

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
WOODLAND			
Champion Trees. A Selection of Ireland's most remarkable trees.	Ireland	1-9%	A dataset listing the largest trees in the country based on height and girth. Trees are listed by county, by height, by girth, and by species. The database is available online at: <a href="http://www.treecouncil.ie/treeregister.html">http://www.treecouncil.ie/treeregister.html</a> . The tallest recorded tree for Longford is a <i>Picea sitchensis</i> (Sitka Spruce) at Castle Forbes, Newtownforbes: (4.78m girth @ 1.5 m x 38.50 m tall). The tree with greatest recorded girth in Longford is a <i>Quercus robur</i> (English/Common Oak) at Castle Forbes, Newtownforbes: (8.49m girth @ 0.9 m x 23.5m tall).
Forest Inventory and Planning System (FIPS),	Ireland	1-9%	FIPS is a GIS based planning tool, which has been developed by Coillte for the Forest Service of the Department of Marine and Natural Resources. (Teagasc soil specialists have had an active involvement in FIPS but the overall system has been developed by the Forest Service). FIPS provides the most up to date inventory of the national forest resource. All forest parcels greater than 0.2 ha (0.5 acres) have been mapped and classified using multiple sources of geographic data including satellite imagery, aerial photography and Ordnance Survey maps. Combined with digital records of all forest grant applications, FIPS provides the most accurate and detailed information available on the national forest estate. This information is available on National, County, District Electoral Division or Townland bases. According to FIPS, the total afforested area of the state is 571,345 Ha. Total forested area in Co Longford: 5,345.38 Ha. Area of Longford which is potentially native woodland: 1317.1 (this figure is likely to be reduced following completion of the Native Woodland Survey of the county).

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Irish Forest Soils (IFS) Project	Ireland	1-9%	The Irish Forest Soils Project (IFS) is a project of the Forest Service, Department of the Marine and Natural Resources. The objective of the IFS project, which is a subset of the wider Forest Inventory and Planning System (FIPS), was to develop a national digital soil classification and forestry potential productivity ranking. The task of IFS was to devise a first approximation soil classification for the Republic of Ireland in order to provide the appropriate framework for the spatial planning process for forestry.
Coillte Forest Management Plans: Lakelands Forest Management Plan (Longford)	Ireland	50-99%	Coillte's estate is subdivided into 36 Forest Management Units (FMU's). They have developed plans for each of these FMU's, which describe Coillte's forests in the area, sets out the long term vision for the management of these forests, and identifies the social, environmental and economic objectives for the next five years. The plans were developed following consultation with stakeholders. The Lakelands Forest Management Plan comprises all of County Longford and parts of adjoining Counties, Westmeath, Roscommon, Meath and Cavan. For further information contact: John O' Sullivan, Coillte, Bridge Street Centre, Portlaoise, Co. Laois.

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Coillte Biodiversity Plans	Longford	100%	<p>It is now Coillte policy to manage in the region 15% of its woodland resource for nature conservation purposes. Areas managed primarily for biodiversity fall into two categories: Sites proposed for designation under nature conservation legislation by NPWS, and Non designated sites which will be managed with biodiversity as a primary objective.</p> <p>The ecological features most relevant to Coillte within Lakelands FMU (Longford) are:</p> <ul style="list-style-type: none"> <li>• Rivers, streams, lakes and their adjacent habitats which support many species of flora and fauna.</li> <li>• Old estate woodlands</li> <li>• 5% of the FMU that lies with SAC's, SPA's and NHA and also the land adjacent to these habitats</li> <li>• Cutover and raised bogs are also a valuable habitat in this FMU</li> </ul> <p>Ecological surveys have been undertaken on these areas and management plans have been drawn up. Pat Brady (Regional Coillte representative - 043 47237/ 086 2532328) currently holds copies of these plans.</p>
National Survey of Native Woodland in Ireland	Ireland	1-9%	<p>The native woodland survey started in 2003 and continues until 2006. During 2004 and 2005 woodlands were surveyed in Counties Leitrim, Monaghan, Cavan, Louth, Roscommon, Longford, Westmeath, Meath, Dublin, Kildare and Wicklow. The data collected included species lists for each site and a 10 x 10 m relevant from each habitat type within a site. The relevant data includes dominant cover values for all plant species and timber structural and regeneration data. The survey of Longford's woodland sites was completed in the summer of 2005.</p> <p>Related publication: Higgins, G.T ., Martin, J.R., Perrin, P.M. (2004) National Survey of Native Woodland in Ireland. NPWS Dublin.</p>

