permitted for use by commercial fishers. In 28 years of fish surveys using an estimated 2000 gill nets, each set overnight on Loughs Neagh, Erne and elsewhere AFBI have captured 3 birds; great crested grebe (n=2) and coot (n=1). Both great crested grebes were unharmed and released alive. **Noise Disturbance** Use of commercial fishing boats does generate some noise. Given that the majority of fishing occurs outside the designated areas and is conducted on a very small scale it is unlikely that noise disturbance will affect the designated features of this area. The predominant motor boats using the area are pleasure craft and commercial fishing boats contribute a miniscule proportion of boating traffic.

Who carried out the assessment	Sources of Data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed?
AFBI	AFBI DAERA BTO	Stage one screening	AFBI 18A Newforge Lane Belfast BT9 5PX

Recommendations

In light of the information contained within the above sections AFBI have the following recommendations for the management of commercial fishing within the Upper Lough Erne designated sites:

- Commercial fishing activities as described in the above sections to be permitted within the parameters of the law.
- Fishers should continue to work with AFBI's lake and eel research teams to ensure an adequate level of protection is continually provided to non-target species including those species listed in the site designations.

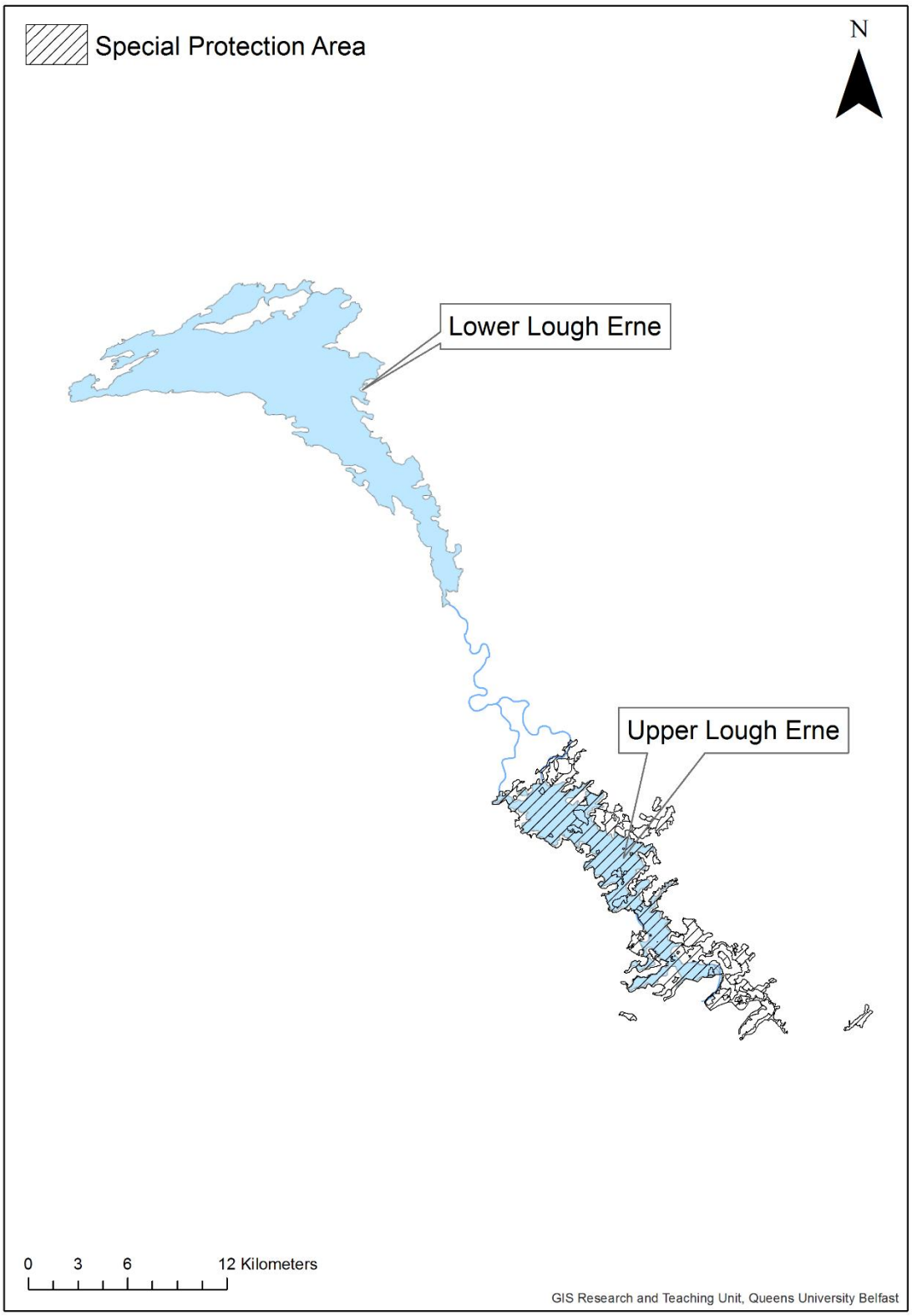

Figure 1: Lough Erne with the Upper Lough Erne SPA overlaid.

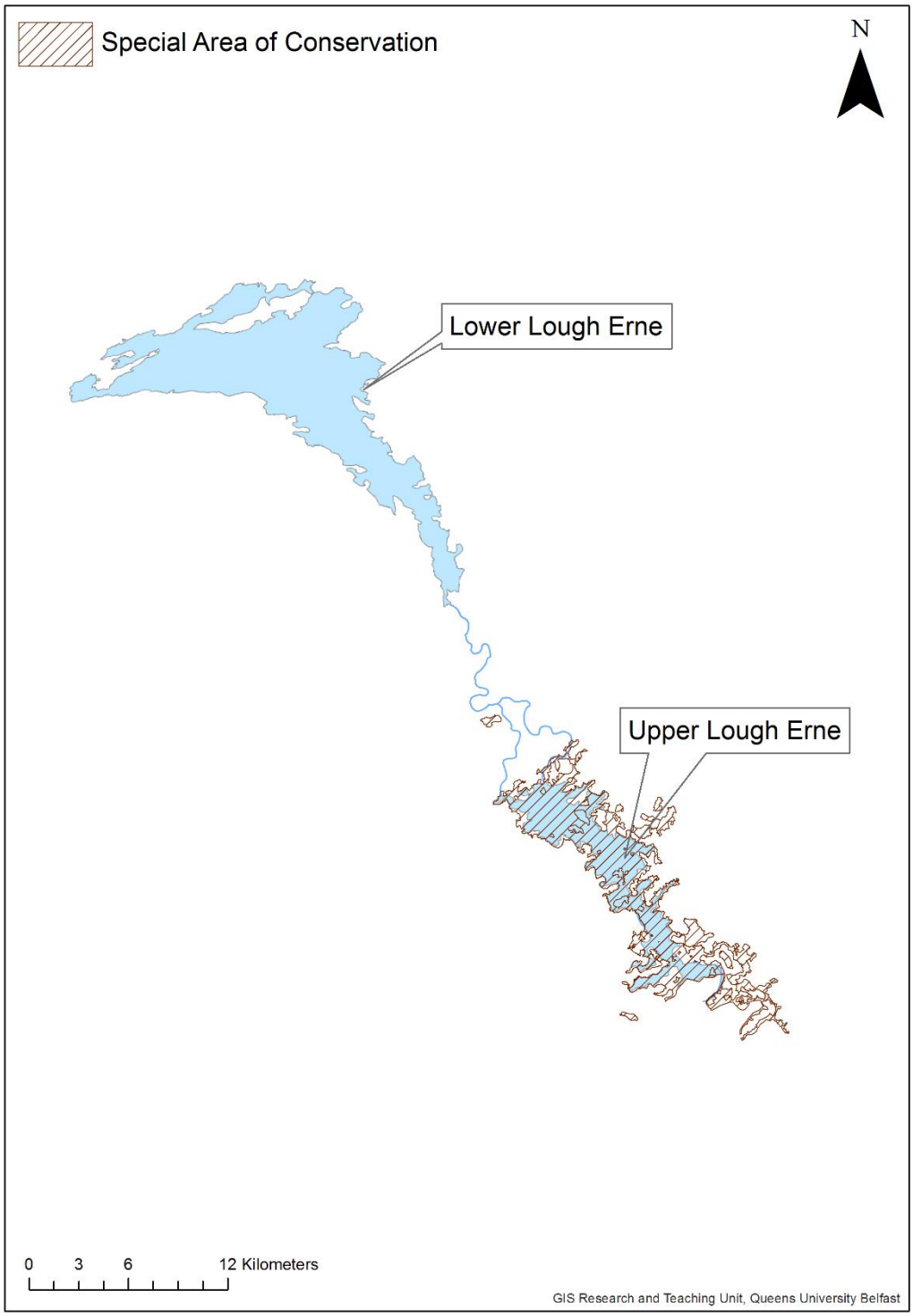

Figure 2: Lough Erne with the Upper Lough Erne SAC site overlaid.

