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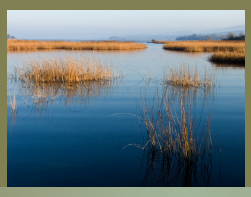
LONGFORD COUNTY COUNCIL

Appropriate Assessment of the Longford County Development Plan 2009-2015

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Longford County Council

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Introduction

The preservation, protection and improvement of the quality of the environment, including the conservation of natural habitats and wild fauna and flora, are essential objectives of general interest pursued by the European Union.

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) formed a basis for the designation of Special Areas of Conservation. These sites are afforded protection because of their habitat type or the presence of important flora or fauna species. The aim of the Directive is to ensure the long term protection and conservation of the biodiversity within each site.

Similarly, Special Protection Areas are legislated for under the Birds Directive (Council Directive 79/409/EEC on the Conservation of Wild Birds). Primarily the Directive seeks to protect wild bird species, both Annex 1 and regularly occurring migratory species through the conservation of their natural habitats.

Collectively, SACs and SPAs are referred to as Natura 2000 sites. In general terms they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community.

Appropriate Assessment

Under Article 6(3) of the Habitats Directive an Appropriate Assessment must be undertaken for any plan or program that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. Article 6 paragraph 3 states:

> *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

In summary, an Appropriate Assessment is an evaluation of the potential impacts of a plan on the conservation objectives of a Natura 2000 site, and the development, where necessary, of mitigation or avoidance measures to preclude negative effects. Principally the purpose of an Appropriate Assessment is to identify the possible effects of implementing a Plan on the conservation status of designated Natura 2000 sites within the Plan area.

In a situation where it is not possible to fully demonstrate that adverse effects on the site integrity would occur, options must be explored so that any risk of damaging designated sites is avoided. Where avoidance is not possible, it is recommended that mitigation measures should be examined which compensate for any negative effects likely to occur, whether directly or indirectly.

Longford County Council has prepared a Development Plan for implementation over the period 2009-2015 for the County. The Plan area covers County Longford, with the exception of Longford town, which has its own administrative powers. (The Plan is discussed in more detail overleaf). In accordance with Article 6(3) of the Habitats Directive, Longford County Council are undertaking an Appropriate Assessment of the effect of the implementation of the Plan on Natura 2000 sites.

Methodology

This Appropriate Assessment has been prepared in accordance with "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" published in 2001. Regard has also been had to the following:

- Circular Letter SEA 1/08 & NPWS 1/08 (Department of the Environment, Heritage and Local Government);
- The Status of EU Protected Habitats and Species in Ireland (National Parks and Wildlife Service 2008);
- Environment in Focus (Environmental Protection Agency 2007).

There are four distinct stages to undertaking an Appropriate Assessment as outlined in current EU guidance. They are:

1. Screening
2. Appropriate Assessment
3. Assessment of Alternatives
4. Where no alternatives exist, an assessment of compensatory issues.

NB: Currently the assessment is at Stage 2, the screening report is attached as Appendix 1 to this report.

Stage 1: Screening

This stage examines the likely effects of a project or plan, either alone or in combination with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant. This assessment comprises 4 steps:

1) Determining whether the project or plan is directly connected with or necessary to the management of the site;
2) Describing the project or plan and the description and characterisation of other projects or plans that in combination have the potential for a having significant effects on Natura 2000 sites;
3) Identifying the potential effects on the Natura 2000 site;
4) Assessing the significance of any effects of the Natura 2000 site.

The approach adopted during the screening stage has been to apply the precautionary principle and it was determined, based on the extent of the plan area and the nature of the plan, an Appropriate Assessment is necessary. Furthermore the EU guidance states if a plan "*to which the SEA directive applies, then the 'significance' used to screen EIS or SEA plans is likely to also screen projects for an appropriate assessment'*. The Screening Report is included as Appendix 1 to this report.

Stage 2: Appropriate Assessment

The second stage is the Appropriate Assessment and under EU guidance there are four key steps, and while being interlinked, require a subjective individual appraisal to ensure each section is fully developed in the required context. They are:

a) Information required;
b) Impact prediction;
c) Conservation objectives;
d) Mitigation measures

Information Required
The first step in this assessment is to identify the conservation objectives of the sites and to identify those aspects of the plan (alone or in combination with other plans) that will affect those objectives. These objectives have been compiled from standard data sheets obtained from the NPWS.

Impact Prediction
The elements that make up the ecological structure and function of a site are not easily measured, therefore predicting the likely impacts of a plan on a Natura 2000 site can be difficult. EU guidance recommends that predicting impacts should be done within a structured framework and completed as objectively as possible.

Thus the type of impacts must be identified and presented as direct and indirect effects; short to long term effects; construction, operational and decommissioning effects; and isolated, interactive and cumulative effects.

Conservation Objectives
Once the effects of the plan have been identified or predicted, it is necessary to assess whether there will be adverse effects on the integrity of the site as defined by the conservation objectives and status of the site. The precautionary principle and the focus of the assessment is undertaken objectively demonstrating where there will be no impact on the integrity of Natura 2000 sites and where this cannot be demonstrated a finding of a resultant adverse impact must be assumed. Where information is unavailable it is advised to assume a negative or adverse impact will result. Furthermore where it cannot be demonstrated that there will be no adverse effects on the site, it is necessary to devise mitigation measures to avoid, where possible, any adverse effects.

Mitigation Measures
Mitigation measures must be assessed against the adverse effects the plan is likely to cause, either alone or in combination with other plans. The onus is on the local authority to determine the level of mitigation required, taking account of suggestions from the NPWS as well as others with environmental mandates. The aim of the mitigation measures is to aspire to the top of the mitigation hierarchy, ie avoidance at source. To assess the mitigation measures, the Guidelines state the following tasks must be completed:

- list the measures to be introduced;
- explain how the measures will avoid the adverse impacts on the site;
- explain how the measures will reduce the adverse impacts on the site.

Furthermore for each of the listed mitigation measures the following should be provided:

- Evidence of how they will be secured and implemented and by whom;
- Evidence of the degree of confidence in their likely success;
- Timescale relative to the pan and how they will be implemented;
- Evidence of how the measures will be monitored, and, should mitigation failure be identified, how that failure will be rectified.

Outcomes
Following the completion of the appropriate assessment, it is considered best practice to produce an appropriate assessment report which:

- describes the plan in sufficient detail for the public to understand its size,, scale and objectives;
- describes the baseline conditions of the Natura 2000 site;
- identifies the adverse effects of the plan on the Natura 2000 site;
- Explains how those effects will be avoided through mitigation;
- Sets out a timescale and identifies the mechanisms through which the mitigaiotn measures will be secured, implemented and monitored.

Following the consultation period, and despite the application of mitigation measures, if the competent authority considers that residual adverse impacts remain, then the plan may not proceed until Stage 3 assessment has been completed and it has objectively concluded that there is an absence of alternative solutions. This report is proved in Appendix 3.

Stage 3: Assessment of Alternative Solutions

This stage examines ways of implementing the plan so that, where possible any adverse impacts on the integrity of the Natura 2000 sites can be avoided. Before a plan can proceed it must be objectively concluded that no alternative solutions exist. It rests with the competent authority to make the necessary comparisons between these alternative solutions. Importantly economic criteria cannot over rule ecological criteria. The examination of alternative solutions requires therefore that the conservation objectives of the Natura 2000 site will outweigh any consideration of costs, delays or other aspects of an alternative solution.

There are two steps to this aspect of the assessment process.

Step 1: Identifying alternative solutions.

Step 2: Assess alternative solutions

Stage 3 will be invoked where adverse impacts are noted and cannot be mitigation against.

Stage 4: Where no alternatives exist, an assessment of compensatory issues.

Provision is made in the Directive to consider compensatory measures where it is clearly established and demonstrated that a specific proposal is required in the overriding public interest. This stage will only be required where no alternative, as discussed in Stage 3, can be found.

Stage 1: Information Required

As stated on Page 2 of this report the assessment is currently at Stage 2 of the process. The Screening report is attached as Appendix 1.

Information about the Plan

Characteristics of the Plan which may affect the site
Under the Planning and Development Act, 2000, each planning authority must prepare a development plan for its functional area every 6 years. The County Development Plan will be the new statutory plan for the County of Longford for 2009-2015 but excludes the urban area of Longford town, which is a separate planning authority. This plan, once adopted will supersede the previous plan 2003 – 2009.

The plan has two main purposes, firstly to provide a framework of acceptable uses within the County, defining acceptable forms of development and where it should be directed and secondly to provide a detailed basis for the promotion and control of development. The County Development Plan is therefore the guiding document for development within the county over the next 6 years.

Area of the Plan
County Longford is located in the North Midlands of Ireland and is bounded by the counties of Roscommon, Leitrim, Cavan and Westmeath. The county covers an area of 1,091 km² (421 square miles).

Specifications of the Plan
The plan outlines the local authority's policies and objectives for a suite of issues including:

- Economy
- Infrastructure
- Water services
- Heritage and Environment
- Social and community
- Landscape
- Residential Development

Characteristics of other approved plans which may cause interactive or cumulative impacts
Co. Longford shares its boundary with a number of midland counties as noted above. Furthermore a number of Natura 2000 sites are located in more than one county. Similar development plans are in existence throughout the region, accordingly these plans acting alone or in combination can have a cumulative impact on Natura 2000 sites located within Co. Longford.

Planned or contemplated nature conservation initiatives likely to affect the status of the site in the future
The Minister for the Environment, Heritage and Local Government is currently co-ordinating the development of Ireland's 2nd National Biodiversity Plan. The preparation and implementation of the Plan will be the responsibility of a range of Government Departments and Agencies. The production of national biodiversity strategies is an obligation under the Convention on Biological Diversity, which Ireland ratified in 1996. Ireland produced the National Biodiversity Plan in 2002, to meet this commitment and the new Plan will seek to build on the progress achieved since 2002. This paper provides an overview of the key issues to be addressed in the formulation of the Plan.

Furthermore a series of River Basin Management Plans are currently being prepared and are due for publication later this year. Co. Longford is located within 2 such districts, the Shannon and the North Western region. The Plans are likely to have far reaching consequences for water management and protection of resources throughout the country.

Relationship between the plan and the Natura 2000 sites
Most of County Longford lies in the basin of the River Shannon, which forms its western boundary, mainly in the form of a large lake, Lough Ree, with the northeastern part of the county draining towards the River Erne. Much of Lough Gowna is also within the county boundary.

The County contains a number of important habitats designated as either Special Areas of Conservation (SACs) or Special Protection Areas (SPA). The location and distribution of these sites is shown on Figures 1 and 2.

These sites are:

- Special Areas of Conservation:
  - Lough Ree
  - Fortwilliam Turlough
  - Lough Forbes Complex
  - Ardagullion Bog
  - Brown Bog
  - Clooneen Bog

- Special Protection Areas:
  - Lough Kinale And Derragh Lough SPA
  - Lough Ree SPA
  - Ballykenny-Fishertown Bog SPA
  - Glen Lough SPA

The information requirements of the authorisation body

In accordance with the Directive on Strategic Environmental Assessment (2001/42/EC), the plan has been subject to an environmental assessment. The assessment concluded that in broad terms the plan is likely to have a neutral impact on the environment.

Information about the sites

This aspect of the assessment has been prepared using existing and available information from the National Parks and Wildlife Service. Where possible, and in accordance with the EU guidelines, the following aspects have been addressed for each site:

- Reasons for site designation
- Conservation objectives of the site
- Baseline condition of the site
- Key attribute of any Annex 1 habitats of Annex II species
- Physical and chemical condition of the site
- Dynamics of the habitats, species and their ecology
- Aspects of the site sensitive to change
- Structural and functional relationships that create and maintains the site's integrity
- Seasonal influences
- Other conservation issues.

Given the importance to the Conservation Objectives of each site these are summarised at the end of this section. Full and detailed descriptions of each of the sites are provided in Appendix 2.

Lough Ree - Site Code: 000440

Lough Ree is the third largest lake in the Republic of Ireland and is situated, in an icedeepened depression in Carboniferous Limestone, on the River Shannon system between Lanesborough and Athlone. It has a very long, indented shoreline and hence has many sheltered bays. The site supports a number of rare plant species which are listed in the Irish Red Data Book, Alder Buckthorn (Frangula alnus) and Bird Cherry (Prunus padus) are woodland components at St. John's Wood and elsewhere. Narrow-leaved Helleborine (Cephalanthera longifolia) and Betony (Stachys officinalis), which is legally protected under The Flora Protection Order (1987), occur among the ground flora of Hare's Island (where the former occurs in notable abundance) and a number of other woods. The rare Myxomycete fungus, Echinostelium colliculosum, has also been recorded from St John's Wood. The lake itself contains one of only two populations of the endangered fish species, Pollan (Coregonus autumnalis), which is genetically different from Continental European stock. Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent quality and include some of the best examples of this habitat in Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for

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

Fortwilliam Turlough - Site Code: 000448
Fortwilliam Turlough is situated close to the eastern shore of Lough Ree, 6 km south of Lanesborough, in County Longford. The surrounding countryside is flat, with a thin cover of drift. The central part of the turlough is marly and contains Shoreweed (Littorella uniflora), Various-leaved Pondweed (Potamogeton gramineus), Broad-leaved Pondweed (Potamogeton natans) and the moss, Scorpidium scorpioides, in the wetter parts, together with Lesser Water-plantain (Baldellia ranunculoides), Sedges (including Carex serotina) and Jointed Rush (Juncus articulatus). Fortwilliam is the only extant large turlough in Longford and one of only two east of the Shannon. It has a high diversity caused by a semi-permanent waterbody, abundant marl precipitation, a relative lack of grazing and small outcrops of limestone, so it is a very representative example of the habitat. The turlough basin seems intact, its basin and hydrology largely unmodified. Its oligotrophic status is valuable, as this feature is becoming rarer in the context of modern agriculture. Due to these factors, Fortwilliam Turlough is a site of considerable ecological value.