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INVERTEBRATES			
This is a trial dataset from the Bees, Wasps and Ants Recording Society	Ireland	1-9%	This dataset forms the 'Provisional Atlas of the ticks (Ixodoidea) of the British Isles' by K.P. Martyn, published in 1988 by the Biological Records Centre, Huntingdon. Twenty three species of ticks (Ixodoidea, families Ixodidae and Argasidae) are mapped and the atlas also gives all host records. A fuller description of the dataset can be found in that publication.
Butterfly distributions for Ireland for the period 1995-99 from Butterfly Conservation and the Dublin Naturalists' Field Club	Ireland	1-9%	<p>Irish butterfly distribution data for 1995-1999 from the Butterflies for the New Millennium (BNM) project, run by Butterfly Conservation, CEDaR and the Biological Records Centre (CEH) in Northern Ireland and the Dublin Naturalists' Field Club in the Republic of Ireland. This five-year data set consists of 50,000 distribution records of butterflies. The data include records of all resident butterfly species, plus three regular migrants (Clouded Yellow, Red Admiral and Painted Lady). Records were made from all terrestrial habitats and throughout the year. The combined data for 1995-1999 represent 98% coverage of 10 km squares in Ireland. However, many areas remain under-recorded and the data set should be regarded as a provisional guide only to the distributions of butterflies in Ireland. Database available online via nbn gateway at: <a href="http://www.searchnbn.net/">http://www.searchnbn.net/</a>.</p> <p>Related publication: Asher J, Warren, M, Fox, M (2001) The Millennium Atlas of Butterflies in Britain and Ireland, Oxford University Press.</p>

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Atomariinae beetle Dataset for Britain and Ireland	Ireland	1-9%	Atomariinae beetle data from the UK and Ireland. The data was collected by volunteers as part of the Atomariinae and Ptiliidae Recording Scheme. Recording cards were sent to BRC by the scheme organiser where they were converted to electronic format. The data is from the 1993 Atlas summarising information on the occurrence in Britain and Ireland of Atomariinae beetles in the genera <i>Caenoscelis</i> , <i>Atomaria</i> , <i>Ootypus</i> and <i>Ephistemus</i> . Patchy coverage of Ireland.
Cantharoidea and Buprestoidea Dataset for Britain and Ireland,	Ireland	<1%	This dataset includes records of Cantharidae (soldier beetles), Buprestidae (jewel beetles), Lampyridae (glow worms), Lycidae (net-winged beetles) and Drilidae. It originates from the Cantharoidea and Buprestoidea Recording Scheme that was started in 1984. Much of the data in this dataset was derived electronically from certain local records centres, having been collected by volunteers. Note that the 'Provisional atlas of the Cantharoidea and Buprestoidea (Coleoptera) of Britain and Ireland' (Keith Alexander 2003. CEH Huntington) was derived from these data.
Orthoptera Dataset of Britain and Ireland (held by British Records Centre)	Ireland	1-9%	The majority of records for this dataset are derived from the Orthoptera Recording Scheme. Most records are between 1970-1999 with a peak of recording activity in 1990. All the survey data were collected by volunteers and mainly derived from British Records Centre (BRC) recording cards input to electronic format in BRC. Some data was received in electronic format, having been verified by the Scheme organiser. Recording is still continuing although no publications are expected at present. Further information available at NBN website: <a href="http://www.searchnbn.net">http://www.searchnbn.net</a> . Note that this dataset was used as the basis of the atlas publication: Haes, E.C.M. & Harding, P.T. (1997). Atlas of grasshoppers and allied insects in Britain and Ireland. London: HMSO.