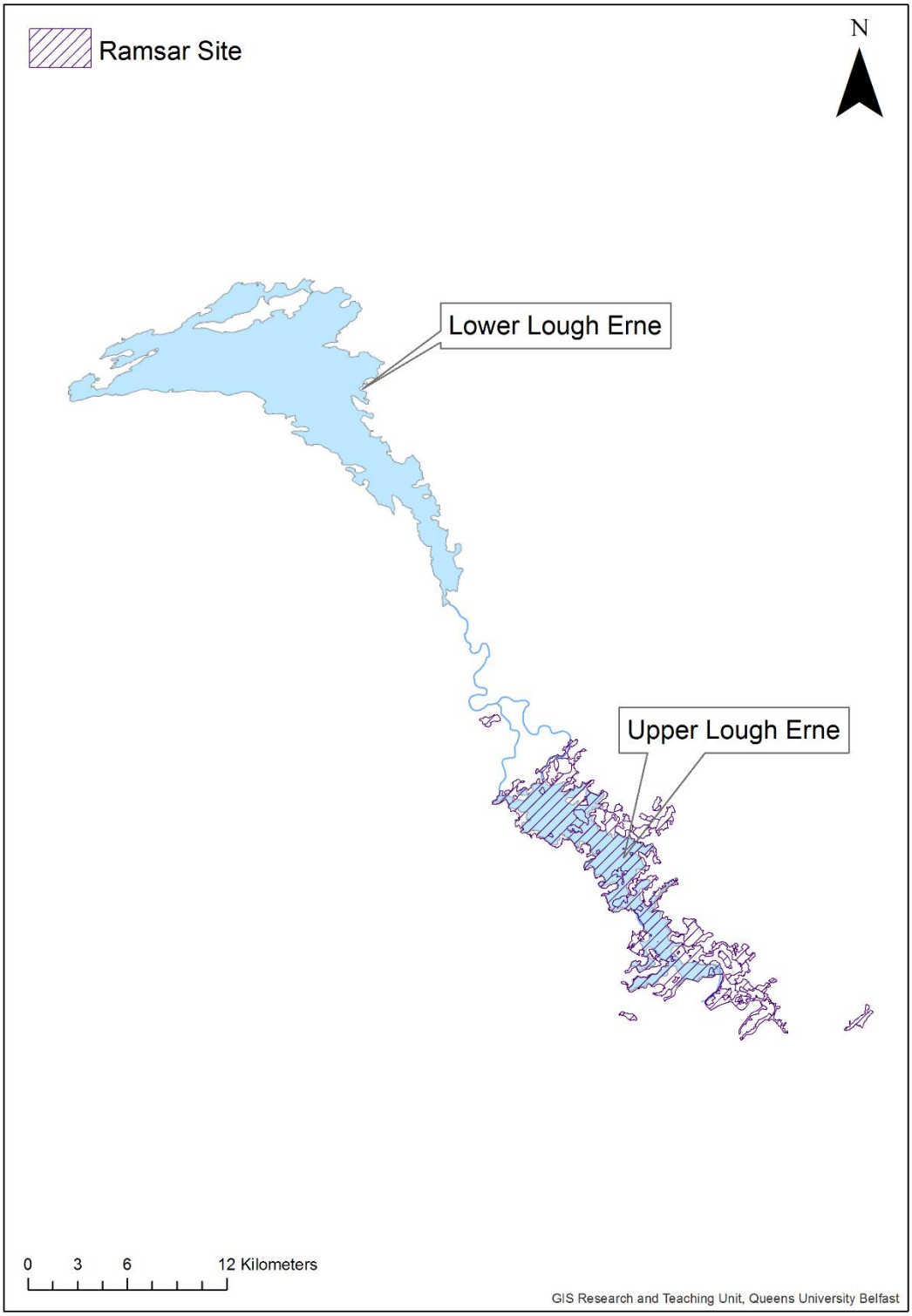

Figure 3: Lough Erne with the Upper Lough Erne Ramsar site overlaid.

Annex 1: Natura 2000 data form for the Upper Lough Erne SPA

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee 25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and for
Special Areas of Conservation (SAC)

SITE **UK0016614**

SITENAME **Upper Lough Erne**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	UK0016614

1.3 Site name

Upper Lough Erne

1.4 First Compilation date	1.5 Update date
1995-06	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

Date site proposed as SCI:	1995-06
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-05
National legal reference of SAC designation:	Regulations 6-7 and 10-12 of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (http://www.legislation.gov.uk/nisr/1995/380/contents/made) as amended by The Conservation (Natural Habitats, etc.)

(Amendment) Regulations (Northern Ireland) 2004 (http://www.legislation.gov.uk/nisr/2004/435/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-7.494444444	54.2

2.2 Area [ha]:

5751.34

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKN0	Northern Ireland

2.6 Biogeographical Region(s)

Atlantic (100%).0

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
3150			3853.4		G	A	A	B	A
6410			1.15		G	D			
7230			1.15		G	D			
91A0			275.49		G	A	C	A	B
91D0	X		0.58		M	D			

91E0	X		130.56	G	A		B	A		B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)

- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
M	1355	Lutra lutra			p				C	DD	C	A	C	B
F	1106	Salmo salar			p				R	DD	D			

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if no even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N10	17.0
N06	67.0
N07	9.0
N16	7.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: limestone,sandstone,nutrient-rich,clay,basic,alluvium,peat 2 Terrestrial:
Geomorphology and landscape: floodplain,lowland,island

4.2 Quality and importance

Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation for which this is considered to be one of the best areas in the United Kingdom. Old sessile oak woods with Ilex and Blechnum in the British Isles for which this is considered to be one of the best areas in the United Kingdom. Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) for which this is considered to be one of the best areas in the United Kingdom. Lutra lutra for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
M	G02		I
M	F03		I
M	G01		I
H	H04	N	I
H	I01		I
H	B06		I
H	J02		I
H	H01		O

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	J02		I
H	B02		I
H	G01		I
M	F03		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the DOENI link below provides access to the Conservation Objectives for this site.

See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): https://www.doeni.gov.uk/sites/default/files/publications/doe/land-information-upper-lough-erne-conservation-objectives-

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Northern Ireland Environment Agency
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
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1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
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1310	Salicornia and other annuals colonizing mud and sand	57
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1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
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2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha• rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57

2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
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4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
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5130	Juniperus communis formations on heaths or calcareous grasslands	57
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SBA	Breeding seabird assemblage	UK specific code
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4.1 Habitat class code

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N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65

D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65

XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

Annex 2: Natura 2000 data form for the Upper Lough Erne SPA

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and for
Special Areas of Conservation (SAC)

SITE **UK9020071**

SITENAME **Upper Lough Erne**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	UK9020071

1.3 Site name

Upper Lough Erne

1.4 First Compilation date	1.5 Update date
1997-03	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1997-03
National legal reference of SPA designation	Regulations 8A-8B and 10-12 of The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (http://www.legislation.gov.uk/nisr/1995/380/contents/made) as amended by The Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2004 (http://www.legislation.gov.uk/nisr/2004/435/contents/made) and The Conservation (Natural Habitats, etc.) (Amendment)

Regulations (Northern Ireland) 2011 (http://www.legislation.gov.uk/nisr/2011/216/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-7.494444444	54.2

2.2 Area [ha]: 5762.08

2.3 Marine area [%] 0.0

2.4 Sitelength [km]: 0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKN0	Northern Ireland

2.6 Biogeographical Region(s)

Atlantic (100%).0

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A038	Cygnus cygnus			w	352	352	i		G	B		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)

- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if no even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N06	67.0
N07	9.0
N16	5.0
N10	19.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: alluvium,limestone,clay,nutrient-rich,peat,basic 2 Terrestrial: Geomorphology and landscape: floodplain,lowland,island

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Cygnus cygnus (Iceland/UK/Ireland) 3.4% of the all-Ireland population 5 year peak mean, 1991/2-1995/6

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	G01		I
L	H01		O
H	A04		B
L	A02		I
H	M01		O
M	M02		B
M	D02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
L	G01		I
M	A02		B
H	A04		B

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions i = inside, o = outside, b = both

4.5 Documentation

See the UK Approach document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

Back to top

5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	1.1	UK04	100.0		

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Northern Ireland Environment Agency
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- ☐ Yes
- ☐ No, but in preparation
- ☒ No

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

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CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65

D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

Annex 3: Conservation Objectives for the Upper Lough Erne SAC UK0016614

UPPER LOUGH ERNE SAC
UK0016614

CONSERVATION OBJECTIVES

Document Details

Title	*Upper Lough Erne SAC Conservation Objectives*
Prepared By	*R. McKeown*
Approved By	*P. Corbett*
Date Effective From	*01/04/2015*
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Contact	cdp@doeni.gov.uk

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Version	Date	Summary of Changes	Initials
V1	June 2013	Internal working document	PC
V2	January 2015	Complete review	RMK

Site relationships

To fully understand the conservation requirements of this site, it is necessary to also refer to the Conservation Objectives for Upper Lough Erne SPA and Cladagh (Swanlinbar) River SAC.