Lough Forbes Complex - Site Code: 001818
This site is composed of a complex of different adjacent habitats, each of which contributes in a different way to the overall value of the site as a whole. The site is centered around Lough Forbes, a lake formed by a broadening of the River Shannon, and a series of raised bogs, callows grassland and a variety of other aquatic and terrestrial habitats to the west of Newtown Forbes on the Longford/Roscommon boundary. Lough Forbes is a medium sized lake underlain by limestone. It has extensive Reed (Phragmites australis) swamps which provide good cover for wildfowl. The raised bogs, located on the south-eastern shore of Lough Forbes, are known as the Ballykenny-Fishertown complex. These bogs are of international importance as unique examples of Shannon River edge bogs and they are also the most northerly intact bogs adjacent to the River Shannon. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. The Lough Forbes area is also of national importance for its population of Greenland White-fronted Geese (240 maximum count, 1991/1992). Ireland hosts about 50% of the world population of this race of goose, and has international obligations to conserve it.

Ardagullion Bog - Site Code: 002341
Ardagullion Bog is located 5 km north-east of Edgeworthstown. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca), and at least some of the following associated species, Bog Asphodel (Narthecium ossifragum), Sundews (Drosera spp.), Deergrass (Scirpus cespitosus), Carnation Sedge (Carex panicea). Ardagullion Bog supports a good diversity of raised bog microhabitats, including hummocks and pools. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

Brown Bog - Site Code: 002346
Brown Bog NHA is located 5 km north-west of Longford Town mainly in the townlands of Tully, Lissanurlan and Cartronlebagh. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The site supports typical Midland Raised Bog communities, which include Ling Heather (Calluna vulgaris), Carnation Sedge, Bog-rosemary (Andromeda polifolia) and occasional Cranberry (Vaccinium oxycoccos). The high bog supports extensive quaking carpets of bog mosses including Sphagnum magellanicum, S. papillosum and S. capillifolium. Pools occur frequently and support Sphagnum auriculatum, Bogbean (Menyanthes trifoliata) and Great Sundew (Drosera anglica). Hummocks of Sphagnum imbricatum and S. fuscum occur. In the northwest old deciduous woodland with Downy Birch, Scots Pine, Rowan (Sorbus accuparia) is found. The site supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site. Ireland has a high proportion of the E.U. resource of active Raised Bog (over 60%) and so has a special responsibility for its conservation at an international level.

Clooneen Bog - Site Code: 002348
Clooneen Bog lies approximately 3 km south-east of Roosky in Co. Longford on the east bank of the River Shannon, just north of Lough Forbes. The site is a candidate Special Area of Conservation selected for bog woodland, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca).The open bog woodland is dominated by lichen encrusted Downy Birch (Betula pubescens) with a field layer of Purple Moor-grass (Molinia caerulea) and Hare's-tail Cotton-grass (Eriophorum vaginatum) with ericaceous shrubs such as Ling Heather, Crowberry (Empetrum nigrum), Bog-myrtle (Myrica gale) and Bilberry (Vaccinium myrtillus). There are also several ferns present including Hard Fern (Blechnum spicant) and Broad Buckler-fern (Dryopteris dilatata) There is some active regeneration in the north-east with Cottongrass dominating over bog moss (S. cuspidatum). Clooneen Bog is a site of considerable conservation significance comprising as it does a raised bog and bog woodland, rare habitats within the E.U.

Lough Kinale And Derragh Lough SPA - Site Code: 0004061
Lough Kinale is a relatively small lake that is situated immediately downstream of Lough Sheelin, both lakes being near the top of the catchment of the Inny River, a main tributary of the River Shannon. Derragh Lough, a much smaller system, is connected to Lough Kinale and the Inny River. This is a typical limestone system and is very shallow (maximum depth of Lough Kinale is c. 4 m). A calcium-rich small sedge marsh occurs along parts of the shoreline characterised by species such as Longstalked Yellow-sedge (Carex lepidocarpa) and Water Mint (Mentha aquatica). Lough Kinale and Derragh Lough remains an important site for wintering waterfowl, especially diving duck. The site supports nationally important populations of Pochard (951) and Tufted Duck (449) – figures are average peaks for the 5 seasons 1995/96-1999/00. A large population of Mute Swan (120), close to the threshold for national importance, also uses the site. A number of other species are found, in relatively low numbers, including Great Crested Grebe (25), Mallard (130) and Goldeneye (22). Whilst relatively small in area and subject to a number of damaging activities, this site retains national importance for two duck species. With an improvement in the environmental conditions pertaining at the site, higher numbers of some species would undoubtedly occur.

Lough Ree SPA - Site Code: 004064 – see also SAC section
Situated on the River Shannon between Lanesborough and Athlone, Lough Ree lies in an ice-deepened depression in Carboniferous Limestone. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Wigeon (1,475), Teal (912), Pintail (35), Tufted Duck (661), Goldeneye (137), Golden Plover (2,035) and Lapwing (3,870) occurring – all figures are average peaks for the 5 seasons 1995/96-1999/00. Regionally important numbers of Whooper Swan (89) and Greenland White-fronted Goose (92) are found feeding in the vicinity of the lake. Other species which occur in winter include Cormorant (64), Mallard (675), Coot (250), Shoveler (40), Curlew (167) and Great Crested Grebe (23), as well as the resident Little Grebe (34) and Mute Swan (93). The site supports a nationally important population of Common Tern (90 pairs in 1990). Lough Ree is an important site for breeding duck and grebes, with Tufted Duck (265 individuals in late May 1995) and Great Crested Grebe (89 individuals in late May 1995) having populations of national importance. Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. The most recent full census of the site for the species (in 1999) gave a population of c. 32 pairs. The woodland around the lake is also a stronghold for Garden Warbler.

Ballykenny-Fishertown Bog SPA - Site Code: 004101
Ballykenny-Fisherstown Bog SPA is situated in the north-central midlands and is underlain by Carboniferous limestone. It is centered around Lough Forbes, a naturally eutrophic lake on the River Shannon system which is fed also from the north by the River Rinn. The lake has well-developed swamp vegetation and displays natural transitions to seasonally flooded grassland, marsh and raised bog. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. The lake and callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers. Counts in two of the winters in the 1995/96 to 1999/00 period are as follows: Cormorant 51, Whooper Swan 40, Wigeon 419, Teal 444, Shoveler 6, Tufted Duck 49 and Goldeneye 11. Merlin has been recorded within the site and may nest. Red Grouse are known from the bogs. The site is of ornithological importance for its wintering waterfowl, breeding Merlin and Red Grouse. The presence of Whooper Swans and Merlin is also of particular note. Red Grouse is a Red listed species in Ireland as it has declined in numbers in recent decades.

Glen Lough SPA - Site Code: 004045
Glen Lough is situated about 5 km north-west of Lough Iron, to which it is connected by the Black River. An internationally important Whooper Swan population uses the site at times. This flock (average peak of 272 individuals for the 5 seasons 1995/96-1999/00) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (85), Teal (75), Mallard 46), Pintail (7) and Shoveler (23). Lapwing (189) is also found in the area. Whilst this site attracts a range of wintering waterfowl, the principal interest is the internationally important Whooper Swan population that is based in the area. Whooper Swan is of particular note as it is listed on Annex I of the E.U. Birds Directive. Greenland White-fronted Goose, nowadays an occasional visitor to the site, is also listed on Annex I of this Directive.

Stage 2: Impact Prediction

Through an evaluation of the sites conservation status and site descriptions provided by the National Parks and Wildlife Service, the following threats to the long term conservation of the sites can be summarized as the following:

- Disturbance;
- Land drainage;
- Peat harvesting;
- Afforestation; and
- Water Quality.

It is primarily the responsibility of NPWS to ensure that designated sites are protected from significant damage through consultation and discussions with landowners. Where a landowner is considering making changes that might affect a wildlife habitat in a designated area, he/she must consult the local conservation ranger beforehand. Such activities are known as 'Notifiable Actions' and are actions or operations that might be damaging to protected sites and can only be carried out with the permission of the Minister for the Environment, Heritage and Local Government.

Issues of land use practices within protected areas is therefore an issue for the National Park and Wildlife Service, in conjunction with other state departments and agencies such as the Department of Agriculture, Fisheries and Food, Forest Service and Bord Na Mona for example.

The local authority regulates and controls development within its functional area and therefore a potential exists to adversely impact on Natura 2000 sites through inappropriate development either within or close to designated sites. Such development either in isolation or in combination with other similar developments can potentially lead to significant adverse impacts on the environment with long term consequences. Such impacts may be through direct habitat loss (rural housing, agricultural development, afforestation etc) or through point source emissions leading to a deterioration in water quality (proliferation of individual waster water treatment facilities, inappropriate industrial development, intensification of agricultural use etc).

Furthermore the local authority provides sanitation services such as waste water treatment. The implementation of the plan and the planned increased in population will increase the loading on the existing wastewater infrastructure. Without adequate treatment discharges from such plants, this can potentially increase the nutrient loading on receiving waters with direct, long term adverse consequences on the aquatic environment.

It is therefore reasonably concluded that the implementation of the plan has the potential to cause long term, direct and indirect adverse impacts on the protection and conservation of Natura 2000 sites. Given this result it is necessary for the local authority to propose and implement adequate mitigation measures to counteract this finding.

Stage 3: Conservation Objectives

The conservation objectives for each of the Natura 2000 sites is provided in the table below. The objectives are based on the overall conservation value of the individual sites.

		Conservation Objectives
Special Areas of Conservation		
Site Code: 000440	Lough Ree	To ensure there is no net loss of area or change to the structure, biodiversity or distribution pattern of the highly sensitive communities within the site. To protect the mesotrophic to moderate eutrophic status which supports a rare fish (Pollan) and the diversity of breeding and wintering birds.
Site Code: 000448	Fortwilliam Turlough	To ensure there is no net loss of area or change to this semi permanent waterbody, its abundant marl precipitation and biodiversity.
Site Code: 001818	Lough Forbes Complex	To ensure there is no net loss of area or change to the structure, biodiversity or abundance of various habitats within the site.
Site Code: 002341	Ardagullion Bog	To ensure there is no net loss of area or change to the structure, biodiversity or distribution pattern of the highly sensitive communities within the site.
Site Code: 002346	Brown Bog	To ensure there is no net loss of area or change to the raised bog; its structure and its microhabitats.
Site Code: 002348	Clooneen Bog	To ensure there is no net loss of area or change to the raised bog; its structure, and its biodiversity.
Special Protection Areas		
Site Code: 0004061	Lough Kinale And Derragh Lough	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the retention and protection of the nationally important duck species (Pochard and Tufted Duck.
Site Code: 004064	Lough Ree SPA	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and resident bird populations.
Site Code: 004101	Ballykenny-Fishertown Bog	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and breeding Merlin and Red Grouse.
Site Code: 004045	Glen Lough SPA	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and resident bird populations.

Once the conservation objectives of the sites have been established an assessment of the potential impact on the integrity of the sites is undertaken. For the purposes of simplification each site has been assessed individually, however the findings are grouped to form one 'Integrity Checklist'. This is presented below.

Integrity of site checklist (Box 10 of the Guidelines)	
Conservation objectives	
Does the project or plan have the potential to:	*Yes/No*
Cause delays in progress towards achieving the conservation objectives of the site?	No
Interrupt progress towards achieving the conservation objectives of the site?	No
Disrupt those factors that help to maintain the favourable conditions of the site?	Yes
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	Yes
Other indicators	
Does the project or plan have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	Yes
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	Yes
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	Yes
Reduce the area of key habitats?	Yes
Reduce the population of key species?	No
Change the balance between key species?	Yes
Reduce diversity of the site?	Yes
Result in disturbance that could affect population size or density or the balance between key species?	Yes
Result in fragmentation?	Yes
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	Yes

In conclusion it can be shown, using the precautionary principle, that the implementation of the plan has the potential to adversely impact on the integrity of the Natura 2000 sites. The potential exists to;

- reduce the area of Natura 2000 sites by loss or fragmentation through inappropriate or insensitive development;
- cause fundamental changes in the chemistry of the soil or water environment;
- interfere with water flows and flood dynamics; and
- create unnecessary disturbance through inappropriate development with adverse effects on fauna species.

Stage 4: Mitigation Measures

At the outset of the Plan's preparation it was recognized that the protection and future conservation of designated sites under EU legislation would be an important issue for the Local authority to address, both directly and indirectly. Furthermore the Strategic Environmental Assessment restated the need and importance to protect these sites in the long term interests of sustainability.

As a result a comprehensive set of policies and objectives are contained within the plan which are aimed specifically at protecting the rich and diverse natural environment within the County Development Plan area.

In accordance with EU guidelines a Mitigation Measures table has been prepared outlining;

- the measures proposed;
- how the measures will avoid or reduce the adverse effects on the integrity of the sites; and
- how and by whom they will be implemented.

Furthermore an assessment of the degree of confidence in their likely success, the timescale for implementation and the monitoring of their implementation is also provided.