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Dragonflies recorded at Fortwilliam Turlough and Cordara Turlough (2004/2005)	Longford	100%	Dragonflies recorded at Fortwilliam Turlough and Cordara Turlough (2004/2005). Unpublished data held by the regional NPWS office (Sue Moles, NPWS Ranger, Moyne District Office, Moyne, Co Longford).
Online Dragonfly species lists and species descriptions: <a href="http://www.ulstermuseum.org.uk/dragonflyireland">http://www.ulstermuseum.org.uk/dragonflyireland</a> .	Ireland	1-9%	Project supported by Dúchas The Heritage Service; Environment and Heritage Service (DoE, NI) and the Ulster Museum, will undertake to document the status and distribution of Dragonflies throughout Ireland. Summary results of project are published online. The website provides a brief account of each species in referring to its distribution and abundance in Ireland, adult flight period, preferred habitats and identification. Key identification features and similar species are mentioned. Data for the project provided by dragonfly recorders and naturalists. Website: <a href="http://www.habitas.org.uk/dragonflyireland">http://www.habitas.org.uk/dragonflyireland</a> .  Related publication: Merritt, R., N.W. Moore & B.C. Eversham. 1996. Atlas of the dragonflies of Britain and Ireland. Institute of Terrestrial Ecology Research Publication No. 9. HMSO, London.
Dragonflies recorded at Lough Kinale, Co Longford 2003.	Longford	100%	Dragonflies recorded at Lough Kinale, Co Longford 2003. Unpublished data held by the regional NPWS office (Sue Moles, NPWS Ranger, Moyne District Office, Moyne, Co Longford)

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Hoverfly Recording Scheme database for Great Britain and Ireland	Ireland	<1%	The dataset summarises the information collated by the Recording Scheme from its inception in 1976 to about 1997. The great majority of the information consists of field observations made by voluntary recorders submitted either on BRC recording cards, or electronically from other datasets. Data covers Great Britain and Ireland. Note that the "Provisional Atlas of the Hoverflies of Great Britain" (Ball & Morris, 2000. CEH, Huntingdon) was derived from these data.
The County Distribution of Irish Spiders	Ireland	1-9%	A catalogue comprising a survey of all the available literature on the distribution of Irish spiders (as at 1996). The species names have been updated to take account of recent taxonomic and nomenclature work although the original records themselves were not validated as part of this work. Related publication: P.J. Van Helsdingen, (1996), The Irish Naturalists' Journal, Special Zoological Supplement.
Ground Beetles (Carabidae) of Ireland	Ireland	1-9%	Project supported by Dúchas The Heritage Service; Environment and Heritage Service (DoE, NI) and the Ulster Museum, undertaking to document the status and distribution of Carabidae throughout Ireland. Summary results of project are published online. This web site is based largely on the book: The Ground Beetles of Northern Ireland, Anderson, R., McFerran, D., & Cameron, A. 2000. This site is another step along the way to encouraging interest in Irish ground beetles. It extends the book by including more illustrations of the species and providing a means to produce updated distribution maps. It is intended to act as a stimulus to further recording of ground beetles in Ireland by providing a resource which makes these little-studied animals more accessible to interested amateurs, biological recorders, school biology classes and the general public. Website: <a href="http://www.habitas.org.uk/groundbeetles">http://www.habitas.org.uk/groundbeetles</a> .

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MAMMALS			
Distribution Atlas of Bats in Britain and Ireland 1980-1999 (Published 2000)	International	1-9%	Richardson, P (2000). Distribution atlas of bats in Britain and Ireland 1980 - 1999. The Bat Conservation Trust, London, UK. First distribution map of bats in Britain and Ireland since Arnold's Atlas of Mammals in Britain published in 1993. Distribution maps cover Britain and Ireland and give a guide to the range of different species of bats across the area, whilst also giving useful information such as isotherms, altitude and some major habitat features. A highly comprehensive overview of the status of British and Irish chiroptera over the last century. Related publication: O'Sullivan, P. (1994). Bats in Ireland. Special supplement to the Irish Naturalists' Journal.
National bat database	Ireland	1-9%	National Bat Database maintained by NPWS (Ferdia Marnell). The NPWS maintain a national database in conjunction with Bat Conservation Ireland. They are currently working with BCI to develop an online single depository database.

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Bat records for Ireland from Bat Conservation Ireland (BCI)	Ireland	1-9%	All bat records held by Bat Conservation Ireland (BCI). Records are currently held in different locations by different BCI recorders although BCI are currently in the process of setting up a single depository online database. The Heritage Council has provided the funding for BCI to set up and maintain the national bat database which will collate and log information on bat roosts, distribution and occurrence on the island of Ireland. This project aims to centralise information which is currently found fragmented across the island in Environmental Impact Assessment reports, various survey reports, one-off sightings and bat group records. It will also collate historical information on past surveys. This database will be user friendly to allow far flung bat workers to input data directly, wherever they may be.
Badger and Habitat survey of Ireland	Ireland	1-9%	National survey undertaken mainly by Wildlife Rangers of the NPWS between 1989 and 1993. In total 729 x 1km squares (1% of Ireland's land area) were assessed for badger setts. Badger activity in setts was recorded as well as other information including: proximity to cattle, and classification of local habitat. Eleven 1Km squares were surveyed in Longford County. Results of survey were published in: Smal, C. (1995), The badger and habitat survey of Ireland. The Stationery Office, Dublin.
Exploring Irish Mammals	Ireland	1-9%	Hayden, T. & Harrington, R. (2000) Exploring Irish Mammals. Town House and Country House Ltd., Dublin. Two of Ireland's leading zoologists, Dr Tom Hayden and Dr Rory Harrington, chronicle the history of mammal life in Ireland. This book provides details of all the mammals (both marine and terrestrial) found in the wild in Ireland. It includes maps illustrating the distribution of each animal in Ireland as well as a map of its distribution throughout the world. It also gives an account of the identification, habits and conservation of each animal. Also includes detailed illustrations by Billy Clarke,