Upper Lough Erne SAC boundary overlaps with the boundary for Upper Lough Erne SPA and adjoins Cladagh (Swanlinbar) River SAC.

1. INTRODUCTION

EU Member States have a clear responsibility under the Habitats and Birds Directives[1] to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

[1] 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

2. ROLE OF CONSERVATION OBJECTIVES

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition

- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.

- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long term basis.

3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as "**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**".

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

4. SITE INFORMATION

COUNTY: FERMANAGH

GRID REFERENCE: IH 330280

AREA: 5787ha

5. SUMMARY SITE DESCRIPTION

The open waters of the main lough and smaller satellite loughs contain a variety of aquatic communities typical of natural eutrophic lakes. In addition, the shallow sheltered shores support extensive swamp, fen and marsh communities. Behind the open grazed foreshore is species-rich grassland, which occasionally extends back into the old adjacent field systems. Alluvial woodland is found where the shoreline is ungrazed or only very lightly grazed, while occasionally the dryer soils of the drumlins behind support a natural Oak woodland; this is particularly well developed within the Crom Estate to the south and the small island to the north of the Lough. Such diversity of good habitats and communities is reflected in the very large number of rare and notable plants and insects flourishing here: the woods being particularly important for breeding passerines and home for some notable mammals.

The site regularly supports large numbers of over-wintering and breeding birds important in an all-Ireland context in addition to internationally important numbers of wintering Whooper Swan *Cygnus cygnus*, which has been recognised by its SPA designation.

Further details of the site are contained in the ASSI Citation and Views About Management statement, which are available on the NIEA website (www.doeni.gov.uk/niea).

5.1 BOUNDARY RATIONALE

The boundary has been drawn to include the open water of the lough, its islands and adjacent semi-natural habitats such as woodland, species-rich grassland and natural transition vegetation such as scrub or heath. The SAC boundary includes the composite boundaries of 9 ASSIs; Mill Lough, Corraslough Point, Belleisle, Inishroosk, Trannish, Dernish Island, Crom, Killymackan Lough and Galloon. The site boundary utilised permanent man-made boundary features when ever possible, however along some stretches of the foreshore such boundaries were absent and recognisable topographical or physical features such as break in slopes, scrub line, etc were used. In exceptional cases when there was no recognisable feature on the ground, the Rivers Agency's ownership folio line was used.

6. SAC SELECTION FEATURES

Feature type	Feature	Global Status	Size/ extent/ pop~
Habitat	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation	A	3844.9ha*
Habitat	Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	B	275ha
Habitat	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion alvae*)	B	130ha
Species	Otter *Lutra lutra*	B	
Habitat	Bog woodland	D	
Habitat	Alkaline fen	D	
Habitat	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caerulea*)	D	
Species	Atlantic salmon *Salmo salar*	D	

Table 1. List of SAC selection features. Those with global status A-C will be referred to in ANNEX I.

The global status is an expert judgement of the overall value of the site for the conservation of the relevant Annex I habitat. Sites have been graded A, B or C - in the UK these gradings have been interpreted as follows:

A - Sites holding outstanding examples of the habitat in a European context.

B - Sites holding excellent stands of the habitat, significantly above the threshold for SSSI/ASSI notification but of somewhat lower value than grade A sites.

C - Examples of the habitat which are of at least national interest (i.e. usually above the thresholdfor SSSI/ASSI notification on terrestrial sites) but not significantly above this. These habitats are not the primary reason for SACs being selected.

D - Habitat present but not of sufficient extent or quality to merit listing as SAC feature.

There is therefore a distinction between the principal features for which sites have been selected (those graded A or B) and those which are only of secondary interest (those graded C). This is a useful distinction but it is important to note that all three grades are qualifying SAC interest features.

Click here to go to the Natura 2000 Standard Data Form for Upper Lough Erne SAC.

6.1 ASSI SELECTION FEATURES

Upper Lough Erne ASSI

Feature Type	Feature	Size/ extent/ pop~
Habitat	Eutrophic Standing Waters	3844.9 ha
Habitat	Oakwood	275 ha
Habitat	Wet Woodland	130 ha
Habitat	Fens	
Habitat	Purple Moor-grass & Rush Pasture	
Habitat	Reedbeds & Swamps	
Habitat	Wood Pasture & Parkland	
Habitat	Lowland Meadow	
Species	Otter *Lutra lutra*	
Species	Higher Plant Assemblage *Myriophyllum verticillatum* (1), *Potamogeton filiformis* (2), *P. pusillus* (2), *Zannichellia palustris* (1), *Ranunculus circinatus* (2), *Lemna polyrhiza* (2), *Lemna gibba* (2), *Hydrocharis morsus – ranae* (2), *Cicuta virosa* (2), *Sium latifolium* (2), *Butomus umbellatus* (1), *Lathyrus palustris* (5), *Stellaria palustris* (2), *Viola persicifolia* (5), *Eleocharis acicularis* (2), *Alisma Lanceolatum* (3), *Thelypteris palustris* (2), *Carex pseudocyperus* (3), *C. elongata* (5), *C. strigosa* (2), *Rhamnus cathartica* (1), *Scirpus sylvaticus* (2), *Neottia nudus – avis* (1), *Lathraea squamaria* (2), *Prunus padus* (2), *Equisetum hyemale* (2), *Sisyrinchium bermudiana* (3) and *Spiranthes romanzoffiana* (5)	ABCD score 66
Species	Internationally important over wintering waterfowl assemblage	
Species	Nationally important breeding wader assemblage	
Species	Invertebrate Asemblage - Notable water beetle, aquatic bug and dragonfly assemblages and 20 individual notable species: *Limnoporus rufoscutellatus, Micronecta powers, Saldula opacula, Xanthandrus comtus, Xylota abiens, Carabus clatratus, Pelophila borealis, Coelambus impressopunctatus, Noterus crassicornis, Hygrotus quinquelineatus, Dytiscus circumcinctus, Gyrinus natator G. distinctus, G. paykulli, Brachytron pratense, Drymonia ruficornis, Odontosia carmelita, Sesia bembeciformis, Quercusia quercus and*	

	Gonepteryx rhamni	
Species	Notable mammal assemblages including colonies of three bat species Daubenton's, Leisler's and Brown Long – eared Bat, and healthy populations of Pine Martin and Red Squirrel.	
Species	Fungi Assemblage	

Table 2. List of ASSI features.

7. CONSERVATION OBJECTIVES

The ***Conservation Objective*** for this site is:

To maintain (or restore where appropriate) the

- ***Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation***
- ***Old sessile oak woods with Ilex and Blechnum in the British Isles***
- ***Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion alvae)***
- ***Otter Lutra lutra***

to favourable condition.

For each SAC feature, there are a number of component objectives which are outlined in the table below. These include a series of attributes, measures and targets which form the basis of *Condition Assessment*. The results of this will determine whether the feature is in favourable condition or not. The feature attributes and measures are found in the attached annex.

8. SAC SELECTION FEATURE OBJECTIVE REQUIREMENTS

Feature	Global Status	Objective
Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation	A	Maintain and enhance water quality.
		Maintain a natural hydrological regime
		Maintain the extent of existing characteristic aquatic and emergent community types.
		Maintain and enhance species diversity within each community including populations of rare and endangered species.

		Maintain purity of the natural and characteristic species composition.
		Minimal sediment load
		Substrate should be natural & characteristic of lake type.
		Minimal environmental disturbance i.e. minimal negative impact from recreation and artificial structures and no fish farming
		Instigate cross border monitoring mechanism between the relevant authorities to monitor water quality.
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles.	B	Maintain and expand the extent of existing oak woodland but not at the expense of other SAC (ABC) features. (There are areas of degraded heath, wetland and damp grassland which have the potential to develop into oak woodland)
		Maintain and enhance Oak woodland species diversity including the presence of notable or rare species.
		Maintain and enhance Oak woodland structure
		Maintain the diversity and quality of habitats associated with the Oak woodland, e.g. fen meadow, grasslands, wet heath, wet woodland and scrub, especially where these exhibit natural transition to Oak woodland
		Seek nature conservation management over adjacent forested areas outside the SAC where there may be potential for woodland rehabilitation.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for woodland expansion.
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion alvae*)	B	Maintain and expand the extent of existing Alluvial forests but not at the expense of other SAC (ABC) features. (There are areas of wetland and damp grassland which have the potential to develop into Alluvial woodland)
		Maintain and enhance Alluvial forests species diversity including the presence of notable or rare species.