Outcomes

The Appropriate Assessment has shown that there is a potential for adverse impacts on the integrity of Natura 2000 sites as a result of the Longford County Development Plan 2009-2015. However, the measures that have been formulated and proposed for inclusion in the Development Plan mitigate this potential, provided that upon adoption they are fully implemented and adhered to as Council policy. Thus, the plan, which includes appropriate mitigation measures, will not adversely affect the integrity of any Natura 2000 site.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
1	**Water Quality**	HOU DS 12 f) f) Where it is proposed to dispose of treated effluent direct to a watercourse, the applicant shall submit an Assimilative Capacity Report on the receiving water, prepared by an experienced hydrologist and containing the following information; i. Assessing the chemical, biological (Q rating) and bacterial condition of the receiving water. ii. Assessing the flow data of receiving waters, indicating 95 %ile flow and Dry Weather Flow. iii. Provide an assessment of the associated impacts of the proposed discharge on the chemical, biological and bacteriological quality of the receiving waters with regard to the relevant legislation	If it cannot be shown conclusively that the criteria outlined in this objective canot be met, planning permission will not be forthcoming.	NA	This will be implemented by the Local authority through the planning consent process.
2		HOU DS 12 f) f) Where it is proposed to dispose of treated effluent by percolation, a detailed site assessment and characterisation should be submitted in accordance with EPA standards. The Council may require an experienced hydro-geologist report to be submitted on the likely impact of the discharge on ground water quality.	Permission will not be granted for development where the EPA guidelines cannot be met. It is suggested that this objective is revised and the following added as a final sentence. The Council will require a detailed hydro geologist report on the likely impact of the discharge on ground water quality in areas classified as either of extreme vulnerability or highly vulnerable.	NA	This will be implemented by the Local authority through the planning consent process.
3		WS10 To protect, within its powers, valuable groundwater sources and important surface water bodies from pollution through infiltration by domestic, agricultural or other sources effluent/pollutant material.		Permission will be linmited to where it can be shown that adverse impacts will not arise.	This will be implemented by the Local authority through the planning consent process.
4		WS 13 The upgrading of Longford Town effluent treatment plant and phased sewerage system improvements shall continue on an on-going basis.	Improvements in the quality of discharges from treatment plants will lessen the impact on the receiving waters.		The upgrading works will be carried out in accordance with current EPA guidelines.
5	**Urban Runoff**	SW 1 The discharge of surface water run-off and rainwater into foul sewage systems shall be strictly prohibited.		No new developments will be permitted to discharge surface water of rainwater to the network, therefore there will be no addiiton to the existing situation.	This will be implemented by the Local authority through the planning consent process and any upgrading works proposed to the sewer network during the lifetime of the plan.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
6		SW 2 Surface water storage measures shall be provided where it is considered that the surface water run-off levels exceed permissible discharge rates. Storm water run-off design should be carried out in accordance with Sustainable Urban Drainage Standards (SUDS), "Dublin Corporation Stormwater Management Policy Technical Guidelines" and "Greater Dublin Regional Code of Practice for Drainage Works" incorporating "Greater Dublin Strategic Drainage Study, Volume 2 , New Developments" or any future updates		As above	This will be implemented by the Local authority through the planning consent process.
7	**Emissions**	ECON 9 To ensure the protection of the environment in the installation of new developments through promoting the application of the Best Available Technology (BAT) principle in terms of control of emissions/potential pollutants.	While each proposal will be assessed on its merits permission will not be forthcoming where it is determined by the local authority that adverse impacts will occur.		This will be implemented by the Local authority through the planning consent process and where warranted through IPPC licencing issued by the EPA.
8	**Schemes**	HS 1 In assessing an application for a hydro scheme the following shall be taken into consideration:- a Impact on environmental designations - Amenity Areas, Natural Heritage Areas, Special Protection Areas, Archaeological sites, areas with significant amenity use etc. b Visual impact arising from turbine houses, embankments, structures, roads, power lines, poles etc. c Projects should incorporate a fish pass to ensure the free and safe passage of fish. The views of the local Regional Fisheries Board may be sought. d Likely erosion arising from the development and potential negative impacts on protected flora and fauna. e Turbines should be sited at sufficient distance from dwelling houses to ensure that noise emissions are not a nuisance. f Impact of construction stage and associated site works including water retaining structures, access routes, turbine housing, and grid connections etc. The timing of construction should avoid the breeding season of susceptible wildlife. g Consultation between the developer and local interest groups such as fishermen, water sport enthusiasts etc. prior to submitting planning applicatio		Any such proposal will be required to conduct an Appropriate Assessment of the likely effects on Natura 2000 sites.	Any such proposal will require planning consent and any proponent will be require to consult with the local authority, the NPWS and others.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
9	**Pollution Prevention**	ENV 2 Any application for planning permission for new development, extension to existing development or intensification or change of use shall be assessed in terms of its potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where such development would have a significant adverse effect on the amenities of the area through pollution by noise, fumes, dust, grit or vibration, or cause pollution of air, water and/or soil, planning permission will not be forthcoming, prior to the proposal and introduction of mitigation measures agreed with the planning authority to eliminate negative environmental impacts or reduce them to an acceptable operating level.		As stated in the objective any proposal which will impact significantly and negatively on the amenities of an area will not be afforded permission.	This will be implemented by the Local authority through the planning consent process and where warranted through IPPC licencing issued by the EPA.
10		ENV 3 The Council will seek to reduce the impacts of existing pollutant activities through the following measures: · Negotiation of a reduction in the pollutant activity to a non-polluting level or a revision of operating times to reduce the impact of the activity on adjacent land uses · Relocation to a more appropriate location where adjacent land uses are more compatible · Imposition of conditions restricting emissions/activity · Use of enforcement action against unauthorised developments/uses		Existing developments will be required with BAT guidance relevant to their industry.	This will be implemented by the Local authority through the planning consent process and where warranted through IPPC licencing issued by the EPA.
11		ENV 6 The Council shall seek to protect ground and surface water resources from pollution. To this end, any identified major catchment areas of surface water bodies, capable of use as a potable water resource or other beneficial use and areas of aquifer vulnerability shall be protected. Development of a potentially pollutant nature in these areas and any future areas identified shall be prohibited.	Development of a potentially pollutant nature in these areas and any future areas identified shall be prohibited.		This will be implemented by the Local authority through the planning consent process.
12		ENV 5 It is the policy of Longford County Council to encourage and promote compliance with the recommendations contained in the Shannon and North South Share River Basin Management Plans.	It is unclear what the recommendaitons of the Management Plans are but there is a commitment to comply with the plans once available.		This will be implemented by the Local authority.
13		ENV 9 The Council shall aim to prevent pollution in areas of poor soils through the implementation of relevant EPA and Department of Agriculture guidance and regulations in the percolation and/or spreading of domestic and agricultural effluent to land.			This will be implemented by the Local authority in conjunction with the Department of Agriculture, Fisheries and Food.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
14	**Heritage**	HER 4 The Planning Authority shall endeavour to identify important landscapes and habitats and the importance of local character, identity and distinctiveness, in both the natural and built heritage of the County. This shall include an investigation of the Heritage Plan for the County into locally important and small scale heritage sites. Where these have been identified as important under the Heritage Plan, they shall be afforded the relevant protection		Understanding and locating key habitats of importance is the first step in ensuring their long term protection.	This will be implemented by the Local authority and where possible with the NPWS.
15		NHB 1 It is an objective of the Council to protect, conserve and enhance the County's biodiversity and natural heritage. This includes wildlife (flora and fauna), habitats, landscapes and/or landscape features of importance to wildlife or which play a key role in the conservation and management of natural resources such as water.			This will be implemented by the Local authority and the NPWS.
16		NHB 6 It is the policy of the Council to protect sites designated in National and European legislation, and in other relevant International Conventions, Agreements and Processes. This includes sites proposed to be designated or designated as: * Special Areas of Conservation under the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) * Special Protection Areas under the Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds) Both the Birds and Habitats Directives have been transposed in Irish law by Ministerial Regulation. The European Communities (Natural Habitats) Regulations, 1997 are the most important of these because they provide for the protection measures and management regime that apply to SPAs and SACs. * Natural Heritage Areas (NHAs), Nature Reserves, and Refuges for Flora or Fauna under the Wildlife (Amendment) Act, 2000.			This will be implemented by the Local authority and the NPWS.
17		NHB 7 The Council shall seek to identify, protect and conserve, in co-operation with the relevant statutory authorities, vulnerable, rare and threatened species of wild fauna and flora and their habitats with particular reference to those species identified in national and European legislation, and in other International Conventions, Agreements and Processes.			This will be implemented by the Local authority and the NPWS.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
18		NHB 8 The Council shall seek to co-operate with statutory and other relevant agencies to identify and protect a representative sample of the County's wildlife habitats, of local or regional importance, not otherwise protected by legislation. In addition, it is Council policy to protect; o Ramsar sites under the The Convention on Wetlands of International Importance (especially as Waterfowl Habitat).			This will be implemented by the Local authority and the NPWS.
19		NHB 9 Protect and enhance important landscape features and their setting including rivers, streams, canals, lakes and associated wetlands such as reedbeds and swamps; ponds; springs; bogs; fens; trees; woodlands and scrub; hedgerows and other field boundary types such as stone walls and ditches. These are important because; (a) they form part of a network of habitats, corridors and 'stepping stones' essential for wildlife to flourish, thus providing a high quality natural environment for all, and/or (b) they protect and enhance surface water and groundwater resources and are essential as part of the integrated approach to the management of water resources, necessary to ensure the highest water quality into the future, as set out in the Water Framework Directive (Directive 2000/60/EC establishing a framework for Community action in the field of water policy).			This will be implemented by the Local authority and the NPWS.
20		ILW1 The Royal Canal, Rivers Shannon, Inny and Camlin and Lough Ree, Lough Gowna and the County's other rivers and lakes are recognised as important amenity and recreational resources and, as such, it is the policy of the Council to preserve, protect and enhance these important resources.			This will be implemented by the Local authority, the Fisheries Board, Waterways Ireland and the NPWS.
21		ILW 3 Longford County Council shall, within its powers, protect Lough Ree from unsustainable, large-scale and high volume abstraction of water resources for use in areas external to Longford County	Through the planning consent process.		Such a proposal will require a thorough and detailed Appropriate Assessment of its implicaitons.
22		ILW 7 Development will be strictly controlled in the vicinity of the inland waterways of the County and will not normally be permitted. Application for such development shall be assessed, in addition to normal planning criteria, in terms of its potential impact on the visual, recreational, ecological and environmental integrity of the area.	Through the planning consent process.		This will be implemented by the Local authority and the NPWS.

Mitigation Measures - Part A

No:	Category	List measures to be introduced.	Explain how the measures will avoid the adverse effects on the integrity of site.	Explain how the measure will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom
23		ILW 8 The broad zones of the lakes, rivers, canals and deciduous woodlands shall be protected from inappropriate development (see Appendix 8), i.e. development whic adversely affects high amenity and landscape quality in relation to their setting. For example, the environs of Newcastle House and Woods, particularly adjoining the River Inny Bridge.	Through the planning consent process.		This will be implemented by the Local authority and the NPWS.
24		ILW 12 Development in the broad zones of the major rivers and lakes of the County, as illustrated in Appendix 8, will not normally be permitted and shall be restricted to extensions of existing dwellings, which shall be sensitively designed in terms of the individual site and materials. Intensive agricultural developments shall not normally be permitted in these areas.	Through the planning consent process.		This will be implemented by the Local authority and the NPWS.

Mitigation Measures - Part B

List mitigation measures (Part A)	Provide evidence of the degree of confidence in their likely success	Provide timescale, relative to the project or plan, when they will be implemented	Explain the proposed monitoring scheme and how any mitigation failure will be adressed
1	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
2	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
3	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
4	Where budgets allow, the likelihood of success is good.	Unknown	The treatment works is routinely monitored on an ongoing basis.
5	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
6	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
7	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored on an ongoing basis. The local authority have powers of enforcement where failures occur.
8	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
9	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence whereby this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
10	Enforcement procedures will be used where non compliance with this objective is not achieved. The degree of confidence whereby this is likely to succeed is good.	On adoption of the Plan - March 2009	Monitored through ongoing review of compliance issues.

Mitigation Measures - Part B

List mitigation measures (Part A)	Provide evidence of the degree of confidence in their likely success	Provide timescale, relative to the project or plan, when they will be implemented	Explain the proposed monitoring scheme and how any mitigation failure will be adressed
11	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence whereby this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
12	The local authority have given an undertaking to comply with this objective, the degree of confidence whereby this is likely to be achieved is high.	On adoption of the Plan - March 2009	The specific recommendaitons are unclear at this stage but a full review will be undertaken once the recommendaitons are available.
13	The likely of this objective been achieved is good.	On adoption of the Plan - March 2009	The local authority will undertake habitat mapping of the county, finances permitting during the lifetime of the plan. This will allow for monitoring of this aspect of the plan.
14	The likely of this objective been achieved is good.	On adoption of the Plan - March 2009	The local authority will undertake habitat mapping of the county, finances permitting during the lifetime of the plan. This will allow for monitoring of this aspect of the plan.
15	The likely of this objective been achieved is good.	On adoption of the Plan - March 2009	The local authority will undertake habitat mapping of the county, finances permitting during the lifetime of the plan. This will allow for monitoring of this aspect of the plan.
16	The likely of this objective been achieved is good to high, the local authority will continue to work with the NPWS to achieve this objective.	On adoption of the Plan - March 2009	This is an ongoing commitment, no furhter monitoring required.
17	The likely of this objective been achieved is good.	On adoption of the Plan - March 2009	The local authority will undertake habitat mapping of the county, finances permitting during the lifetime of the plan. This will allow for monitoring of this aspect of the plan.
18	The likely of this objective been achieved is good.	On adoption of the Plan - March 2009	The local authority will undertake habitat mapping of the county, finances permitting during the lifetime of the plan. This will allow for monitoring of this aspect of the plan.
19	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
20	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
21	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.

Mitigation Measures - Part B

List mitigation measures (Part A)	Provide evidence of the degree of confidence in their likely success	Provide timescale, relative to the project or plan, when they will be implemented	Explain the proposed monitoring scheme and how any mitigation failure will be adressed
22	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
23	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.
24	The planning consent process allows for the control of development which may impact negatively on the resources within the county. The degree of confidence which this is likely to succeed is good -high.	On adoption of the Plan - March 2009	Monitored through the planning application process.