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National Otter Database (NPWS)	Ireland	1-9%	National database of otter records held by Naomi Kingston at NPWS. This database is largely comprised of records extracted from the 1982 publication by Chapman and Chapman (Chapman, P.J. and Chapman L.L. (1982) Otter Survey of Ireland, Vincent Wildlife Trust.). Naomi Kingston has confirmed that the NPWS have recently commissioned an updated survey of the otter in Ireland. The field work for this survey was undertaken in 2004 - 2005. The results of the survey are to be reported in an Irish Wildlife Manual which is scheduled for publication in February 2006. The records will also be made available on the new NPWS website: <a href="http://www.npws.ie">http://www.npws.ie</a>
Irish Otter Dataset (British Records Centre)	Ireland	1-9%	Irish Otter Dataset held by British Records Centre (BRC). Confined to records of Otter ( <i>Lutra lutra</i> ) extracted from Chapman, P.J. and Chapman L.L. (1982) Otter Survey of Ireland, Vincent Wildlife Trust. These records were extracted in BRC from the above publication and are included here as a test dataset. The original records were professionally-collected as simple 10km square data on parts of the Irish grid. There is a notable geographic distribution of records by 50km square due to the collection methods that are described in the publication. Dataset published as interactive map on National Biodiversity Network website: <a href="http://www.searchnbn.net">http://www.searchnbn.net</a>
Survey of otters in 8 rivers in Longford - 2005.	Longford	100%	Survey of otters in 8 rivers in Longford - 2005. Unpublished data held by the regional NPWS office (Sue Moles, NPWS Ranger, Moyne District Office, Moyne, Co Longford).

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REPTILES AND AMPHIBIANS			
The distribution of the Smooth Newt, <i>Triturus vulgaris</i> L., in Ireland	Ireland	<1%	<p>Study carried out to provide baseline information for the distribution of the newt in Ireland. Semi-random sub-sampling technique was used. The pattern of the OS squares was based on that of the Otter Survey of Ireland carried out in 1991. It involved the study of alternate 50km squares across the national grid and the selection of 3 10km squares 50km square so as to give an even spread of surveying effort. Combination of egg searches and dip netting used to determine presence. Note that no records were returned for Longford - the author suggests that this is down to under recording. The local NPWS Wildlife Ranger (Sue Moles, pers comm.) confirmed that the newt is present in Longford. Associated publication:</p> <p>Ferdia Marnell, 1998. The distribution of the Smooth Newt, <i>Triturus vulgaris</i> L., in Ireland. Bull. Iri. Biogeog, Soc.: 22 : pp 84-96</p>

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Reptiles and Amphibians Dataset (held by British Records Centre)	Ireland	1-9%	<p>Reptile and Amphibian records extracted from the British Records Centre (BRC) herptiles database. There is no official recording scheme for herptiles although some recording is ongoing within BRC. These data were input to electronic format in BRC from recording cards. Good coverage of England, Scotland and Wales and reasonable coverage of Ireland. Further details available at National Biodiversity Network website: <a href="http://www.searchnbn.net">http://www.searchnbn.net</a>.</p> <p>Related publications: Arnold, H.R. (1995). Atlas of amphibians and reptiles in Britain. HMSO, London.</p> <p>Ni Lamhna, E. (1979). Provisional Distribution Atlas of Amphibians, Reptiles &amp; Mammals in Ireland. An Foras Forbartha, Dublin.</p>
The habitat, distribution, population ecology and feeding biology of the smooth newt <i>Triturus vulgaris</i> L. in Ireland.	Ireland	<1%	<p>Marnell, F (1996). The habitat, distribution, population ecology and feeding biology of the smooth newt <i>Triturus vulgaris</i> L. in Ireland. Unpublished Thesis, University of Dublin, Trinity College.</p>