		Maintain and enhance Alluvial forests structure
		Maintain the diversity and quality of habitats associated with the Alluvial forests, e.g. fen meadow, grasslands, wet heath, wet woodland and scrub, especially where these exhibit natural transition to Alluvial forests
		Seek nature conservation management over adjacent forested areas outside the SAC where there may be potential for woodland rehabilitation.
		Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for woodland expansion.
Otter *Lutra lutra*	B	Population numbers and distribution to be maintained and if possible, expanded.
		Maintain the extent and quality of suitable Otter habitat, in particular the chemical and biological quality of the water, and all associated wetland habitats

9. ASSI FEATURE OBJECTIVE REQUIREMENTS

Feature	Component Objective
Eutrophic Standing Waters	See SAC Selection Feature Objective Requirements table.
Oakwood	See SAC Selection Feature Objective Requirements table.
Wet Woodland	See SAC Selection Feature Objective Requirements table.
Inundation and wet grassland, species-rich grassland and fen meadow	Maintain and expand the extent of these existing semi-natural grassland but not at the expense of other SAC (ABC) features.
	Maintain and enhance species diversity.
	Maintain and enhance grassland structure
	Maintain the diversity and quality of habitats associated with these semi-natural grassland, e.g. fen, marsh, swamp, especially where these exhibit natural transition.

	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for restoring these semi-natural grassland types.
Swamp, fen and marsh vegetation (*Alkaline fens are a component)*	Maintain and expand the extent of these existing vegetation types but not at the expense of other SAC (ABC) features.
	Maintain and enhance species diversity.
	Maintain and enhance structure
	Maintain the diversity and quality of habitats associated with these vegetation types, e.g. wet grassland, alluvial woodland, especially where these exhibit natural transition
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for restoring.
Parkland Woodland	Maintain the extent of the existing tree cover.
	Maintain and enhance lichen diversity.
Otter *Lutra lutra*	See SAC Selection Feature Objective Requirements table.
Higher Plant Assemblage	Map location of rare species scoring 3 or more
	Maintain abundance and distribution and if feasible enhance population.
	Establish the status of these species and if appropriate draw up further conservation priorities for this species.
Internationally important over wintering waterfowl	See SPA conservation objectives for this site
Nationally important breeding waders	Breeding numbers stable or increasing
	Chick mortality due to trampling by livestock to be minimised
	Disturbance of nesting pairs minimised
	A suitable nest site available for each summer resident pair of adult or sub-adult plovers.
Invertebrate Assemblage	To be finalised.
Mammal Assemblage	To be finalised.
Fungi Assemblage	To be finalised.

10. MANAGEMENT CONSIDERATIONS

Ownership

All the open water body and a narrow slice of the fringing foreshore of the lough is owned by DARD Rivers Agency. In total, there are 415 individuals or organisations with ownership or other rights associated with the site.

The greatest proportion of the semi-natural woodland is included within the Crom ASSI and is either managed by National Trust or NIEA, while the numerous smaller woodland units are privately owned. Significant proportions of the smaller woodland units are fenced under ESA agreement, but a large number are not.

Adjoining Land Use

Main adjoining landuse is one of semi-intensive farming including crop and silage production as well as stock grazing. Past management of the woods through planting and selective felling has partially altered the woodland's composition from their natural state, particularly in relation to tree composition. Due to the present policy of minimum interference the woodlands will revert to their natural state, which may be most evident by the replacement of Oak by Ash as the dominant tree component.

11. MAIN THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Both on-site and off-site activities can potentially affect SAC/ASSI features. The list below is not exhaustive, but deals with the most likely factors that are either affecting Upper Lough Erne, or could affect it in the future.

Although ***Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Old sessile oak woods with Ilex and Blechnum in the British Isles, Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion alvae) and Otter Lutra lutra*** are the qualifying SAC features, factors affecting ASSI features are also considered.

NOTE - Carrying out any of the Notifiable Operations listed in the ASSI schedule could affect the site.

Lake Impacts

Siltation

There is a tendency for naturally eutrophic lakes to silt up, both from sediment input through streams and rivers and from organic production. There may therefore be some loss of open water with time, though the rate should be relatively slow.

ACTION: Reduce the rate of catchment sedimentation by encouraging landowners to leave adequate vegetation buffer strips between ploughed fields and adjacent drains and streams that may drain into the lough.

Nutrient enrichment

The natural eutrophic status of the loughs is threatened by further eutrophication, as a result of increased nutrient loading from agricultural run-off (slurry, silage effluent and artificial fertilisers), discharge of effluent from pleasure boats, and general domestic sewage from shoreline housing and other developments, leading to deterioration of water quality. If the water becomes too nutrient-rich there may be a total loss of macrophytes and only blooms of algae present.

ACTION: Continued monitoring of water quality should identify increases in the eutrophic status of the lough. Current recommendations to reduce further eutrophication of the lough include the reduction of slurry spreading in high -risk areas; the provision of grants to farmers for improved storage of slurry, controls on agricultural pollution events, restrictions on the use of fertilisers and stricter controls on effluent disposal.

Changes in water level

The Electricity Supply Board in the Republic of Ireland controls the water level in Upper Lough Erne, as a requirement of the hydroelectric power station at Ballyshannon. High levels of discharge at Ballyshannon can significantly lower the level of the Lough. A set of sluices at Portora near Enniskillen can be lowered during times of low flow to maintain the water level in Upper Lough Erne. However, controls ensure the levels remain above the statutory minimum.

Both surface and groundwater's are abstracted for potable and non-potable use throughout Upper and Lower Lough Erne. Over-abstraction of water could have significant effects on both habitats and species alike.

ACTION: Through monitoring assess the possible impacts of water extraction, if any, on the conservation interest features.

Recreational Pressure

Although disturbance is minimal in most areas of Upper Lough Erne and the satellite loughs, it is possible that the popularity of this area for angling, camping and boating holidays will increase considerably.

ACTION: Monitor for any adverse impacts from increasing recreational pressure.

Alien Species

Only a few exotic plant species have been recorded for Upper Lough Erne, the most common being the Canadian Pondweed *Elodea canadensis*. This species although having a very high frequency of occurrence is not having a notable ecological impact.

Recent monitoring has indicated that Zebra Mussel (*Dressiness polymorpha*) is widespread and increasing in densities within Upper Lough Erne. Impacts on the ecology of Upper Lough Erne are difficult to predict. Zebra Mussels are able to attach to and form large colonies on any submerged hard surface. Fouling growths can swamp the spawning grounds of lake spawning salmonids and smother the shell of Swam Mussels. They are very effective filter feeders and can virtually strip the water column of zooplankton and phytoplankton leading to improved water clarity, although this does not result in a net loss of nutrients from the system. While water clarification may appear to be a benefit this may not always be the case. Mussel plankton grazing may (1) remove food from larval fish,
(2) give sight feeding predatory fish an increased competitive edge over their prey, (3) shift the bulk of biological systems from pelagic to benthic systems associated with mussel beds, (4) clarify water to the point where algal populations change and where species formerly at a disadvantage are favoured and (5) increase macrophyte growth around lake margins (including nuisance carpeting growths of attached algae such as *Cladophora spp*.)

ACTION: Continue monitoring for any adverse impacts from alien species such as Zebra Mussels.

Woodland Impacts

Grazing/Poaching/Tree barking and Browsing

Free access to woodland by domestic stock, feral goats and deer is causing direct damage to the ground flora community by poaching and trampling, grazing, barking and browsing, so preventing natural regeneration. This suppression of regeneration will increasingly cause a detrimental change in the woodland structure and composition, with time.

Information on current grazing levels of domestic stock within privately owned woodland is not readily available. No information of the current population of goats or deer is available.

ACTION: Investigate the current activity relating to the practice of grazing woods by domestic stock. Reduce stocking pressure in woods to sustainable level or exclude stock by fencing off woodland under management agreement. Undertake census on the current population levels of feral goats and deer and if necessary, initiate control measures to reduce numbers to acceptable levels.

Woodland Clearance

There is some *ad hoc* removal of wood. Removal of woodland would lead to a reduction in diversity.

ACTION: Ensure there is no removal of woodland from the site.