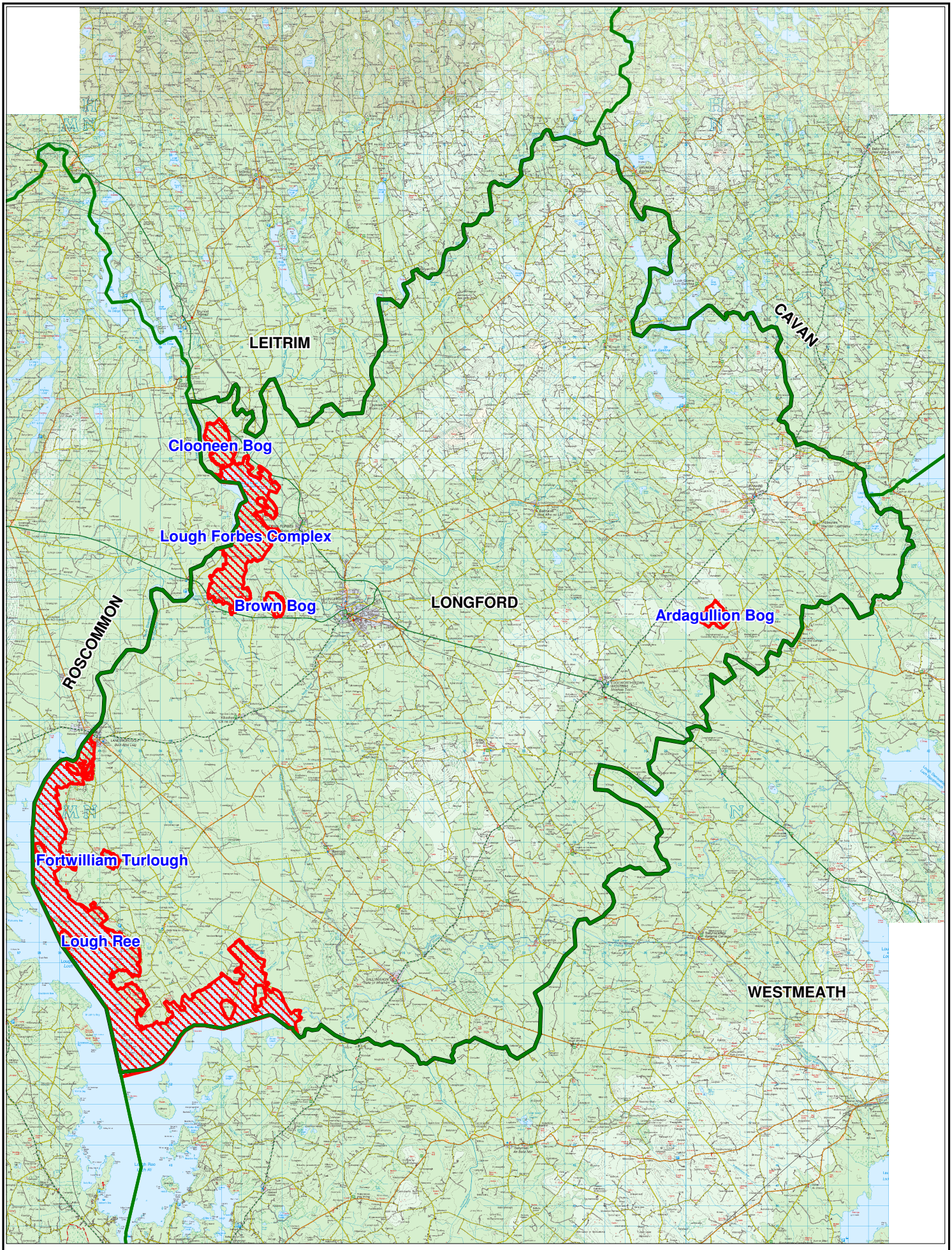

Figure 1: Distribution of Special Areas of Conservation within County Longford.

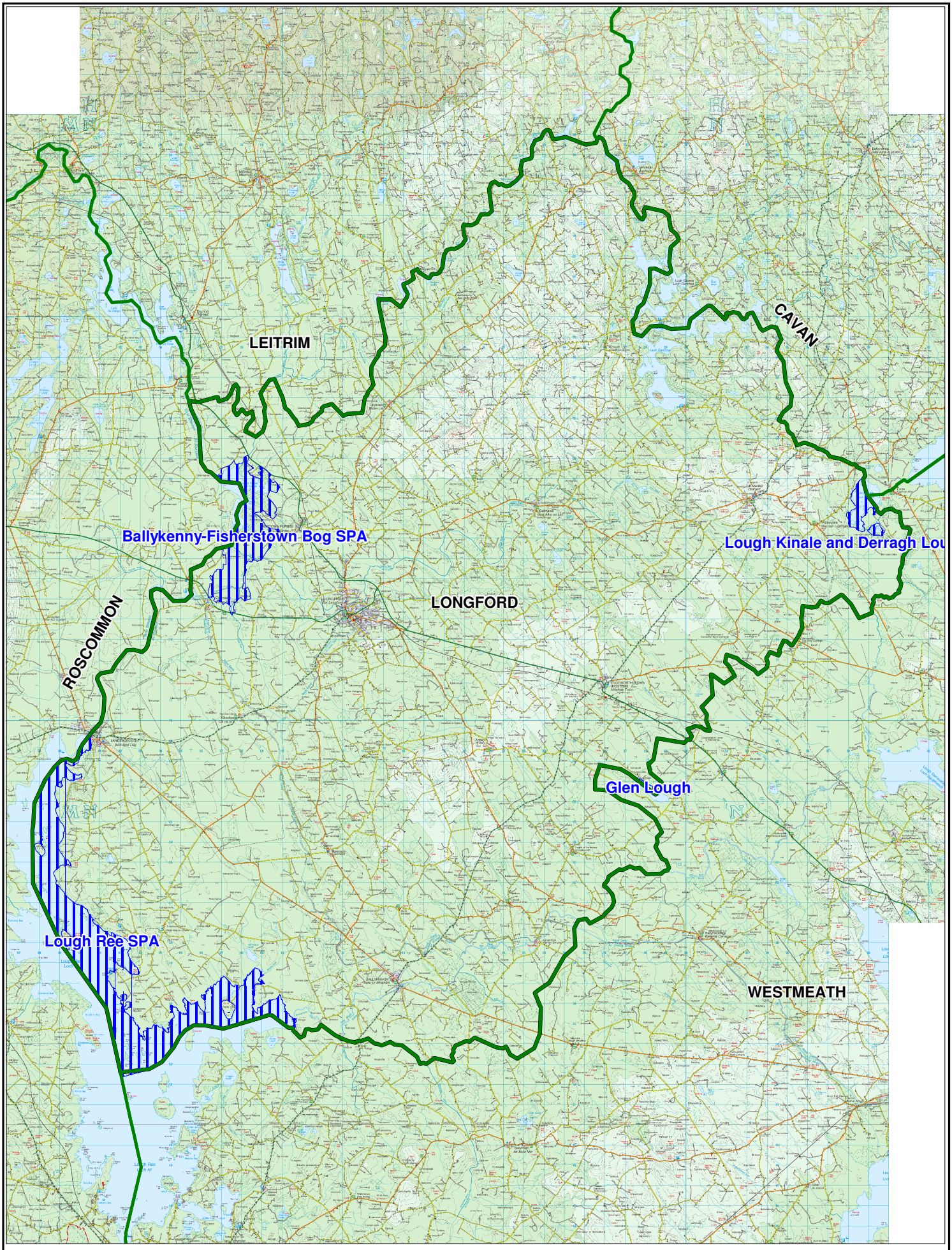

Figure 2: Distribution of Special Protection Areas within County Longford.

Appendices

Appendix 1

1. Description of the plan

The County Development Plan will be the new statutory plan for the sustainable development of County of Longford from 2009-2015 but excludes the urban area of Longford town, which is a separate planning authority. County Longford is located in the North Midlands of Ireland and is bounded by the counties of Roscommon, Leitrim, Cavan and Westmeath. The county covers an area of 1,091 km² (421 square miles). Most of Longford lies in the basin of the River Shannon, which forms its western boundary, mainly in the form of a large lake, Lough Ree, with the northeastern part of the county draining towards the River Erne. Much of Lough Gowna is also within the county boundary.

2. Description of the Natura 2000 sites

There are nine Natura 2000 sites situated within the development plan boundaries. These comprise of six Special Areas of Conservation (SACs) and four Special Protection Areas (SPAs). These include;

Lough Ree SAC

Lough Ree is the third largest lake in the Republic of Ireland and is situated, in an icedeepened depression in Carboniferous Limestone, on the River Shannon system between Lanesborough and Athlone. It has a very long, indented shoreline and hence has many sheltered bays. The site supports a number of rare plant species which are listed in the Irish Red Data Book, Alder Buckthorn (Frangula alnus) and Bird Cherry (Prunus padus) are woodland components at St. John's Wood and elsewhere. Narrow-leaved Helleborine (Cephalanthera longifolia) and Betony (Stachys officinalis), which is legally protected under The Flora Protection Order (1987), occur among the ground flora of Hare's Island (where the former occurs in notable abundance) and a number of other woods. The rare Myxomycete fungus, Echinostelium colliculosum, has also been recorded from St John's Wood. The lake itself contains one of only two populations of the endangered fish species, Pollan (Coregonus autumnalis), which is genetically different from Continental European stock. Lough Ree and its adjacent habitats are of major ecological significance.

Some of the woodlands around the lake are of excellent quality and include some of the best examples of this habitat in Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for ancient woodland in Ireland. The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

Fortwilliam Turlough SAC

Fortwilliam Turlough is situated close to the eastern shore of Lough Ree, 6 km south of Lanesborough, in County Longford. The surrounding countryside is flat, with a thin cover of drift. The central part of the turlough is marly and contains Shoreweed (Littorella uniflora), Various-leaved Pondweed (Potamogeton gramineus), Broad-leaved Pondweed (Potamogeton natans) and the moss, Scorpidium scorpioides, in the wetter parts, together with Lesser Water-plantain (Baldellia ranunculoides), Sedges (including Carex serotina) and Jointed Rush (Juncus articulatus). Fortwilliam is the only extant large turlough in Longford and one of only two east of the Shannon. It has a high diversity caused by a semi-permanent waterbody, abundant marl precipitation, a relative lack of grazing and small outcrops of limestone, so it is a very representative example of the habitat. The turlough basin seems intact, its basin and hydrology largely unmodified. Its oligotrophic status is valuable, as this feature is becoming rarer in the context of modern agriculture. Due to these factors, Fortwilliam Turlough is a site of considerable ecological value.

Lough Forbes Complex SAC

This site is composed of a complex of different adjacent habitats, each of which contributes in a different way to the overall value of the site as a whole. The site is centered around Lough Forbes, a lake formed by a broadening of the River Shannon, and a series of raised bogs, callows grassland and a variety of other aquatic and terrestrial habitats to the west of Newtown Forbes on the Longford/Roscommon boundary. Lough Forbes is a medium sized lake underlain by limestone. It has extensive Reed (Phragmites australis) swamps which provide good cover for wildfowl. The raised bogs, located on the south-eastern shore of Lough Forbes, are known as the Ballykenny-Fishertown complex. These bogs are of international importance as unique examples of Shannon River edge bogs and they are also the most northerly intact bogs adjacent to the River Shannon. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands.

The Lough Forbes area is also of national importance for its population of Greenland White-fronted Geese (240 maximum count, 1991/1992). Ireland hosts about 50% of the world population of this race of goose, and has international obligations to conserve it.

Ardagullion Bog SAC

Ardagullion Bog is located 5 km north-east of Edgeworthstown. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca), and at least some of the following associated species, Bog Asphodel (Narthecium ossifragum), Sundews (Drosera spp.), Deergrass (Scirpus cespitosus), Carnation Sedge (Carex panicea). Ardagullion Bog supports a good diversity of raised bog microhabitats, including hummocks and pools. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

Brown Bog SAC

Brown Bog NHA is located 5 km north-west of Longford Town mainly in the townlands of Tully, Lissanurlan and Cartronlebagh. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The site supports typical Midland Raised Bog communities, which include Ling Heather (Calluna vulgaris), Carnation Sedge, Bog-rosemary (Andromeda polifolia) and occasional Cranberry (Vaccinium oxycoccos). The high bog supports extensive quaking carpets of bog mosses including Sphagnum magellanicum, S. papillosum and S. capillifolium. Pools occur frequently and support Sphagnum auriculatum, Bogbean (Menyanthes trifoliata) and Great Sundew (Drosera anglica). Hummocks of Sphagnum imbricatum and S. fuscum occur. In the northwest old deciduous woodland with Downy Birch, Scots Pine, Rowan (Sorbus accuparia) is found.

The site supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site. Ireland has a high proportion of the E.U. resource of active Raised Bog (over 60%) and so has a special responsibility for its conservation at an international level.

Clooneen Bog SAC

Clooneen Bog lies approximately 3 km south-east of Roosky in Co. Longford on the east bank of the River Shannon, just north of Lough Forbes. The site is a candidate Special Area of Conservation selected for bog woodland, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca).The open bog woodland is dominated by lichen encrusted Downy Birch (Betula pubescens) with a field layer of Purple Moor-grass (Molinia caerulea) and Hare's-tail Cotton-grass (Eriophorum vaginatum) with ericaceous shrubs such as Ling Heather, Crowberry (Empetrum nigrum), Bog-myrtle (Myrica gale) and Bilberry (Vaccinium myrtillus). There are also several ferns present including Hard Fern (Blechnum spicant) and Broad Buckler-fern (Dryopteris dilatata).