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National Irish Frog Survey	Ireland	1-9%	The Irish Frog Survey was undertaken by the Irish Peatland Conservation Council in 1997. The survey aimed to provide base-line information about where frogs occur, the habitats they prefer, when they start breeding and their breeding success in Ireland. In all 832 frog survey records were completed by members of the public and students in primary and secondary schools. The survey showed that frogs occurred and reproduced in every county in the Republic of Ireland in 1997. It is anticipated that the national frog survey will be repeated on an ongoing basis.
National Reptile Database (NPWS)	Ireland	<1%	National reptile database maintained by NPWS (Ferdia Marnell). The reptile database is comprised of paper based records. Ferdia Marnell indicated that there are a small number of records for Longford. However, the county is not well represented in the dataset.
National Amphibian Database (NPWS)	Ireland	1-9%	National Amphibian Database maintained by NPWS (Aine O' Connor). The amphibian database is comprised of paper based records.
Grass snakes released in Co. Longford	Co. Longford	100%	Duncan, J.C (1933) Grass snakes released in Co. Longford. Irish Naturalist Vol 4: 10. p199.

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ENVIRONMENTAL IMPACT STATEMENTS			
Environmental Impact Statement for Dry Mix Concrete Batching Plant at Rhyne, Killoe, Co. Longford. Ref PL 02/557 May 2003	Co. Longford	100%	Ecological survey undertaken(March 2003) by ENVIROCO Management Ltd, Iveragh, Cormac St Tullamore - 0506 52342 - www.enviroco.ie. Fairly comprehensive survey giving complete flora and fauna lists for the site. No priority species or habitats. Copy of EIS held by Longford County Council.
Environmental Impact Statement for proposed extension to C&D Foods Ltd, Edgeworthstown, Longford 1988.	Co. Longford	100%	EIS prepared by Brian Meehan and Associates. Brief Flora and Fauna section stating that there is no significant ecological interest associated with the site - no details of site survey.
Environmental Impact Statement for Camlin Village (Master Developments) - November 2004.	Co. Longford	100%	Proposal to construct a residential development in townlands of Lisnamuck and Templemichael Glebe to north east of Longford town. Ecological assessment undertaken by Natura Consultants. Site surveyed 11 November 2004. Habitats identified according to Fossitt 2000. Brief flora and fauna survey - mammals surveyed by examination for tracks and signs. Copy of EIS held by Longford County Council - details of Ecological report pp 71 - 75.

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Environmental Impact Statement for proposed development at Midland Karting, Cranleymore, Edgeworthstown, Co. Longford, Dec 24, 2003.	Co. Longford	100%	EIS relating to proposal to construct karting track and to change of use from forestry to outdoor pursuits area at Cranleymore and Rinvanny, Edgeworthstown, Co. Longford. Ecological survey undertaken by Brian McGuire Environmental Planner, Ballyjamesduff, Co. Cavan - 086 8326382. Ecological survey undertaken on Nov 3, 2003 comprised of brief survey of flora of proposed development site. Copy of EIS held by Longford County Council - Flora and Fauna Report: pp 19 - 24.
Environmental Impact Statement for Quarry Operations by James Murtagh at Tennialough, Carrickboy, Co Longford May 2003	Co. Longford	100%	EIS relating to proposal to extract limestone from quarry at Tennialough - 1Km to south east of Carrickboy, Co Longford. Ecological survey carried out by Dr P Ashe who undertook comprehensive baseline survey of site on 27 March 03 and June 2003. Description of habitat and species list comprising bird species and herbs and trees and shrubs. Copy of EIS held by Longford County Council - see section 3.2 of report.
Environmental Impact Statement for Quarry Development at Lettergullion, Lettergeeragh, Drumlish, Co. Longford.	Co. Longford	100%	EIS relating to proposal to extend quarry 4 km east - northeast of village of Drumlish. Ecological assessment undertaken by Conservation Consultants Ltd. Brief survey of flora and fauna. No comprehensive species listings. Copy of EIS held by Longford County Council - Flora and Fauna section, pages 26 - 31.