Dead Wood Removal

Dead wood should be left *in situ* if safe or practical to do so. This provides valuable habitat for fungi, invertebrates etc. Removal of wood or fire-wood should be discouraged.

ACTION: Ensure there is no removal of dead wood from the site.

Invasion by exotics

Exotic species recorded for the wood include Sycamore *Acer pseudoplatanus* and occasional small areas of Indian Balsam *Impatiens glandulifera*, Rhododendron *Rhododendron ponticum*, Red Currant *Ribes rubrum*, Gooseberry *Ribes uva-crispa* and Snowberry *Symphoricarpos albus*. These are not posing a threat at present but they should be monitored and in the long-term removed.

ACTION: Monitor invasive /exotic species and control when necessary.

Dumping

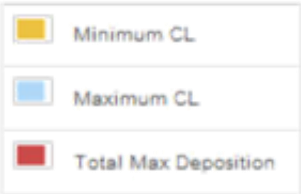
Fly tipping is not a major problem but does occur sporadically.

ACTION: Removal of dumped material from the woods when practical, to prevent the build-up of debris and to discourage further tipping. Fence off woodland adjacent to roads to discourage further tipping.

Nitrogen Deposition

Excess nitrogen deposition can favour the growth of competitive plants and lead to changes in ecosystem structure or function and to a reduction in biodiversity. National scale studies show the potential adverse effects of excess nitrogen on natural and semi-natural habitats to be widespread across the UK. Lower and upper critical loads have been calculated for Upper Lough Erne SAC.

Feature: Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
Critical Load Class: No comparable habitat with established critical load estimate available
Critical Loads (kg N/ha/yr): no critical loads available for this feature
Nitrogen Deposition (kg N/ha/yr):
Maximum: 12 Minimum: 4.5 Average: 9.4



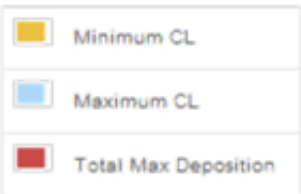
Feature: Old sessile oak woods with Ilex and Blechnum in the British Isles

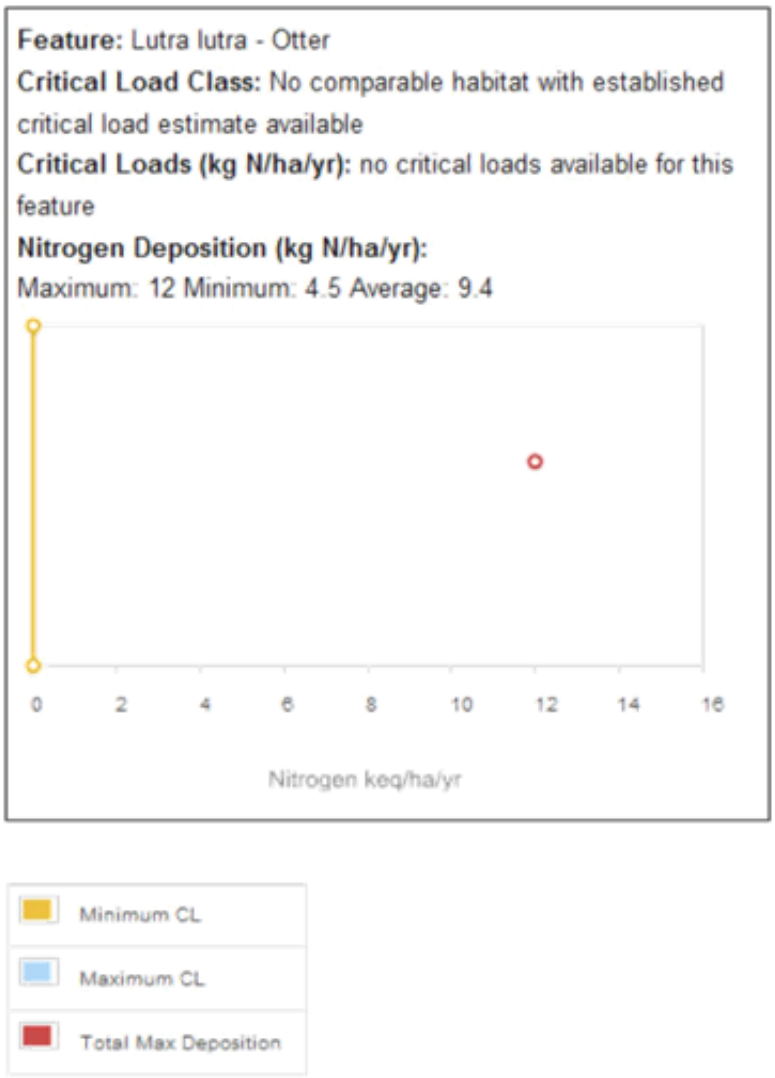
Critical Load Class: Acidophilous Quercus-dominated woodland

Critical Loads (kg N/ha/yr): 10-15

Nitrogen Deposition (kg N/ha/yr):

Maximum: 39.6 Minimum: 19.6 Average: 24.3





N.B. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion alvae*) – Designated feature/feature habitat not sensitive to eutrophication.

(Source: Air Pollution Information System (APIS) website- www.apis.ac.uk)

ACTION: Seek to maintain or where necessary, restore concentrations and deposition of air pollutants to at or below the site-relevant critical load.

Changes to surrounding land use

Any changes in local land-use e.g. agricultural intensification, drainage works and development) may be detrimental to the SAC.

ACTION: Reduce the risk of surrounding agricultural intensification by encouraging the adjacent owner/occupiers to enter into agri-environment schemes. Use Habitats Regulations Assessments (HRAs), through the planning process, to minimise any development risks adjacent to the SAC.

Climate Change
Northern Ireland faces changes to its climate over the next century. Indications are that we will face hotter, drier summers, warmer winters and more frequent extreme weather events.
ACTION: When developing SAC management plans, the likely future impacts of climate change should be considered and appropriate changes made.

12. MONITORING

Monitoring of SACs takes place using two monitoring techniques.

Site Integrity Monitoring (SIM) is carried out to ensure compliance with the ASSI/ SAC Schedule. The most likely processes of change will either be picked up by SIM (e.g. dumping, burning, turf cutting, grazing etc.) or will be comparatively slow (e.g. gradual degradation of the habitat).

These longer-term changes will be picked up by monitoring of the feature via **Site Condition Assessment** - this is carried out on a rolling basis to pick up subtle changes in the condition of the feature.

The method for Site Condition Assessment was agreed by the relevant JNCC-led Lead Co-ordination Network although the methodology has been modified to reflect individual site attributes in Northern Ireland.

12.1 MONITORING SUMMARY

1. *Monitor the integrity of the site (SIM or Compliance Monitoring)*
Check on maintenance of fences, disturbance to habitats, winter grazing, etc. This SIM should be carried out once a year.

2. Monitor the condition of the site (Condition Assessment)
Monitor the key attributes for each of the SAC selection features. This will detect if the features are in favourable condition or not. See Annex I.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does <u>not by itself</u> provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any Habitats Regulations Assessment (HRA) that may be needed. It should be noted that completion of a HRA is a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

13. REFERENCES

Cooper, A., McCann, T. and Rogers, D. (2009). Northern Ireland Countryside Survey 2007: Broad Habitat Change 1998-2007. Northern Ireland Environment Agency Research and Development Series No.09/06

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Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Oakwood.

Department of the Environment for Northern Ireland (2005). Northern Ireland Habitat Action Plan – Wet Woodland.

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

European Commission (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

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ANNEX I

Feature 1 (SAC) – Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation (Status A)

(* = primary attribute. One failure among primary attribute = unfavourable condition)

Attribute	Measure	Targets	Comments
Water quality	TP load of the significant inflowing rivers in Northern Ireland.	No increasing trend in TP concentration	ASRD already conduct fortnightly samples at all NI river mouths A Water Quality Management strategy for the Erne Catchment was produced in 1998
	TP as measured in the lake outflow	<65µgl	May need to arrange for ASRD to sample at e.g. Killyhevlin
	TP load of water inflowing from the Republic of Ireland	No increasing trend in TP concentration	ASRD include analyses of the mixed input from the Republic of Ireland at Derryvore. There should be no need to examine the Republic's data on individual rivers unless the target is not met
	Abundance weighted Trophic Ranking Score in any of the sample areas	No increase in the mean of all sample areas of > 5%, and no increase in any individual sample area of > 10%	

	Pollutant levels: Heavy metals, pesticides, hydrocarbons, phenols, detergents	No increasing trend in pollutant levels	Measured annually at Kilyhevlin by Water Service
*Hydrology	Cm (staff gauge) Belleisle, Portora and Rosscor viaduct (Belleek) are measured daily (Rivers Agency)	A stable regime to include high winter water levels	Lake water level is controlled by the Portora sluices and by The Turbines at Catherines Falls on Assaroe lake.
Siltation	Depth measurements in selected bays	Stable or natural accretion rates	Rivers Agency have data for the last 30 years
*Aquatic flora	Blanketweed abundance in any of the sample areas (PIV value)	No more than 3 (frequent)	
	Broad-leaved *Potamogeton* (Section Potamogeton, plus *P. obtusifolius*) presence and abundance	No decline in species presence, or overall decrease in the abundance ratio between broad and fine-leaved species	
	Depth penetration of broad-leaved *Potamogeton* species (cm)	No decrease	Must be compared to water level at time of survey.