There is some active regeneration in the north-east with Cottongrass dominating over bog moss (S. cuspidatum). Clooneen Bog is a site of considerable conservation significance comprising as it does a raised bog and bog woodland, rare habitats within the E.U.

Lough Kinale and Derragh Lough SPA

Lough Kinale is a relatively small lake that is situated immediately downstream of Lough Sheelin, both lakes being near the top of the catchment of the Inny River, a main tributary of the River Shannon. Derragh Lough, a much smaller system, is connected to Lough Kinale and the Inny River. This is a typical limestone system and is very shallow (maximum depth of Lough Kinale is c. 4 m). A calcium rich small sedge marsh occurs along parts of the shoreline characterised by species such as Longstalked Yellow-sedge (Carex lepidocarpa) and Water Mint (Mentha aquatica). Lough Kinale and Derragh Lough remains an important site for wintering waterfowl, especially diving duck. The site supports nationally important populations of Pochard (951) and Tufted Duck (449) – figures are average peaks for the 5 seasons 1995/96-1999/00. A large population of Mute Swan (120), close to the threshold for national importance, also uses the site.

A number of other species are found, in relatively low numbers, including Great Crested Grebe (25), Mallard (130) and Goldeneye (22). Whilst relatively small in area and subject to a number of damaging activities, this site retains national importance for two duck species. With an improvement in the environmental conditions pertaining at the site, higher numbers of some species would undoubtedly occur.

Lough Ree SPA

Situated on the River Shannon between Lanesborough and Athlone, Lough Ree lies in an ice-deepened depression in Carboniferous Limestone. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Wigeon (1,475), Teal (912), Pintail (35), Tufted Duck (661), Goldeneye (137), Golden Plover (2,035) and Lapwing (3,870) occurring – all figures are average peaks for the 5 seasons 1995/96-1999/00. Regionally important numbers of Whooper Swan (89) and Greenland White-fronted Goose (92) are found feeding in the vicinity of the lake. Other species which occur in winter include Cormorant (64), Mallard (675), Coot (250), Shoveler (40), Curlew (167) and Great Crested Grebe (23), as well as the resident Little Grebe (34) and Mute Swan (93).

The site supports a nationally important population of Common Tern (90 pairs in 1990). Lough Ree is an important site for breeding duck and grebes, with Tufted Duck (265 individuals in late May 1995) and Great Crested Grebe (89 individuals in late May 1995) having populations of national importance. Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. The most recent full census of the site for the species (in 1999) gave a population of c. 32 pairs. The woodland around the lake is also a stronghold for Garden Warbler.

Ballykenny-Fishertown Bog SPA

Ballykenny-Fisherstown Bog SPA is situated in the north-central midlands and is underlain by Carboniferous limestone. It is centered around Lough Forbes, a naturally eutrophic lake on the River Shannon system which is fed also from the north by the River Rinn. The lake has well-developed swamp vegetation and displays natural transitions to seasonally flooded grassland, marsh and raised bog. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. The lake and callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers. Counts in two of the winters in the 1995/96 to 1999/00 period are as follows: Cormorant 51, Whooper Swan 40, Wigeon 419, Teal 444, Shoveler 6, Tufted Duck 49 and Goldeneye 11. Merlin has been recorded within the site and may nest. Red Grouse are known from the bogs. The site is of ornithological importance for its wintering waterfowl, breeding Merlin and Red Grouse. The presence of Whooper Swans and Merlin is also of particular note. Red Grouse is a Red listed species in Ireland as it has declined in numbers in recent decades.

Glen Lough SPA

Glen Lough is situated about 5 km north-west of Lough Iron, to which it is connected by the Black River. An internationally important Whooper Swan population uses the site at times. This flock (average peak of 272 individuals for the 5 seasons 1995/96-1999/00) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (85), Teal (75), Mallard 46), Pintail (7) and Shoveler (23). Lapwing (189) are also found in the area. Whilst this site attracts a range of wintering waterfowl, the principal interest is the internationally important Whooper Swan population that is based in the area. Whooper Swan is of particular note as it is listed on Annex I of the E.U. Birds Directive. Greenland White-fronted Goose, nowadays an occasional visitor to the site, is also listed on Annex

Assessment Criteria

3. Individual elements of the Plan (either alone or in combination with other plans or projects) likely to give rise to impacts on Natura 2000 sites

The Longford County Development Plan 2009-2015 provides the strategy for ongoing development of the Longford County. The Plan will be the guiding document for future development within the county over the coming 6 year period. The Plan in broad terms seeks to achieve the sustainable development of the County over the plan period, with equal emphasis on economic and social development as well as environmental protection.

In order to achieve this the Plan sets out a series of policies and objectives relating to all types of economic and socail development as well as specific policies and objectives relating to the protection and conservation of natural resources. To this end the Development Plan seeks to protect vulnerable habitats, water resources, views, landscapes and historic features.

4. Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:

▪ Size and scale; ▪ Land-take; ▪ Distance from Natura 2000 site or key features of the site; ▪ Resource requirements; ▪ Emissions; ▪ Excavation requirements; ▪ Transportation requirements; ▪ Duration of construction, operation etc.; ▪ Others	As stated the Plan contains specific policy in regard to the protection of the environment, however without strict adherence to the mitigation policies and objectives for both biodiversity and water quality, there are potential impacts on Natura 2000 sites. The potential exists for adverse short to medium to long term impacts, both directly and indirectly on the vulnerable and protected habitats within the county. However for this to occur would ultimately represent uncontrolled development which is contrary to the stated aims of the local authority. All development requiring planning permission will be assessed in terms of its environmental impact and against the tenets of the Development Plan. Thus the plan will guide development with careful consideration given to the sustainable development of the County. Development considered contrary to the aims of the plan or deemed inappropriate in terms of siting, size, emissions etc will not be permitted.

5. Describe any likely changes to the site arising as a result of:

▪ Reduction of habitat area; ▪ Disturbance of key species; ▪ Habitat or species fragmentation; ▪ Reduction in species density; ▪ Changes in key indicators of conservation value; ▪ Climate change.	Longford County Council is not in ownership of Natura 2000 sites present in the County as these are largely state or privately owned. Thus the role of the local authority is to control new development which is achievable through the implementation of the Development Plan. Thus the Plan will in so far as it possibly can seek to ensure that the habitats present in the County are maintained, that the areas are not reduced, that key species present are not unduly disturbed, that fragmentation of both the habitats and/or species does not result through the actions of the local authority; that no reduction is species density occurs and finally that the key indicators of conservation value are and remain unaltered.

6. Describe ant likely impacts on the Natura 2000 site as a whole in terms of:

▪ Interference with the key relationships that define the structure of the site ▪ Interference with the key relationships that define the function of the site	Without strict adherence to the mitigation policies and objectives for both biodiversity and water, there are the following potential impacts on Natura 2000 sites. Development control issues are discussed above, however as the consent authority the Council has direct influence on the management of water discharges either through local authority operated facilities or through the control of privately operated systems such as septic tanks or group proprietary systems. Thus their is, if not propoerly controlled or monitroed a potential to impact on water quality through excess discharges of effluent material.

7. Provide indicators of significance as a result of the identification of effects set out above in terms of:

▪ Loss; ▪ Fragmentation; ▪ Disruption; ▪ Disturbance; ▪ Change to key elements of the site.	Without strict adherence to the mitigation policies and objectives for both biodiversity and water quality there is a potential to adversely impact on the Natura 2000 sites through disruption, fargmentaiton or changes to the key elements of the site. Such indicators should include water quality indices, WWTP discharge monitoring etc.

8. Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale of magnitude of impacts is not known.

The Council will control physical development within and close to Natura 2000 sites through the planning process. Thus direct impacts on these sites will be avoided. However, the local authority may indirectly and negatively impact on such sites through the discharge of effluent from municipal and proprietary waste water treatment systems, therfore it is concluded that a potential to impact negatively does exist and an Approprite Assesment should be undertaken.

Appendix 2

Note: the site descriptions used in this section of the assessment have been obtained from the National Parks and Wildlife website (www.NPWS.ie).

Special Areas of Conservation

Lough Ree - Site Code: 000440
Lough Ree is the third largest lake in the Republic of Ireland and is situated, in an ice deepened depression in Carboniferous Limestone, on the River Shannon system between Lanesborough and Athlone. The portion of Lough Ree within County Longford extends to some 4,330 hectares and stretches over 17 km from Lanesboro in the north to the southern county boundary. Some of its features (including the islands) are based on glacial drift. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi-aquatic habitats also occur.

The greater part of Lough Ree is less than 10m in depth. but there are six deep troughs running from north to south, reaching a maximum depth of about 36m just west of Inchmore. The lake has been classified as mesotrophic in quality, but the size of the system means that a range of conditions prevail depending on, for example, rock type.

This gives rise to local variations in nutrient status and pH, which in turn result in variations in the phytoplankton and macrophyte flora, and species indicative of oligotrophic, mesotrophic, eutrophic and base-rich situations occur. The water of Lough Ree tends to be strongly peat-stained, restricting macrophytes to depths of less than 2m, and as a consequence, macrophytes are restricted to sheltered bays, where a typical Shannon flora occurs. Species present include Intermediate Bladderwort (*Utricularia intermedia*), Pondweeds (*Potamogeton* spp.), Quillwort (*Isoetes lacustris*), Greater Duckweed (*Spirodela polyrhiza*), Stoneworts (*Chara* spp., including *C. pedunculata*) and Arrowhead (*Sagittaria sagittifolia*). The latter is a scarce species which is almost confined in its occurrence to the Shannon Basin.

Reedbeds of Common Reed (*Phragmites australis*) are an extensive habitat in a number of more sheltered places around the lake, but single-species 'swamps' consisting of such species as Common Club-rush (*Scirpus lacustris*), Slender Sedge (*Carex lasiocarpa*), Saw Sedge (*Cladium mariscus*) and two scarce species of Sedge (*Carex appropinquata* and *C. elata*) also occur in suitable places. Some of these grade up into species-rich calcareous fen with Black Bog-rush (*Schoenus nigricans*) and Whorl-grass (*Catabrosa aquatica*), or freshwater marsh with abundant Water Dock (*Rumex hydrolapathum*) and Hemp-agrimony (*Eupatorium cannabinum*).

Lowland wet grassland is found in abundance around the shore and occurs in two types. One is 'callowland', grassland which floods in winter. This provides feeding for winter waterfowl and breeding waders. The other is an unusual community on stony wet lakeshore all around the lake, and is characterized by Water Germander (*Teucrium scordium*), a scarce plant species almost confined to this lake and Lough Derg.

Dry calcareous grassland occurs scattered around the lake shore. This supports typical species such as Yellow-wort (*Blackstonia perfoliata*), Carline Thistle (*Carlina vulgaris*) and Quaking Grass (*Briza media*). Orchids also feature in this habitat e.g. Bee Orchid (*Ophrys apifera*) and Common Spotted-orchid (*Dactylorhiza fuchsia*). Dry, broad-leaved, semi-natural woodland occurs in several places around the lake, most notably at St John's Wood and on Hare Island. St John's Wood is recognised as the largest and most natural woodland in the Midlands. Its canopy is dominated by Hazel (*Corylus avellana*), Pedunculate Oak (*Quercus robur*), Holly (*Ilex aquifolium*) and Ash (*Fraxinus excelsior*), but a range of other trees and shrubs occur, including Wych Elm (*Ulmus glabra*), Yew (*Taxus baccata*), Wild Cherry (*Prunus avium*) and Irish Whitebeam (*Sorbus hibernica*). The ground flora of St. John's Wood is species rich, and is remarkable for the presence of two species, Toothwort (*Lathraea squamaria*) and Bird's-nest Orchid (*Neottia nidus-avis*), which tend to occur in sites with a long history of uninterrupted woodland cover. The tree species composition on Hare Island is similar to that in St. John's Wood, with additional non-

native species such as Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*). This wood also has an exceptionally rich ground flora. Some of the smaller areas of woodland around Lough Ree are mixed woodland with a high percentage of exotics such as Beech. Some areas of well-developed Hazel scrub also occur.

Pockets of wet woodland occur around the lake: most of these are dominated by Willows (*Salix* spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*). In one such wood, at Ross Lough, the terrestrial alga, *Trentopohlia* spp, has a specialised niche on the Willow trunks, while the ground layer has a rich bryophyte flora (*Calliergon* spp. and *Sphagnum* spp.), scattered clumps of Greater Tussocksedge (*Carex paniculata*) and a good diversity of herb species, including Water Dock (*Rumex hydrolapathum*) and Fen Bedstraw (*Galium uliginosum*).

Small examples of raised bog occur, which are of interest in that they show a natural transition through wet woodland and/or swamp to lakeshore habitats. A good example of bog woodland occurs at St. John's Wood. This grows on cutaway peat and is dominated by Birch (*Betula pubescens*) and Alder Buckthorn (*Frangula alnus*). The occurrence of the latter species in such abundance is unusual in Ireland. Other examples of bog woodland occur scattered around the site. Bog woodland is of particular conservation importance and is listed with priority status on the EU Habitats Directive. Smaller lakes occur around the lakeshore, especially on the east side, and these often have the full range of wetland habitats contained within them. A number of small rivers pass through the site.

The site supports a number of rare plant species which are listed in the Irish Red Data Book, Alder Buckthorn (*Frangula alnus*) and Bird Cherry (*Prunus padus*) are woodland components at St. John's Wood and elsewhere. Narrow-leaved Helleborine (*Cephalanthera longifolia*) and Betony (*Stachys officinalis*), which is legally protected under The Flora Protection Order (1987), occur among the ground flora of Hare's Island (where the former occurs in notable abundance) and a number of other woodsThe rare Myxomycete fungus, *Echinostelium colliculosum,* has also been recorded from St John's Wood.