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Environmental Impact Statement for proposed mixed use developments at Farranyoogan/ Ballyminion, Longford - May 2005	Co. Longford	100%	EIS relating to 13 separate proposals have submitted for sites within the Ballyminion-Farranyoogan area. Plan submitted on behalf of Flancare Clonmel Ltd by Brian Meehan & Associates. Very brief survey of flora and fauna on site with no comprehensive species lists. Copy of EIS held by Longford County Council.
Conservation Plan for Carrigglas Manor and Demesne, Co Longford	Co. Longford	100%	Prepared by on behalf of Mr Tom Kearns - June 2004. Conservation Plan commissioned by Mr Tom Kearns to inform the future development of Carrigglas Manor and Demesne. Comprehensive ecological survey of the estate undertaken by John Cronin & Associates on April 22, 23, 24th 2004. Also survey of associated buildings and garden. Copy of Conservation Plan held by Longford County Council - refer to pages 44-53 and appendix 4 for ecological report.
Environmental Impact Statement for Development of Cariglass Demesne for Mr T Kearns, Rathcline House, Lanesborough, Longford, August 2004.	Co. Longford	100%	EIS associated with planning application for a mixed use development comprising a 21 Hole Golf Course and Club House, Residential Development of 375 units and 100 bedroomed hotel. Comprehensive ecological assessment undertaken by John Cronin and Associates. The assessment was comprised of a desktop review and field survey which was conducted on 22 and 24 April 2004 and 17-23 July 2004 (mammal survey). The report includes details of a night time bat survey and also provides a comprehensive description of all woodland and grassland communities. The report contains records for the following species: Pine martin, Otter, Badger, Soprano pipistrelle, Common pipistrelle, Nathusius' pipistrelle, Leisler's Bat, Natterer's Bat, Daubenton's, and Bat Brown long-eared bat. Copy of EIS held by Longford County Council - refer to pages 147-190 for ecological report.

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Environmental Impact Statement for pig slaughtering installation, associated waste water treatment plant and ancillary works at Killeen, Newton Forbes Co Longford	Co. Longford	100%	EIS relating to proposed pig slaughtering unit at Killeen, Newton Forbes Co Longford. Report prepared by Vincent Flynn, 2004. No flora and fauna survey. Copy of EIS held by Longford County Council.
Environmental Impact Statement for proposed mixed use developments at Abbeycartron, Longford (2004).	Co. Longford	100%	EIS for proposed mixed use developments at Abbeycartron, Longford (2004). Ecological survey carried out by Keville & O' Sullivan Associates Ltd on behalf of Laragan Developments Ltd. The field survey was undertaken on 22 October 2004 and the ecological report includes a comprehensive account of flora and fauna. Copy of EIS held by Longford County Council.
Environmental Impact Statement for proposed ESB power station at Lanesborough: Flora and fauna survey.	Co. Longford	100%	EIS relating to proposed ESB power station at Lanesborough. Survey of habitats and flora and fauna in vicinity of the ESB power station and ash disposal site at Lanesborough and Derraghan. Ecological report was produced by Ecological Consultancy Services (EcoServe).

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			BOGS AND FENS
Bogs and Fens of Ireland - Conservation Plan 2005	Ireland	1-9%	<p>In this report the IPCC presents a blueprint for the development of a national strategy for the protection of a representative sample of bogs and fens in Ireland.</p> <p>The report includes: Detailed information on 914 bogs and fens of conservation importance in the island of Ireland; Location maps of Irish peatland habitats and threatened species; Actions required to tackle 23 issues affecting the future of Ireland's peatland heritage; three chapters explaining the characteristics, conservation and extent of fens, raised bogs and blanket bogs in Ireland; and finally, a glossary of technical terms along with a bibliography of publications. Related publications:</p> <p>Foss, P. &amp; O'Connell, C. 1998. The IPCC Peatland Conservation and Management Handbook. Irish Peatland Conservation Council.</p> <p>Foss, P.J., O'Connell, C. A. &amp; Crushell, P.H. 2001. Bogs and Fens of Ireland; Conservation Plan 2005. Irish Peatland Conservation Council.</p>