Swamp extent	Distance from a fixed point to a) the edge of the dominant emergent zone and b) to the furthest pioneer emergent (m) at least one point on each sub-sample	Mean increase over the reporting cycle of < 5cm per year	Note that Alkaline fens are also a D status SAC feature habitat and swamps and fens generally an ASSI feature
Environmental disturbance	Number of pleasure cruiser trips. The number of boat movements through the Shannon Erne water way and the numbers of boat licences on the Erne are recorded by Rivers Agency (Jeffrey Irwin)	Acceptable levels of usage / acceptable distribution of intensive boat movements i.e. leaving some parts relatively undisturbed (to be determined)	Ideally need to monitor boat movements in different parts of the lake
Invasive alien species	Status of Zebra mussel *Dreissena polymorpha*	Continued monitoring and evaluation of effects.	There is as yet no basis upon which to define condition criteria

Feature 2 (SAC) - Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (Status B)

* = primary attribute. One failure among primary attribute = unfavourable condition

Attribute	Targets	Method of Assessment	Comments
* Area of Oakwood	Maintain the extent of Oakwood.	Visual estimate in 10x10m plots and across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable.
Oakwood community diversity	Maintain presence of woodland communities, W11, W17, W9 & W7 as established at base line survey.	Visual estimate in 10x10m plots	
Presence of associated features and semi-natural habitats	Maintain existing associated features and semi-natural habitats (wet/bog woodland, wet heath, semi-natural grasslands etc.)	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost. Note: Loss of associated habitats to Oakwood may be desirable in some instances.

		Assessment structured walk.	
* Structural variation (% cover)	Mean canopy cover greater than 70%	Estimate within the visual vicinity of the monitoring plots.	A well structured wood should have a well developed canopy and shrub layer.
	Mean shrub cover should be maintained between 20 - 50%	Estimate within the visual vicinity of the monitoring plots.	
	Maintain current levels of standard variation within reasonable limits for field, herb and moss cover. Where present assess cover of *Luzula sylvatica*.	Visual estimate in 10x10m plots.	At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey. Note: *L. sylvatica* may be dominant in many W11 oakwood communities. The percentage cover of this species may affect Oak regeneration, but more information is required before that assumption can be made.
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
	Mean cover of bare ground should be less than 5%. Bare ground does not include boulders or rocks.	Visual estimate in 10x10m plots.	
* Age-class variation (DAFOR)	Young trees (5- 20cm diameter) at least occasional in 25% of plots	Estimate within the visual vicinity of the monitoring plots.	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and over-mature trees. However, on very steep sided
	Mature trees (20 - 75cm	Estimate within the	

	diameter) at least frequent in 75% of plots	visual vicinity of the monitoring plots.	slopes with shallow soils, over-mature trees are unlikely to occur as larger trees are likely to fall over before becoming over –mature. Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may be recorded as Unfavourable - recovering.
	Over-mature trees (>75cm diameter) at least present in 10% of plots	Estimate within the visual vicinity of the monitoring plots.	
* Presence of standing and fallen dead wood (DAFOR)	Standing dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
	Fallen dead wood at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	
* Presence of epiphytes and climbers (DAFOR)	Epiphytes and climbers at least occasional in 70% of plots and at least frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytes and climbers are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Presence of epiphytic bryophytes and lichens (DAFOR)	Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in	Visual estimate in 10x10m plots.	Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern

	30% of plots.		Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Regeneration potential (DAFOR) Maintain current levels of native tree regeneration within reasonable limits for the current structure of the Oak woodland.	Regeneration of Oak seedlings.	Visual estimate in 10x10m plots.	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration of Oak in particular is likely to be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps in the canopy for oak to regenerate. This does not necessarily indicate unfavourable condition.
	Regeneration of Oak saplings	Visual estimate in 10x10m plots.	
	Regeneration of other native seedlings.	Visual estimate in 10x10m plots.	
	Regeneration of other native saplings.	Visual estimate in 10x10m plots.	
* Cover of non-native species (all layers) (presence/absence)	Non–native invasive canopy species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	The canopy of the Oak woodland should be largely comprised of Oak trees. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore. In addition, non-native invasive species in any one layer is un-desirable. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
	Non–native invasive shrub species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non-native invasive canopy species seedlings/saplings should be present in less than	Visual estimate in 10x10m plots.	

	20% of plots, but never frequent.		
	Non–native invasive ground flora species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
*Frequency and cover of eutrophication indicators: (DAFOR)	No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover. *Galium aparine, Urtica dioica, Heracleum spp, Epilobium spp. Rumex obtusifolius.* No more than occasional is equivalent to less than 40% occurrence in recorded plots.	Visual estimate in 10x10m plots.	
* Cover of *Pteridium* (% cover)	The mean cover of *Pteridium* for the wood should be less than 10%.	Visual estimate in 10x10m plots.	
* Cover of grasses (non-woodland species) (% cover)	The mean cover of grass for the wood should be less than 10%.	Visual estimate in 10x10m plots.	A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However,

			providing the grazing pressure has been addressed, and there is evidence that woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.
Management /Disturbance			
* Grazing (DAFOR)	Grazing should be recorded as no more than occasional over 80% of plots.	Estimate within the visual vicinity of the monitoring plots.	Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings.
* Poaching by cattle (DAFOR)	Poaching should be absent, or recorded in less than 20% of plots and frequent in less than 10% of plots.	Visual estimate in 10x10m plots.	
*Frequency of recent goat damage (1-2 years) (DAFOR)	Recent goat damage should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
*Frequency of damage to seedlings/saplings (DAFOR)	Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR)	There should be no felling or coppicing of native trees or shrubs.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM	Felling non-native species as part of management for conservation is acceptable.

		and Condition Assessment structured walk.	
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the acid woodland indicators (W11 & W17 communities) listed below:- *Vaccinium myrtillus,* *Blechnum spicant,* *Dicranum spp.,* *Luzula pilosa,* *Rhytidiadelphus loreus*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained. However, the W11 & W17 communities should dominate the woodland.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the base-rich woodland indicators (W9 community) listed below:- *Sanicla europea,* *Geum urbanum,* *Polystichum setiferum,* *Aneomne nemorosa,* *Primula vulgaris.*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the flushed woodland indicators (W7 community) listed below:- *Carex remota,* *Ranunculus repens,*	Visual estimate in 10x10m plots.	Within any Oak woodland, there may be pockets of base-rich woodland and or flushed woodland within the boundaries of the SAC. The diversity of these woodland communities should be maintained.

	Chrysosplenium oppositifolium, Filipendula ulmaria, Lysimachia nemorum.		
Presence of rare or scarce species specific to the site.	Maintain current levels of standard variation within reasonable limits for rare and notable species. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 3 (SAC) – Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion Alnion incanae, Salicion alvae*) (Status B)

* = primary attribute. One failure among primary attribute = unfavourable condition

Attribute	Targets	Method of Assessment	Comments
* Area of Wet woodland	Maintain the extent Wet woodland at 130ha.	Visual estimate in 10x10m plots and across the extent of the woodland using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Loss due to natural processes (e.g. wind-throw during extreme storm) is acceptable
Alder woodland community diversity	Maintain presence of the woodland community, W5 as established at base line survey.	Visual estimate in 10x10m plots	
Presence of associated features and semi-natural habitats	Maintain existing associated features and semi-natural habitats.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment	Repeat monitoring of plots using GPS should indicate whether mosaics and associated habitats have changed or been lost. Note: Loss of associated habitats to Wet woodland may be desirable in some instances.

		structured walk.	
* Structural variation (% cover)	Mean canopy cover greater than 50%	Estimate within the visual vicinity of the monitoring plots.	A well structured wood should have a well developed canopy and shrub layer. However, many Wet woodlands do not support a tall canopy or very mature trees.
	Mean shrub cover should be maintained between 15-50%	Estimate within the visual vicinity of the monitoring plots.	
	Maintain current levels of standard variation within reasonable limits for field, herb and moss cover.	Visual estimate in 10x10m plots.	At least the current level of structural diversity should be maintained for field cover, herb cover and moss cover. Limits to be set for each site after the baseline survey. The ground flora may appear sparse, particularly where periodic flooding leaves areas of bare mud etc. Its composition may be variable. Hydrology is difficult to assess given vagaries of climate. The regime should be allowed to revert to a natural one. Negative changes will be picked up in vegetation changes over time but more detailed recording may be necessary
		Visual estimate in 10x10m plots.	
		Visual estimate in 10x10m plots.	
	Water-filled pools and ditches (or mud) should be at least present in 50% of plots.	Visual estimate in 10x10m plots.	
* Age-class variation (DAFOR)	Young trees (5- 20cm diameter) at least occasional in 25% of plots.	Visual estimate in 10x10m plots.	Age-class structure should be appropriate to the site, its history and management; however, in general, there should be a spread of different age-classes present, including young and over-mature trees. Note, that in many cases achieving the set targets is a long term aim. However, providing the correct management practices are in place, this attribute may
	Mature trees (20 - 75cm diameter) at least frequent in 75% of plots.	Visual estimate in 10x10m plots.	