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

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

The woodlands and scrub around the lake and on the islands are a stronghold of the Garden Warbler (74 territories in 1997), a bird species mainly confined to the Shannon Lakes in Ireland. There is a population of Otters around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the European Habitats Directive.

Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent quality and include some of the best examples of this habitat in

Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for ancient woodland in Ireland. The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

Fortwilliam Turlough - Site Code: 000448
Fortwilliam Turlough is situated close to the eastern shore of Lough Ree, 6 km south of Lanesborough, in County Longford. The site extends to over 50 ha. Turloughs are temporary lakes that occur in depressions in limestone areas where water levels fluctuate throughout the year. They are considered of high importance due to their plant, invertebrate (terrestrial and aquatic) and bird communities. Turloughs are virtually to Ireland and the largest concentrations occur in County's Clare, Galway and Roscommon.

The surrounding countryside is flat, with a thin cover of drift. The floor of the basin is at two levels, a lower central area with several lakes and ponds and a higher surrounding area of till with scattered rocks, extending north-westwards into flat fields and woodland. There is a little surface flow into the basin and floodwater appears to be strongly calcareous.

The central part of the turlough is marly and contains Shoreweed (*Littorella uniflora*), Various-leaved Pondweed (*Potamogeton gramineus*), Broad-leaved Pondweed (*Potamogeton natans*) and the moss, *Scorpidium scorpioides*, in the wetter parts, together with Lesser Water-plantain (*Baldellia ranunculoides*), Sedges (including *Carex serotina*) and Jointed Rush (*Juncus articulatus*). At the southern end, the wettest areas support stands of Common Club-rush (*Scirpus lacustris*), with Greater Spearwort (*Ranunculus lingua*) and Mare's-tail (*Hippuris vulgaris*), and occasional patches of Amphibious Bistort (*Polygonum amphibium*). Slightly drier areas support a community dominated by Common Sedge (*Carex nigra*), Creeping Cinquefoil (*Potentilla reptans*) and abundant Adder's-tongue (*Ophioglossum vulgatum*).

Towards the turlough margin is a broad band of heath in the south and west. A calcareous influence is evident in the presence of Black Bog-rush (*Schoenus nigricans*), with Eyebright (*Euphrasia micrantha*), Tormentil (*Potentilla erecta*), Creeping Cinquefoil (*Potentilla reptans*) and Sneezewort (*Achillea ptarmica*). Tall herbs occur in places, including Meadowsweet (*Filipendula ulmaria*), Tall Fescue (*Festuca arundinacea*), Agrimony (*Agrimonia eupatorium*) and Vetches (*Vicia cracca* and *Lathyrus pratensis*). This community merges into a Blackthorn (*Prunus spinosa*) and Hawthorn (*Crataegus monogyna*) scrub, which has adjacent woodland consisting of Ash (*Fraxinus excelsior*) and Elder (*Sambucus nigra*). Snipe and Mallard nest in the area.

Fortwilliam is the only extant large turlough in Longford and one of only two east of the Shannon. Turloughs are virtually to Ireland and the largest concentrations occur in County's Clare, Galway and Roscommon. It has a high diversity caused by a semi-permanent waterbody, abundant marl precipitation, a relative lack of grazing and small outcrops of limestone, so it is a very representative example of the habitat. The turlough basin seems intact, its basin and hydrology largely unmodified. Its oligotrophic status is valuable, as this feature is becoming rarer in the context of modern agriculture. Due to these factors, Fortwilliam Turlough is a site of considerable ecological value.

Lough Forbes Complex - Site Code: 001818
The Lough forbes complex extends to some 1,175 ha within the County and is located 1 km west of Newtown Forbes and 4.7km west of Longford town. Part of the N4 forms a section of its northern boundary, while a section of the N5 forms its southern boundary.

This site is composed of a complex of different adjacent habitats, each of which contributes in a different way to the overall value of the site as a whole. The site is centered around Lough Forbes, a lake formed by a broadening of the River Shannon, and a series of raised bogs,

callows grassland and a variety of other aquatic and terrestrial habitats to the west of Newtown Forbes on the Longford/Roscommon boundary.

Lough Forbes is a medium sized lake underlain by limestone. It has extensive Reed (*Phragmites australis*) swamps which provides good cover for wildfowl although numbers have declined in recent times, likely due to the increase in cruisers and other pleasure boats. Freshwater marshes are also a common feature along the lakeshore.

These areas contain a good diversity of aquatic and emergent vegetation comprising of sedges (*Carex vesicaria, C. rostrata* and *C. acuta*), Bogbean (*Menyanthes trifoliata*), Spike-rush (*Eleocharis palustris*), Fine-leaved Water Dropwort (*Oenanthe aquatica*), Water Plantain (*Alisma plantago-aquatica*), Cowbane (*Cicuta virosa*), Common Club-rush (*Scirpus lacustris*) and Reed Canary-grass (*Phalaris arundinacea*).

The raised bogs, located on the south-eastern shore of Lough Forbes, are known as the Ballykenny-Fishertown complex. These bogs are of international importance as unique examples of Shannon River edge bogs and they are also the most northerly intact bogs adjacent to the River Shannon. The central core areas of the bogs are quite wet and spongy with a good complement of Bog Mosses (*Sphagnum* spp.) and well developed hummocks.

Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. Between the Camlin River and this bog, a complete transition from raised bog to callow grasslands can be seen, while the interface between the bog and lake is colonised by a narrow band of deciduous woodland.

Within this site, there are also several areas of mixed deciduous woodland such as Castlewood Desmesne which is an excellent example of an old planted estate woodland. Here a closed canopy with a good mixed age structure, a good diversity of species and abundant regeneration of native trees has developed.

The canopy is comprised of abundant Oak (*Quercus* spp.), frequent Yew (*Taxus baccata*), Downy Birch (*Betula pubescens*), occasional Horse Chestnut (*Aesculus hippocastanum*), Ash (*Fraxinus excelsior*), Elm (*Ulmus glabra*) and occasional stands of conifers. Holly (*Ilex aquifolium*) and Rowan (*Sorbus aucuparia*) are frequent in the shrub layer.

Areas of callows (winter-flooded grassland) along the Camlin River are also included. Like the internationally important Shannon Callows, these wet grasslands are included for their botanical interest as well as for the waterbirds that they support.

The Lough Forbes area is also of national importance for its population of Greenland White-fronted Geese (240 maximum count, 1991/1992). Ireland hosts about 50% of the world population of this race of goose, and has international obligations to conserve it.

The importance of the Lough Forbes site lies in its excellent diversity of habitats, some of which, as in the case of raised bogs, are rare and threatened. Rasied bogs have decreased by over 35% in Ireland over the past 10 years alone. It also hosts several species of interest, in particular, a nationally important population of Greenland White-fronted Geese, which are an internationally important and legally protected species.

Ardagullion Bog - Site Code: 002341
Ardaguillion Bog is located 5 km north-east of Edgeworthstown, mainly in the townlands of Cloonshannagh (Coolamber Manor Demesne) and Ardaguillon in Co. Longford. It extends to almost 117 ha. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is bounded in the north-east by the local road running to Coolagherty.

The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks.

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

This site is the remnant of a much larger bog that is now cutover and afforested. There are areas of hummocks and pools in the centre of the high bog and the ground is wet and quaking. There is one flush in the centre of the high bog. There is a small area of coniferous forestry on a section of high bog and cutover in the south-west of the site. Cutover is found all around this site.

Much of the high bog has vegetation typical of a Midland Raised Bog, consisting of Ling Heather (*Calluna vulgaris*), Cranberry (*Vaccinium oxycoccos*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), White Beak-sedge, Bog Asphodel and Bogrosemary (*Andromeda polifolia*). The bog mosses *Sphagnum papillosum*, *S. capillifolium* and *S. magellanicum* are common on the high bog and *S. imbricatum* is found at the centre of the site. At the centre of the high bog there are frequent pools that all contain the bog moss *S. cuspidatum*. Great Sundew (*Drosera anglica*) is found in all the pools in the centre of the bog and Bogbean (*Menyanthes trifoliata*) is present in some. The inter-pool areas have a high bog moss cover. Many hummocks have good clumps of the lichens *Cladonia portentosa* and *C. uncialis*. On the southwest margins of the high bog there are some young Lodgepole Pine (*Pinus contorta*) but none are thriving. There is one very wet flush in the centre of the high bog with Common Cottongrass (*E. angustifolium*), extensive lawns of the bog moss *S. cuspidatum* and some Purple Moor-grass (*Molinia caerulea*). The cutover in the north-west, east and south-east is dominated by Purple Moor Grass, Soft Rush (*Juncus effusus*) and Common Cottongrass. There is some Gorse (*Ulex europaeus*) scrub in the east of the site and extensive Downy Birch (*Betula pubescens*) scrub in the south-east.

Ardagullion Bog is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. The site supports a good diversity of raised bog microhabitats, including hummocks and pools. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

Brown Bog - Site Code: 002346

Brown Bog NHA is located 5 km north-west of Longford Town mainly in the townlands of Tully, Lissanurlan and Cartronlebagh and extends to 76 ha. It is just 0.7 km from the Lough forbes Complex. The site comprises a raised bog that includes both areas of high bog and cutover. The bog margins are mainly surrounded by scrub/woodland.

The site is a Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks.

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

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

Brown Bog is a site of considerable conservation significance comprising as it does a raised bog (Annex 1 of the Habitats Directive), a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. Although the site is small it supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site.

Clooneen Bog - Site Code: 002348

Clooneen Bog adjoins the Lough forbes Complex and extends to 214 ha. It is situated 4.6 km northwest of Newtown Forbes and is partly bounded by the N4. It is located almost entirely in the townlands of Clooneen, Bunanass, Edercloon and Cloonart (North and South). The site comprises areas of high bog, including bog woodland and cutover bog and is bounded by a mineral ridge to the east and agricultural fields to the north.

Although it would have originally adjoined the River Shannon to the west and Lough Forbes to the south, it is now separated from these by a road and agricultural fields. The site is a candidate Special Area of Conservation selected for bog woodland, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive.

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

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

The open bog woodland is dominated by lichen encrusted Downy Birch (*Betula pubescens*) with a field layer of Purple Moor-grass (*Molinia caerulea*) and Hare's-tail Cotton-grass (*Eriophorum vaginatum*) with ericaceous shrubs such as Ling Heather, Crowberry (*Empetrum nigrum*), Bog-myrtle (*Myrica gale*) and Bilberry (*Vaccinium myrtillus*). Mosses such as *Hylocomium splendens* and *Breutelia chrysocoma* are also abundant. Species such as *Sphagnum recurvum*, *S. imbricatum* and *S. palustre* are less common. There are also several ferns present including Hard Fern (*Blechnum spicant*) and Broad Buckler-fern (*Dryopteris dilatata*). The flush to the south-east is dominated by Purple Moor-grass and may be associated with an area that has subsided. There are occasional clumps of Bog-myrtle with some small Rhododendron (*Rhododendron ponticum*) bushes encroaching. Common Reed (*Phragmites australis*) is associated with this flush, indicating some groundwater influence.

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

Clooneen Bog is a site of considerable conservation significance comprising as it contains a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland.

Special Protection Areas

Lough Kinale And Derragh Lough SPA - Site Code: 0004061
Lough Kinale is a relatively small lake (176 ha) that is situated immediately downstream of Lough Sheelin, both lakes being near the top of the catchment of the Inny River, a main tributary of the River Shannon. Derragh Lough, a much smaller system (32 ha), is connected to Lough Kinale and the Inny River. They are approximately 1.6 km east of Abbeylara and 4.7 km east of Granard.

This is a typical limestone system and is very shallow (maximum depth of Lough Kinale is *c.* 4 m). As with Lough Sheelin, the trophic status of the lake has varied greatly since the 1970s due to pollution. It was recently (1998-2000) classified as a highly eutrophic system. The lake was formerly an important Trout fishery.

Lough Kinale has two main basins, almost separated by swamp formations. Reed swamp is frequent around the lakes, with Common Reed (*Phragmites australis*) and Tufted-sedge (*Carex elata*) occurring commonly. A calcium-rich small sedge marsh occurs along parts of the shoreline. This is characterised by species such as Longstalked Yellow-sedge (*Carex lepidocarpa*), Marsh Pimpernel (*Anagallis tenella*), Knotted Pearlwort (*Sagina nodosa*), Marsh Pennywort (*Hydrocotyle vulgaris*) and Water Mint (*Mentha aquatica*). Areas of bog occur around the margins of the lakes in places but some of these have been planted with conifers. Despite the very variable water quality in recent decades, Lough Kinale and Derragh Lough remain an important site for wintering waterfowl, especially diving duck. The site supports nationally important populations of two species, i.e. Pochard (951) and Tufted Duck (449) – figures are average peaks for the 5 seasons 1995/96-1999/00. A large population of Mute Swan (120), close to the threshold for national importance, also uses the site. Coot (199), whilst still occurring in substantial numbers, formerly had a population of national importance. A number of other species are found, in relatively low numbers, including Great Crested Grebe (25), Mallard (130) and Goldeneye (22). Marginal grassland areas outside of the site attract feeding wildfowl and waders such as Lapwing and Golden Plover.

Whilst relatively small in area and subject to a number of damaging activities, this site retains national importance for two duck species. With an improvement in the environmental conditions pertaining at the site, higher numbers of some species would undoubtedly occur.

Lough Ree SPA - Site Code: 004064 – see also SAC section
Situated on the River Shannon between Lanesborough and Athlone, Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. Some of its features (including the islands) are based on glacial drift. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon.