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The Raised Bogs of Ireland their ecology, status and conservation	Ireland	1-9%	Cross, J.R. (1989) The Raised Bogs of Ireland, their Ecology, status and conservation, The Stationery Office, Dublin. This detailed report by John Cross was produced following a survey of more than 25,000ha on over 200 raised bogs. At the time of publication it was the most detailed survey of its kind undertaken in Ireland. It has provided a considerable amount of new information on the ecology of our raised bogs and provides a clear picture of the state of this extensive ecosystem which has played such an important role in the history, culture and economy of the Irish society. The report is structured as follows: The general ecology of raised bogs, details of the schematic survey, conservation rationale, requirements and problems, and conclusions and recommendations. 223 sites were examined in the field and sites were assessed using seven criteria: hydrology, integrity, habitat diversity, relationship with other sites, rare and protected species, size and recorded history.
			A number of sites were surveyed in Longford: Brown Bog was categorised as Category A (very good quality site) - Ballykenny Bog, Fisherstown, Clontymullen, Williamstown were categorised as Category Bi (good quality sites) - Derrymore, Mt Jessop and Clooneen were categorised as Category Bii (Moderate Quality Sites) and finally Cloonageeher, Forthill, Annaghcooleen were categorised as Biii (Poor Quality Sites).
Longford Peatland Sites of European Importance for Birds	Ireland	100%	Longford peatland sites supporting important bird species: (see pages 99 - 104 of IPCC Conservation Plan 2005). Derrymacar Lough: (Golden Plover, Curlew); Fortwilliam Turlough (Snipe); Lough Bawn (Snipe Curlew); Annaghcooleen (Curlew, Greenland white-fronted goose); Mount Jessop & Derrymore Bogs (Red Grouse); Ballykenny (Greenland white-fronted goose); Lough Forbes Complex (Greenland white-fronted goose, Merlin).

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Survey of the Raised Bogs of County Longford	Co. Longford	100%	Comprehensive and detailed database of surviving archaeological features in Longford's bogs. Survey undertaken between 1991 and 1993 by IAWU.
Trackway Excavations in the Mountdillon Bogs, Co Longford	Co. Longford	100%	Full account of seven season's of excavation on trackways in Mountdillon, Co Longford. 60 structures are described in detail and are extensively discussed in their cultural, chronological, and environmental contexts. Surveys undertaken by IAWU between 1985 and 1991.
The Natural Regeneration potential of Derrycashel Industrial Peatland, Co Roscommon, Ireland - John Feehan	Ireland	50-99%	A study of the Bord na Móna Mountdillon group of bogs in Longford and Roscommon which cover an area of approximately 18,000 acres. The report comprises an account of the topography and the flora and fauna of the cutaway and the potential for the creation of a national park. The research was carried out by the department of environmental resource management at University College Dublin, under the direction of Dr. John Feehan. The report suggests that these bogs remain in State ownership and a national park be established on them. Note that a non-technical account of the above study was published: A long lived wilderness by John Feehan (2004), UCD, Dublin.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Literature review of potential uses of cutaway and intact raised bog at Bord na Mona Mount Dillon bog production complex in Co. Longford	Co. Longford	100%	The objective of the above report was to collate and relate existing information on the uses of cutaway bog (Appendix 1) to the Mount Dillon complex of bogs in Co. Longford. The study comprised a comprehensive desktop survey into the potential uses of cutaway bog at Lanesborough. Also includes brief ecological survey of Derrylough Bannow Bog.
Gradients in floristic composition of callow grasslands. County Longford, Ireland.	Longford	100%	W. Tolkamp, 2001. Gradients in floristic composition of callow grasslands. County Longford, Ireland. MSc thesis, Agriculture University Wageningen, Netherlands. This study examined the levels of biodiversity associated with different management regimes of floodplains/ callows. The study focused on the callows associated with Fisherstown Bog. The report concluded that highest levels of biodiversity were associated with mowing. A management regime based on grazing was found to be associated with medium levels of biodiversity while non-management or abandonment was associated with lowest biodiversity levels. Note that Dr Jim Ryan (NPWS - Dublin) holds a copy of this MSc publication.
The bogs of Ireland. An introduction to the natural, cultural and industrial heritage of Irish peatlands.	Ireland	1-9%	Feehan J, O'Donovan G, 1996. The bogs of Ireland. An introduction to the natural, cultural and industrial heritage of Irish peatlands. UCD: The Environmental Institute. This book contains information on all aspects of the Bogs and Peatlands of Ireland. There are extensive sections on Turf harvesting as well as others dealing with the Flora and Fauna of the bogs. Environmental issues are also covered as well as the wealth of archaeological deposits contained in the Bogs