	Over-mature trees (>75cm diameter) at least present in 10% of plots.	Visual estimate in 10x10m plots.	be recorded as Unfavourable -recovering.
* Presence of standing and fallen dead wood (DAFOR)	Standing dead wood at least occasional in 50% of plots.	Visual estimate in 10x10m plots.	Dead wood is often abundant but because there tend to be fewer big trees in wet woodland the size of the fallen wood is often small. Flooding may lead to local accumulations with other areas totally lacking fallen wood.
	Fallen dead wood at least occasional in 50% of plots.	Visual estimate in 10x10m plots.	
* Presence of epiphytes and climbers (DAFOR)	Epiphytes and climbers at least occasional in 50% of plots and at least frequent in 10% of plots.	Visual estimate in 10x10m plots.	Epiphytes and climbers are an important component in all woodlands. However, in Wet woodlands, their occurrence is much more sporadic than in other woodland types.
* Presence of Epiphytic bryophytes and lichens (DAFOR)	Epiphytic bryophytes and lichens at least occasional in 70% of plots and frequent in 30% of plots.	Visual estimate in 10x10m plots.	Epiphytic bryophytes and lichens are an important component in all woodlands. However, in the extreme south east of Northern Ireland, where the climate is much warmer and drier, the generic limits may be set too high and may need amended for individual sites.
* Regeneration potential (DAFOR) Maintain current levels of native tree regeneration within reasonable limits for	Regeneration of native seedlings.	Visual estimate in 10x10m plots.	The general aim is for the successful establishment of young stems (i.e. seedlings growing through to saplings to young trees) in gaps or on the edge of a stand at sufficient density to maintain canopy density over a 10 year period. Regeneration of some native species is likely to be slow and sporadic; in some stands, there may currently not be sufficient and/or extensive enough gaps for young
	Regeneration of native saplings.	Visual estimate in 10x10m plots.	

the current structure of the Wet Woodland.			trees to regenerate. This does not necessarily indicate unfavourable condition.
* Cover of non-native species (all layers) (presence/absence)	Non–native invasive canopy species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	The canopy of the Wet Woodland should be largely comprised of Alder and Willow trees with associated native species. Non-native species are undesirable in the canopy, particularly invasive species such as Sycamore. In addition, non-native invasive species in any one layer is un-desirable. Note that non-invasive species are not viewed as a significant threat, and a low level of occurrence may be acceptable.
	Non–native invasive shrub species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non-native invasive canopy species seedlings/saplings should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
	Non–native invasive ground flora species should be present in less than 20% of plots, but never frequent.	Visual estimate in 10x10m plots.	
* Frequency and cover of eutrophication indicators: (DAFOR)	No one negative species no more than occasional throughout the wood and/or singly or together comprising more than 5% cover. *Galium aparine, Urtica dioica, Heracleum spp, Epilobium spp. Rumex obtusifolius*	Visual estimate in 10x10m plots.	

	No more than occasional is equivalent to less than 40% occurrence in recorded plots.		
* Cover of grasses (non-woodland species) (% cover)	The mean cover of grass for the wood should be less than 10%.	Visual estimate in 10x10m plots.	A high cover of grasses indicates past and/or present grazing. Where heavy grazing has been a past management practice, the natural woodland ground flora will take a considerable time to re-establish (time limits for restoration currently unknown). However, providing the grazing pressure has been addressed, and there is evidence that woodland flora is beginning to re-appear, this attribute may be recorded as unfavourable, recovering.
* Grazing (DAFOR)	Grazing should be recorded as no more than occasional over 80% of plots.	Estimate within the visual vicinity of the monitoring plots.	Grazing by domestic stock, where it occurs should be light resulting in minimal damage to the ground flora through poaching and damage to seedlings and saplings.
* Poaching by cattle (DAFOR)	Poaching should be absent, or recorded in less than 20% of plots and frequent or more in less than 10 % of plots.	Visual estimate in 10x10m plots.	
* Frequency of recent goat damage (1-2 years) (DAFOR)	Recent goat damage should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	
* Frequency of damage to seedlings/saplings	Damage to seedling/saplings should be absent, or recorded in less than 20% of plots.	Visual estimate in 10x10m plots.	

(DAFOR)			
Frequency of felling/coppicing (within 6 year monitoring cycle) (DAFOR)	There should be no felling or coppicing of native trees or shrubs.	Visual estimate in 10x10m plots and across the extent of the ASSI using a combination of aerial photographs, SIM and Condition Assessment structured walk.	Felling non-native species as part of management for conservation is acceptable.
Maintain the diversity of woodland species throughout the wood.	Record the % of plots with each of the wet woodland indicators (W5 community) listed below:- *Filipendula ulmaria, Galium palustris, Caltha palustris, Cardamine pratensis, Lysimachia. nummularia, Ranunculus repens, Mentha aquatica, Angelica sylvestris, Potentilla palustris, Lythrum salicaria, Myosotis scorpioides, Oenanthe crocata, Lycopus europaeus, Angelica sylvestris,*	Visual estimate in 10x10m plots.	

	Scutellata, *Solanum dulcamara,* *Valeriana officinalis* *Iris pseudacorus,* *Equisetum fluviatile,* *Phragmites australis,* *Carex rostrata,* *C. paniculata,* *C. remota,* *C. vesicaria*.		
Indicators of Local Distinctiveness			
Presence of rare or scarce species specific to the site.	Maintain current levels of standard variation within reasonable limits for rare and notable species. If these species are not recorded on any one visit, it does not automatically make the site unfavourable.	Name the species at least present along the length of the Condition Assessment structured walk.	

Frequency -
1-20% = Rare
21-40% = Occasional
41- 60% = Frequent
> 60% = Constant

Feature 4 (SAC) – Otter *Lutra lutra* (Status B)

Attribute	Measure	Target	Notes
Presence of otters	Presence of one or more of the following signs within the site: Positive identification of otter spraint, footprints, tracks, paths, lying-up sites or feeding signs.	Signs of otters found at least once per year	Use data from other surveys or Ulster Museum, if available
	Sightings of otters.		
	Positive identification of holt(s).		
Bankside/Waterside cover	Presence of cover: Mature trees, woodland, scrub, other tall bankside vegetation, reed and sedge beds.	No overall permanent decrease	Some change acceptable as long as it is appropriately mitigated
Water quality	EP water quality scale	Water quality should be at least category A or B, according to EP guidelines, with no pollution incidents	Refer to Environment Protection for data
Food Sources	Assessment of fish stocks and other food sources (e.g. amphibians)	Fish stocks appropriate to the nutrient status of the river, with no significant decline in fish biomass or species diversity	Refer to appropriate Agency for sample data if available (This information may need to be inferred from the water quality category).

Attribute	Measure	Target	Notes
Disturbance	Extent of public access to river	No significant change to river or bankside usage; no significant development	
Flow rate	Mean annual flow rate	No reduction attributable to increased abstraction.	Refer to data from Rivers Agency if available
Site integrity	Total area	No reduction or fragmentation of area	

Annex 4: Information Sheet on Ramsar Wetlands (RIS)

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

2. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

3. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

4. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

---

2 Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

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3. Date this sheet was completed/updated:

Designated: 04 March 1997

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4. Country:

UK (Northern Ireland)

---

4. Name of the Ramsar site:

Upper Lough Erne

---

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

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☐ **For RIS updates only, changes to the site since its designation or earlier update:**

a) Site boundary and area:

☐ Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

5. Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

Produced by JNCC: Version 3.0, 13/06/2008

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

7. A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* -or- *no* ;
ii) **an electronic format** (e.g. a JPEG or ArcView image) Yes

a GIS file providing geo-referenced site boundary vectors and attribute tables *yes* -or- *no* ;

Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area. For

precise boundary details, please refer to paper map provided at designation

9. Geographical coordinates (latitude/longitude)**:**

54 12 00 N 07 29 40 W

10. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Enniskillen

Upper Lough Erne is situated in Co. Fermanagh, in the west of Northern Ireland.