The waters of Lough Ree tend to be strongly peat-stained, restricting macrophytes to depths of less than 2 m. The aquatic flora includes such species as Intermediate Bladderwort (*Utricularia intermedia*), pondweeds (*Potamogeton* spp.), Quillwort (*Isoetes lacustris*), stoneworts (*Chara* spp., including *C. pedunculata*) and Arrowhead (*Sagittaria sagittifolia*). Beds of Common Reed (*Phragmites australis*) are an extensive habitat in a number of the more sheltered places around the lake; monodominant stands of Common Club-rush (*Scirpus lacustris*), Slender Sedge (*Carex lasiocarpa*) and Saw Sedge (*Cladium mariscus*) also occur as swamps in suitable places. Some of these grade into species-rich calcareous fen or freshwater marsh. Lowland wet grassland, some of which floods in winter, occurs frequently around the shore. Dry, broad-leaved, semi-natural woodland occurs in several places around the lake, and on some of the islands within the site, notably on Hare Island.

Pockets of wet woodland also occur around the lake, most of which are dominated by willows (*Salix* spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*). Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Wigeon (1,475), Teal (912), Pintail (35), Tufted Duck (661), Goldeneye (137), Golden Plover (2,035) and Lapwing (3,870) occurring – all figures are average peaks for the 5 seasons 1995/96-1999/00. Regionally important numbers of Whooper Swan (89) and Greenland White-fronted Goose (92) are found feeding in the vicinity of the lake, as are Golden Plover, Lapwing and, to some extent, Wigeon and Teal. Other species which occur in winter include Cormorant (64), Mallard (675), Coot (250), Shoveler (40), Curlew (167) and Great Crested Grebe (23), as well as the resident Little Grebe (34) and Mute Swan (93).

The site supports a nationally important population of Common Tern (90 pairs in 1990). It is a traditional breeding site for Black-headed Gull and whilst a full survey has not been carried out in recent years, substantial numbers of nesting birds were present on at least one island in 2003. Lesser Black-backed Gull and Common Gull have bred in the past and may still breed. Lough Ree is an important site for breeding duck and grebes, with Tufted Duck (265 individuals in late May 1995) and Great Crested Grebe (89 individuals in late May 1995) having populations of national importance. Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. The most recent full census of the site for the species (in 1999) gave a population of *c*. 32 pairs. The woodland around the lake is a stronghold for Garden Warbler and this scarce species probably occurs on some of the islands within the site.

Otter, a species listed on Annex II of the E.U. Habitats Directive occurs frequently within the site. The endangered, Red Data Book fish species, Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Ree, one of only four sites (L. Neagh, L. Erne, L. Ree and L. Derg) in which it occurs. The shrimp, *Mysis relicta*, occurs in the lake and is a relic of the glacial period in Ireland.

Lough Ree is of high ornithological importance for both wintering and breeding birds. It supports nationally important populations of seven wintering waterfowl species, as well as other important species including Whooper Swan and Greenland Whitefronted Goose (both of which are listed on Annex I of E.U. Birds Directive). The site has a range of breeding waterfowl, notably nationally important populations of Common Scoter, Great Crested Grebe and Tufted Duck. It also has a colony of Common Tern, another species listed on Annex I of the E.U. Birds Directive.

Ballykenny-Fishertown Bog SPA - Site Code: 004101
This site extends to 1,191 ha and is bounded to the west by the county boundary and is 1 km east of Newtown Forbes. It is centered around Lough Forbes, a naturally eutrophic lake on the River Shannon system which is fed also from the north by the River Rinn. The lake has well-developed swamp vegetation and displays natural transitions to seasonally flooded grassland, marsh and raised bog. Common Reed (*Phragmites australis*) is a dominant species around the lake, and occurs along with other swamp species such as Common Club-rush (*Scirpus lacustris*) and Reed Canary-grass (*Phalaris arundinacea*). The raised bogs, known as the Ballykenny-Fishertown complex, are separated by the Camlin River, which has further areas of callow grassland. The central core areas of the bogs are quite wet with a good complement of bog mosses (*Sphagnum* spp.) and well-developed hummocks.

Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. Between the Camlin River and this bog, a complete transition from raised bog to callow grasslands can be seen, while the interface between the bog and lake is colonised by a narrow band of deciduous woodland. The Castle Forbes estate on the eastern shore of the lake is extensively planted with mature semi-natural woodland, including some stands of old Oak (*Quercus* spp.).

The lake and callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers. Counts in two of the winters in the 1995/96 to 1999/00 period are as follows: Cormorant 51, Whooper Swan 40, Wigeon 419, Teal 444, Shoveler 6, Tufted Duck 49 and Goldeneye 11. The bogs were formerly used by part of the Loughs Kilglass and Forbes population of wintering Greenland White-fronted Geese but these appear to have been now abandoned in favour of grassland sites elsewhere. Merlin has been recorded within the site and may nest here also. Red Grouse are known from the bogs.

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

The site is of ornithological importance for its wintering waterfowl, breeding Merlin and Red Grouse. The presence of Whooper Swans and Merlin is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Red Grouse is a Red listed species in Ireland as it has declined in numbers in recent decades.

Glen Lough SPA - Site Code: 004045
Only approximately one quarter of Glen Lough is located within the county extending to approximately 25 ha. It is 5 km south of Edgeworthstown and about 5 km north-west of Lough Iron, to which it is connected by the Black River. Extensive drainage in the 1960s has resulted in a dramatic drop in the watertable here, with the result that there is now little open water, except during flooding in the winter months. Sedge-dominated freshwater marsh now occupies the majority of what was once open water. Plant species present include Bottle Sedge (Carex rostrata), Water Horsetail (Equisetium fluviatile) and Canary Reed-grass (Phalaris arundinacea). Other habitats present include reedswamp, wet and dry grassland, cutaway bog colonised by heath vegetation, scrub and wet willow (Salix spp.) woodland.

An internationally important Whooper Swan population uses the site at times. This flock (average peak of 272 individuals for the 5 seasons 1995/96-1999/00) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (85), Teal (75), Mallard 46), Pintail (7) and Shoveler (23). Lapwing (189) are also found in the area.

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

Appendix 3

Appendix 3: Assessment Report

Appropriate Assessment Report

Assessment of the likely effects of the plan on the integrity of the site

The County Development Plan will be the new statutory plan for the County of Longford for 2009-2015 but excludes the urban area of Longford town, which is a separate planning authority. This plan, once adopted will supersede the previous plan 2003 – 2009.

The plan has two main purposes, firstly to provide a framework of acceptable uses within the County, defining acceptable forms of development and where it should be directed and secondly to provide a detailed basis for the promotion and control of development. The County Development Plan is therefore the guiding document for development within the county over the next 6 years. A potential exists to adversely impact on Natura 2000 sites through inappropriate development either within or close to designated sites.

Such development either in isolation or in combination with other similar developments can potentially lead to significant adverse impacts on the environment with long term consequences. Such impacts may be through direct habitat loss (rural housing, agricultural development, afforestation etc) or through point source emissions leading to a deterioration in water quality (proliferation of individual waster water treatment facilities, inappropriate industrial development, intensification of agricultural use etc).

Furthermore the local authority provides sanitation services such as waste water treatment. The implementation of the plan and the planned increased in population will increase the loading on the existing wastewater infrastructure. Without adequate treatment discharges from such plants can potentially increase the nutrient loading on receiving waters with direct, long term adverse consequences on the aquatic environment.

Set out the conservation objectives of the site

Lough Ree SAC

Lough Ree is the third largest lake in the Republic of Ireland and is situated, in an icedeepened depression in Carboniferous Limestone, on the River Shannon system between Lanesborough and Athlone. It has a very long, indented shoreline and hence has many sheltered bays. The site supports a number of rare plant species which are listed in the Irish Red Data Book, Alder Buckthorn (Frangula alnus) and Bird Cherry (Prunus padus) are woodland components at St. John's Wood and elsewhere. Narrow-leaved Helleborine (Cephalanthera longifolia) and Betony (Stachys officinalis), which is legally protected under The Flora Protection Order (1987), occur among the ground flora of Hare's Island (where the former occurs in notable abundance) and a number of other woods. The rare Myxomycete fungus, Echinostelium colliculosum, has also been recorded from St John's Wood. The lake itself contains one of only two populations of the endangered fish species, Pollan (Coregonus autumnalis), which is genetically different from Continental European stock. Lough Ree and its adjacent habitats are of major ecological significance.

Some of the woodlands around the lake are of excellent quality and include some of the best examples of this habitat in Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for ancient woodland in Ireland. The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

Fortwilliam Turlough SAC

Fortwilliam Turlough is situated close to the eastern shore of Lough Ree, 6 km south of Lanesborough, in County Longford. The surrounding countryside is flat, with a thin cover of drift. The central part of the turlough is marly and contains Shoreweed (Littorella uniflora), Various-leaved Pondweed (Potamogeton gramineus), Broad-leaved Pondweed (Potamogeton natans) and the moss, Scorpidium scorpioides, in the wetter parts, together with Lesser Water-plantain (Baldellia ranunculoides), Sedges (including Carex serotina) and Jointed Rush (Juncus articulatus). Fortwilliam is the only extant large turlough in Longford and one of only two east of the Shannon. It has a high diversity caused by a semi-permanent waterbody, abundant marl precipitation, a relative lack of grazing and small outcrops of limestone, so it is a very representative example of the habitat. The turlough basin seems intact, its basin and hydrology largely unmodified. Its oligotrophic status is valuable, as this feature is becoming rarer in the context of modern agriculture. Due to these factors, Fortwilliam Turlough is a site of considerable ecological value.

Lough Forbes Complex SAC

This site is composed of a complex of different adjacent habitats, each of which contributes in a different way to the overall value of the site as a whole. The site is centered around Lough Forbes, a lake formed by a broadening of the River Shannon, and a series of raised bogs, callows grassland and a variety of other aquatic and terrestrial habitats to the west of Newtown Forbes on the Longford/Roscommon boundary. Lough Forbes is a medium sized lake underlain by limestone. It has extensive Reed (Phragmites australis) swamps which provide good cover for wildfowl. The raised bogs, located on the south-eastern shore of Lough Forbes, are known as the Ballykenny-Fishertown complex. These bogs are of international importance as unique examples of Shannon River edge bogs and they are also the most northerly intact bogs adjacent to the River Shannon. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands.

The Lough Forbes area is also of national importance for its population of Greenland White-fronted Geese (240 maximum count, 1991/1992). Ireland hosts about 50% of the world population of this race of goose, and has international obligations to conserve it.

Ardagullion Bog SAC

Ardagullion Bog is located 5 km north-east of Edgeworthstown. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca), and at least some of the following associated species, Bog Asphodel (Narthecium ossifragum), Sundews (Drosera spp.), Deergrass (Scirpus cespitosus), Carnation Sedge (Carex panicea). Ardagullion Bog supports a good diversity of raised bog microhabitats, including hummocks and pools. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

Brown Bog SAC

Brown Bog NHA is located 5 km north-west of Longford Town mainly in the townlands of Tully, Lissanurlan and Cartronlebagh. The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats. The site supports typical Midland Raised Bog communities, which include Ling Heather (Calluna vulgaris), Carnation Sedge, Bog-rosemary (Andromeda polifolia) and occasional Cranberry (Vaccinium oxycoccos). The high bog supports extensive quaking carpets of bog mosses including Sphagnum magellanicum, S. papillosum and S. capillifolium. Pools occur frequently and support Sphagnum auriculatum, Bogbean (Menyanthes trifoliata) and Great Sundew (Drosera anglica). Hummocks of Sphagnum imbricatum and S. fuscum occur. In the northwest old deciduous woodland with Downy Birch, Scots Pine, Rowan (Sorbus accuparia) is found.

The site supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site. Ireland has a high proportion of the E.U. resource of active Raised Bog (over 60%) and so has a special responsibility for its conservation at an international level.

Clooneen Bog SAC

Clooneen Bog lies approximately 3 km south-east of Roosky in Co. Longford on the east bank of the River Shannon, just north of Lough Forbes. The site is a candidate Special Area of Conservation selected for bog woodland, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (Rhynchospora alba) and/or Brown Beak-sedge (R. fusca).The open bog woodland is dominated by lichen encrusted Downy Birch (Betula pubescens) with a field layer of Purple Moor-grass (Molinia caerulea) and Hare's-tail Cotton-grass (Eriophorum vaginatum) with ericaceous shrubs such as Ling Heather, Crowberry (Empetrum nigrum), Bog-myrtle (Myrica gale) and Bilberry (Vaccinium myrtillus). There are also several ferns present including Hard Fern (Blechnum spicant) and Broad Buckler-fern (Dryopteris dilatata).

There is some active regeneration in the north-east with Cottongrass dominating over bog moss (S. cuspidatum). Clooneen Bog is a site of considerable conservation significance comprising as it does a raised bog and bog woodland, rare habitats within the E.U.

Lough Kinale and Derragh Lough SPA

Lough Kinale is a relatively small lake that is situated immediately downstream of Lough Sheelin, both lakes being near the top of the catchment of the Inny River, a main tributary of the River Shannon. Derragh Lough, a much smaller system, is connected to Lough Kinale and the Inny River. This is a typical limestone system and is very shallow (maximum depth of Lough Kinale is c. 4 m). A calcium-rich small sedge marsh occurs along parts of the shoreline characterised by species such as Longstalked Yellow-sedge (Carex lepidocarpa) and Water Mint (Mentha aquatica). Lough Kinale and Derragh Lough remains an important site for wintering waterfowl, especially diving duck. The site supports nationally important populations of Pochard (951) and Tufted Duck (449) – figures are average peaks for the 5 seasons 1995/96-1999/00. A large population of Mute Swan (120), close to the threshold for national importance, also uses the site.