Administrative region: Fermanagh

11. Elevation (average and/or max. & min.) (metres)**: 11. Area** (hectares)**:** 5818.07

Min. 40
Max. 75
Mean 46

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Upper Lough Erne is a very large and complex freshwater system. A series of flooded drumlins in the course of the River Erne give rise to a complex of islands, bays and many lakes bordered by damp pastures, fens, reedswamp and alder/willow carr and oak woodland.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2, 3, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

The site is a particularly good representative example of a eutrophic lake and associated swamp, fen and wet grassland.

The site is a particularly good representative example of a wetland which plays a substantial hydrological, biological and ecological system role in the natural functioning of a major river basin which is located in a trans-border position with the Republic of Ireland.

Ramsar criterion 2

The site supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies of plant and animal. Plant species in published or draft Irish Red Data Books include: fen violet *Viola stagnalis*, Irish lady's tresses *Spiranthes romanzoffiana*, pointed stonewort *Nitella mucronata* and the moss *Fissidens monguillonii*. Vertebrate species in the Irish Vertebrate Red Data Book include whiskered bat *Myotis mystacinus*, shoveler *Anas clypeata*, pochard *Aythya farina* and brook lamprey *Lampetra planeri*. Rare or vulnerable invertebrate species include white-clawed crayfish *Austropotabius pallipes*, lunar hornet moth, *Sesia bembeciformis*, a pondskater *Limnoporus rufoscutellatus*, the water beetles, *Donacia aquatica, D. bicolora, Gyrinus distinctus, G. natator* and *Hydroporus glabriusculus* and the carabid *Lebia cruxminor*.

Ramsar criterion 3

The site is of special value for maintaining the genetic and ecological diversity of Northern Ireland because of the quality and peculiarities of its flora and fauna. Furthermore, a large number of plant and animal species are confined or almost confined to this area within Northern Ireland including most of the rare species listed in Criterion 2.
The site regularly supports substantial numbers of individuals from particular groups of waterfowl which are indicative of wetland values, productivity and diversity. Wintering wildfowl species which occur in at least nationally important numbers include great crested grebe *Podiceps cristatus*, cormorant *Phalacrocorax carbo*, whooper swan *Cygnus cygnus*, mute swan *Anser olor*, tufted duck *Aythya fuligula*, wigeon *Anas penelope*, teal *Anas crecca*, goldeneye *Bucephala clangula*, coot *Fulica atra* and mallard *Anas platyrhynchos*.

Ramsar criterion 6

The site regular supports internationally important numbers of wintering Whopper Swan *Cygnus cygnus*. The birds using the site form the core of a population of birds which use both the site and the extensive improved agricultural grassland surrounding the areas.

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in winter:

Whooper swan , *Cygnus cygnus*, Iceland/UK/Ireland	875 individuals, representing an average of 4.1% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
See Sections 21/22 for details of noteworthy species

12. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation)**:**

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

(4) biogeographic region:
Atlantic

(5) biogeographic regionalisation scheme (include reference citation):
Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	basic, clay, alluvium, peat, nutrient-rich, limestone
Geomorphology and landscape	lowland, island, floodplain
Nutrient status	eutrophic
pH	alkaline
Salinity	fresh
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Armagh, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/armagh.html) Max. daily temperature: 12.9° C Min. daily temperature: 5.8° C Days of air frost: 40.4 Rainfall: 795.4 mm Hrs. of sunshine: 1191.6

General description of the Physical Features:

Upper Lough Erne is a very large and complex freshwater system within the catchment of the River Erne. A series of flooded drumlins in the course of the River Erne give rise to a complex of islands, bays and many lakes bordered by damp pastures, fens, reedswamp, alder *Alnus glutinosa*-willow *Salix* sp. carr, and oak *Quercus* sp. woodland.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Upper Lough Erne is a very large and complex freshwater system within the catchment of the River Erne. A series of flooded drumlins in the course of the River Erne give rise to a complex of islands, bays and many lakes bordered by damp pastures, fens, reedswamp, alder *Alnus glutinosa*-willow *Salix* sp. carr, and oak *Quercus* sp. woodland.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

No special values known

2. Wetland types:

Inland wetland

Code	Name	% Area
O	Freshwater lakes: permanent	64.9

Other	Other	14.6
Ts	Freshwater marshes / pools: seasonal / intermittent	10.3
Tp	Freshwater marshes / pools: permanent	8.6
U	Peatlands (including peat bogs swamps, fens)	0.9
4	Seasonally flooded agricultural land	0.7

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The extensive nature of the open water and shoreline of this site has resulted in the site containing exceptionally extensive swamp and fen transitions and associated Magnopotamion and Hydrocharition vegetation. The site contains important associated habitats, most notably wet grassland and woodland.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12** . Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Viola stagnalis, Spiranthes romanzoffiana.
Lower Plants.
Nitella mucronata, Fissidens monguillonii.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12** . Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Black-headed gull , *Larus ridibundus*, N & C Europe	1527 apparently occupied nests, representing an average of 2.8% of the all-Ireland population (Seabird 2000 Census)

Species with peak counts in winter:

Little grebe , *Tachybaptus ruficollis ruficollis*, Europe to E Urals, NW Africa	89 individuals, representing an average of 1.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Great crested grebe , *Podiceps cristatus cristatus*, NW Europe	160 individuals, representing an average of 4.5% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	135 individuals, representing an average of 2.7% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Eurasian teal , *Anas crecca,* NW Europe	857 individuals, representing an average of 1.3% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Mallard , *Anas platyrhynchos platyrhynchos,* NW Europe	523 individuals, representing an average of 1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Common pochard , *Aythya ferina,* NE & NW Europe	451 individuals, representing an average of 1.1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Tufted duck , *Aythya fuligula,* NW Europe	839 individuals, representing an average of 2% of the all-Ireland population (5 year peak mean 1998/9-2002/3)
Common coot , *Fulica atra atra,* NW Europe	1043 individuals, representing an average of 4.1% of the all-Ireland population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Mammals.

Lutra lutra, Myotis mystacinus

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23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Aquatic vegetation (e.g. reeds, willows, seaweed)
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Traditional cultural
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Tourism	+	
Recreation	+	
Current scientific research	+	
Fishing: recreational/sport	+	
Grazing (unspecified)	+	
Hunting: recreational/sport	+	

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	2		+	+	+
Introduction/invasion of non-native animal species	2		+	+	+
Pollution – agricultural fertilisers	2	Pollution/fertilisers, land runoff from surrounding intensively managed agricultural land.	+	+	+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Eutrophication - Eutrophication is a threat to all the lakes which comprise the site. The problem is being addressed

through a cross-border water quality management strategy. For smaller satellite loughs ASSI and Environmentally Sensitive Area management agreements will also continue to offer some control of nutrient enrichment from agriculture and also offer the potential for creating additional habitat for whooper swans *Cygnus cygnus*. Water quality will be subject to regular monitoring. No further conservation measures are currently proposed. Water Catchment Management Plan will be developed under the Water Framework Directive.

Introduction/invasion of non-native animal species - Introduction/invasion of exotic animal species: Undertaking studies on effects of non-native zebra mussel *Dreissena polymorpha* on lough ecology. Enhanced water clarity possibly due to zebra mussels, resulting in extensive aquatic macrophtye growth. Published strategy for containment of zebra mussels to existing areas. Monitoring programme undertaken and selective clearance of aquatic macrophytes in progress.

Pollution – agricultural fertilisers - Pollution from fertilisers is a threat to all the lakes which comprise the site. The problem is being addressed through a cross-border water quality management strategy. For smaller satellite loughs ASSI and Environmentally Sensitive Area management agreements will also continue to offer some control of nutrient enrichment from agriculture and also offer the potential for creating additional habitat for whooper swans *Cygnus cygnus*. Water quality will be subject to regular monitoring. Water Catchment Management Plan will be developed under the Water Framework Directive.

Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Environmentally Sensitive Area (ESA)	+	+
Special Area of Conservation (SAC)	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

None reported

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

None reported

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

None reported

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Department of the Environment (Northern Ireland), Environment and Heritage Service, Commonwealth House, Castle Street, Belfast, Northern Ireland, BT1 1GU

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

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