A number of other species are found, in relatively low numbers, including Great Crested Grebe (25), Mallard (130) and Goldeneye (22). Whilst relatively small in area and subject to a number of damaging activities, this site retains national importance for two duck species. With an improvement in the environmental conditions pertaining at the site, higher numbers of some species would undoubtedly occur.

Lough Ree SPA

Situated on the River Shannon between Lanesborough and Athlone, Lough Ree lies in an ice-deepened depression in Carboniferous Limestone. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Wigeon (1,475), Teal (912), Pintail (35), Tufted Duck (661), Goldeneye (137), Golden Plover (2,035) and Lapwing (3,870) occurring – all figures are average peaks for the 5 seasons 1995/96-1999/00. Regionally important numbers of Whooper Swan (89) and Greenland White-fronted Goose (92) are found feeding in the vicinity of the lake. Other species which occur in winter include Cormorant (64), Mallard (675), Coot (250), Shoveler (40), Curlew (167) and Great Crested Grebe (23), as well as the resident Little Grebe (34) and Mute Swan (93).

The site supports a nationally important population of Common Tern (90 pairs in 1990). Lough Ree is an important site for breeding duck and grebes, with Tufted Duck (265 individuals in late May 1995) and Great Crested Grebe (89 individuals in late May 1995) having populations of national importance. Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. The most recent full census of the site for the species (in 1999) gave a population of c. 32 pairs. The woodland around the lake is also a stronghold for Garden Warbler.

Ballykenny-Fishertown Bog SPA

Ballykenny-Fisherstown Bog SPA is situated in the north-central midlands and is underlain by Carboniferous limestone. It is centered around Lough Forbes, a naturally eutrophic lake on the River Shannon system which is fed also from the north by the River Rinn. The lake has well-developed swamp vegetation and displays natural transitions to seasonally flooded grassland, marsh and raised bog. Ballykenny Bog is unusual in that some of its margins are intact, a rare feature in the Irish midlands. The lake and callow grasslands provide good habitat for a range of wintering waterfowl species though most occur in relatively low numbers. Counts in two of the winters in the 1995/96 to 1999/00 period are as follows: Cormorant 51, Whooper Swan 40, Wigeon 419, Teal 444, Shoveler 6, Tufted Duck 49 and Goldeneye 11. Merlin has been recorded within the site and may nest. Red Grouse are known from the bogs. The site is of ornithological importance for its wintering waterfowl, breeding Merlin and Red Grouse. The presence of Whooper Swans and Merlin is also of particular note. Red Grouse is a Red listed species in Ireland as it has declined in numbers in recent decades.

Glen Lough SPA

Glen Lough is situated about 5 km north-west of Lough Iron, to which it is connected by the Black River. An internationally important Whooper Swan population uses the site at times. This flock (average peak of 272 individuals for the 5 seasons 1995/96-1999/00) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (85), Teal (75), Mallard 46), Pintail (7) and Shoveler (23). Lapwing (189) are also found in the area. Whilst this site attracts a range of wintering waterfowl, the principal interest is the internationally important Whooper Swan population that is based in the area. Whooper Swan is of particular note as it is listed on Annex I of the E.U. Birds Directive. Greenland White-fronted Goose, nowadays an occasional visitor to the site, is also listed on Annex I of this Directive.

Appendix 3: Assessment Report

Describe the elements of the plan (alone or in combination with other plans) that are likely to give rise to significant effects on the site (from the screening assessmnert)
Co. Longford shares its boundary with a number of midland counties as noted above. Furthermore a number of Natura 2000 sites are located in more than one county. Similar development plans are in existence throughout the region, accordingly these plans acting alone or in combination can have a cumulative impact on Natura 2000 sites located within Co. Longford.

Set out the conservation objectives of the site	
Lough Ree	To ensure there is no net loss of area or change to the structure, biodiversity or distribution pattern of the highly sensitive communites within the site. To protect the mesotrophic to moderate eutrophic status which supports a rare fish (Pollan) and the diversity of breeding and wintering birds.
Fortwilliam Turlough	To ensure there is no net loss of area or change to this semi permanent waterbody, its abundant marl precipitation and biodiversity.
Lough Forbes Complex	To ensure there is no net loss of area or change to the structure, biodiversity or abundance of various habitats within the site.
Ardagullion Bog	To ensure there is no net loss of area or change to the structure, biodiversity or distribution pattern of the highly sensitive communites within the site.
Brown Bog	To ensure there is no net loss of area or change to the raised bog; its structure and its microhabitats.
Clooneen Bog	To ensure there is no net loss of area or change to the raised bog; its structure, and its biodiversity.
Lough Kinale And Derragh Lough	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the retention and proteciton of the nationally important duck species (Pochard and Tufted Duck.
Lough Ree SPA	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and resident bird populations.
Ballykenny-Fishertown Bog	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and breeding Merlin and Red Grouse.
Glen Lough SPA	To ensure there is no net loss of area or change to the structure or biodiversity within the site and the continued protection of the wintering waterfowl and resident bird populations.

Appendix 3: Assessment Report

Describe how the integrity of the site (determined by the structure and function and conservaiotn objectives) is likely to be affected by the plan (eg loss of habitat, disturbance, disruption, chemical changes, hydrological changes and geological changes etc). Acknowledge uncertainities and any gaps in
The potential exists to; • reduce the area of Natura 2000 sites, be loss or fragmentaiton through inappropriate or insensitive development; • cause fundamental changes in the chemistry of the soil or water environment; • interfere with water flows and flood dynamics; and • create unnecessary disturbance through inappropriate development with adverse effects on fauna species.

Describe what mitigation measures are to be introduced to avoid or reduce the adverse impacts ion the integrity of the site. Acknowledge uncertanties and any gaps in informaiotn.
HOU DS 12 f) Where it is proposed to dispose of treated effluent direct to a watercourse, the applicant shall submit an Assimilative Capacity Report on the receiving water, prepared by an experienced hydrologist and containing the following information; i. Assessing the chemical, biological (Q rating) and bacterial condition of the receiving water. ii. Assessing the flow data of receiving waters, indicating 95 %ile flow and Dry Weather Flow. iii. Provide an assessment of the associated impacts of the proposed discharge on the chemical, biological and bacteriological quality of the receiving waters with regard to the relevant legislation.
HOU DS 12 f) Where it is proposed to dispose of treated effluent by percolation, a detailed site assessment and characterisation should be submitted in accordance with EPA standards. The Council may require an experienced hydro-geologist report to be submitted on the likely impact of the discharge on ground water quality.
WS10 To protect, within its powers, valuable groundwater sources and important surface water bodies from pollution through infiltration by domestic, agricultural or other sources effluent/pollutant material.
WS 13 The upgrading of Longford Town effluent treatment plant and phased sewerage system improvements shall continue on an on-going basis.
SW 1 The discharge of surface water run-off and rainwater into foul sewage systems shall be strictly prohibited.
SW 2 Surface water storage measures shall be provided where it is considered that the surface water run-off levels exceed permissible discharge rates. Storm water run-off design should be carried out in accordance with Sustainable Urban Drainage Standards (SUDS), “Dublin Corporation Stormwater Management Policy Technical Guidelines” and “Greater Dublin Regional Code of Practice for Drainage Works” incorporating “Greater Dublin Strategic Drainage Study, Volume 2 , New Developments” or any future updates.

Appendix 3: Assessment Report

HS 1 In assessing an application for a hydro scheme the following shall be taken into consideration:- a Impact on environmental designations - Amenity Areas, Natural Heritage Areas, Special Protection Areas, Archaeological sites, areas with significant amenity use etc. b Visual impact arising from turbine houses, embankments, structures, roads, power lines, poles etc. c Projects should incorporate a fish pass to ensure the free and safe passage of fish. The views of the local Regional Fisheries Board may be sought. d Likely erosion arising from the development. e Turbines should be sited at sufficient distance from dwelling houses to ensure that noise emissions are not a nuisance. f Impact of construction stage and associated site works including water retaining structures, access routes, turbine housing, and grid connections etc. The timing of construction should avoid the breeding season of susceptible wildlife. g Consultation between the developer and local interest groups such as fishermen, water sport enthusiasts etc. prior to submitting planning application. h Water monitoring - the developer may by condition be required to submit water monitoring data to the Planning Authority. i It should be noted that in the event of permission being granted for a water level recorder is not an indicator that permission will be granted for a hydro energy development.
ENV 2 Any application for planning permission for new development, extension to existing development or intensification or change of use shall be assessed in terms of its potential impact on existing adjacent developments, existing land uses and/or the surrounding landscape. Where such development would have a significant adverse effect on the amenities of the area through pollution by noise, fumes, dust, grit or vibration, or cause pollution of air, water and/or soil, planning permission will not be forthcoming, prior to the proposal and introduction of mitigation measures agreed with the planning authority to eliminate negative environmental impacts or reduce them to an acceptable operating level.
ENV 3 The Council will seek to reduce the impacts of existing pollutant activities through the following measures: · Negotiation of a reduction in the pollutant activity to a non-polluting level or a revision of operating times to reduce the impact of the activity on adjacent land uses · Relocation to a more appropriate location where adjacent land uses are more compatible · Imposition of conditions restricting emissions/activity · Use of enforcement action against unauthorised developments/uses
ENV 6 The Council shall seek to protect ground and surface water resources from pollution. To this end, any identified major catchment areas of surface water bodies, capable of use as a potable water resource or other beneficial use and areas of aquifer vulnerability shall be protected. Development of a potentially pollutant nature in these areas and any future areas identified shall be prohibited.
ENV 7 It is the policy of Longford County Council to encourage and promote compliance with the recommendations contained in the Shannon and North South Share River Basin Management Plans.
ENV 10 The Council, where appropriate, shall seek to control and manage any potential point and/or diffuse sources of pollution with a view towards improving and maintaining good water quality. Such activities include, but are not restricted to, wastewater and industrial discharges, landfills, quarries, mines, contaminated land, agricultural activities, wastewater from unsewered properties, forestry activities and the use and discharge of dangerous substances.
HER 4 The Planning Authority shall endeavour to identify important landscapes and habitats and the importance of local character, identity and distinctiveness, in both the natural and built heritage of the County. This shall include an investigation of the Heritage Plan for the County into locally important and small scale heritage sites. Where these have been identified as important under the Heritage Plan, they shall be afforded the relevant protection
NHB 1 It is an objective of the Council to protect, conserve and enhance the County's biodiversity and natural heritage. This includes wildlife (flora and fauna), habitats, landscapes and/or landscape features of importance to wildlife or which play a key role in the conservation and management of natural resources such as water.

NHB 6 It is the policy of the Council to protect sites designated in National and European legislation, and in other relevant International Conventions, Agreements and Processes. This includes sites proposed to be designated or designated as: * Special Areas of Conservation under the Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) * Special Protection Areas under the Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds) Both the Birds and Habitats Directives have been transposed in Irish law by Ministerial Regulation. The European Communities (Natural Habitats) Regulations, 1997 are the most important of these because they provide for the protection measures and management regime that apply to SPAs and SACs. * Natural Heritage Areas (NHAs), Nature Reserves, and Refuges for Flora or Fauna under the Wildlife (Amendment) Act, 2000.
NHB 7 The Council shall seek to identify, protect and conserve, in co-operation with the relevant statutory authorities, vulnerable, rare and threatened species of wild fauna and flora and their habitats with particular reference to those species identified in national and European legislation, and in other International Conventions, Agreements and Processes.
NHB 8 The Council shall seek to co-operate with statutory and other relevant agencies to identify and protect a representative sample of the County's wildlife habitats, of local or regional importance, not otherwise protected by legislation. In addition, it is Council policy to protect; o Ramsar sites under the The Convention on Wetlands of International Importance (especially as Waterfowl Habitat).
NHB 9 Protect and enhance important landscape features and their setting including rivers, streams, canals, lakes and associated wetlands such as reedbeds and swamps; ponds; springs; bogs; fens; trees; woodlands and scrub; hedgerows and other field boundary types such as stone walls and ditches. These are important because; (a) they form part of a network of habitats, corridors and 'stepping stones' essential for wildlife to flourish, thus providing a high quality natural environment for all, and/or (b) they protect and enhance surface water and groundwater resources and are essential as part of the integrated approach to the management of water resources, necessary to ensure the highest water quality into the future, as set out in the Water Framework Directive (Directive 2000/60/EC establishing a framework for Community action in the field of water policy)
ILW1 The Royal Canal, Rivers Shannon, Inny and Camlin and Lough Ree, Lough Gowna and the County's other rivers and lakes are recognised as important amenity and recreational resources and, as such, it is the policy of the Council to preserve, protect and enhance these important resources.
LW 3 Longford County Council shall, within its powers, protect Lough Ree from unsustainable, large-scale and high volume abstraction of water resources for use in areas external to Longford County
ILW 7 Development will be strictly controlled in the vicinity of the inland waterways of the County and will not normally be permitted. Application for such development shall be assessed, in addition to normal planning criteria, in terms of its potential impact on the visual, recreational, ecological and environmental integrity of the area.
ILW 8 The broad zones of the lakes, rivers, canals and deciduous woodlands shall be protected from inappropriate development (see Appendix 8), i.e. development which adversely affects high amenity and landscape quality in relation to their setting. For example, the environs of Newcastle House and Woods, particularly adjoining the River Inny Bridge.
ILW 12 Development in the broad zones of the major rivers and lakes of the County, as illustrated in Appendix 8, will not normally be permitted and shall be restricted to extensions of existing dwellings, which shall be sensitively designed in terms of the individual site and materials. Intensive agricultural developments shall not normally be permitted in these areas.

Results of consultation

Name of agency(ies) or biody (ies) consulted

Department of the Environment, Heritage and Local Government