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Irish Fen Inventory - A review of the Status of Fens in Ireland.	Ireland	1-9%	Published by IPCC in 2000. In this report Patrick Cushell presents a review of Ireland's Fen habitat. The following areas are covered in the report: 1) condition and management of existing fen habitat; 2), effects of damaging management activities; 3) an evaluation of the existing statutory framework in protecting Fen habitat in Ireland; and 4), recommendations concerning the future management of this habitat in Ireland.
National Raised bogs database	Ireland	1-9%	National database of raised bogs held by NPWS (Naomi Kingston). 9 Longford sites appear on this dataset and each of these sites are now formally designated.
Site Monitoring Reports	Ireland	1-9%	Site monitoring reports for designated areas held by Naomi Kingston at NPWS. Ms Kingston confirmed that site monitoring reports for some designated sites are currently in draft form. NPWS have a statutory obligation to publish monitoring reports but a publication date has not yet been set.
A Social and Ecological Appraisal of Doireachan Cutaway Bog, Co Longford.	Co. Longford	100%	Tom Egan and Stephen Heery (2000). A Social and Ecological Appraisal of Doireachan Cutaway Bog, Co Longford. Unpublished report commissioned by the Lough Boora Parklands Group. --- A study of Doireachan Cutaway Bog - Co Longford which comprises 25 ha of recolonising cutaway bog in the Mount Dillon complex. The report is structured as follows: potential for further ecological and amenity enhancement; consultation with local communities, social impact of development of the area; management structure for the proposed developments. The report also describes an ecological survey of the bog which was undertaken by Tom Egan and Steven Heery on 27 and 28 Jan 2000 (list of bird, mammals and plants noted as well as general description and map of habitats).
The Peatlands of Ireland. Soil Survey Bulletin No. 35.	Ireland	1-9%	Hammond, R.F. (1979) The Peatlands of Ireland. Soil Survey Bulletin No. 35. An Foras Talúntais, Dublin

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Survey to locate raised bogs of scientific interest in counties Longford, Westmeath and East Mayo.	Ireland	25-49%	Douglas, C. and Grogan, H. 1986. Survey to locate raised bogs of scientific interest in counties Longford, Westmeath and East Mayo. Internal report to the Forest and Wildlife Service, Dublin.
Conservation and restoration of raised bogs. Geological, hydrological and ecological studies.	Ireland	<1%	Schouten, M.G.C. (2002) Conservation and restoration of raised bogs. Geological, hydrological and ecological studies, Stationery Office, Dublin. This book results of a decade of co-operation between the Irish and Dutch organisations responsible for nature conservation and between Irish and Dutch scientists. This co-operation had its basis in the Irish Peatland Conservation Committee (the later IPC Council) founded in 1982 and the Dutch Foundation for the Conservation of Irish Bogs (founded 1983). The book contains a wealth of information on regional geology, regional hydrology, bog hydrology, and vegetation ecology, with much attention to hydrochemistry. The book also includes an extra chapter on “soaks”, areas of mesotrophic or minerotrophic vegetation, occurring on otherwise ombrotrophic bog, which are usually associated with internal drainage systems.
			An overview is given of the relationships between biotic and abiotic conditions, again with much attention for hydrology and hydrochemistry. The last chapter “General conclusions” summarizes the implications for management and restoration on the scale of the bog-landscape (macro-scale), the different ecological systems (meso-scale), and the different habitat types (micro-scale).

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
A presentation by second opinion on the issue of The Commons North - commissioned by a number of concerned citizens at Lanesborough.	Longford	100%	Copy of this report held by local NPWS ranger (Sue Moles).

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
FRESHWATER			
Lough Ree - King of Lakes	Ireland	10-25%	Anon (1999) Lough Ree - King of Lakes. Athlone Chamber of Commerce. 120-page report published by Athlone Chamber of Commerce. The report is intended to form the basis for a strategic action plan for the integrated development of Lough Ree; its most important recommendation is for the setting up of a locally-based, democratically-elected taskforce to carry the process forward. Note: copy of this report held by local NPWS ranger (Sue Moles).
Feasibility study report - Lough Ree Amenity Action Group	Ireland	10-25%	Anon (1997) Feasibility study report - Lough Ree Amenity Action Group. Note: copy of this report held by local NPWS ranger (Sue Moles).
Turloughs over 10 hectares. Vegetation survey and evaluation.	Ireland	1-9%	Goodwillie, R. (1992). Turloughs over 10 hectares. Vegetation survey and evaluation. Unpublished report for the National Parks and Wildlife Services. Office of Public Works. Dublin. Includes survey of Fortwilliam Turlough, Longford.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
The Shannon floodlands - a natural history	Ireland	10-25%	Heery, S. (1993) The Shannon floodlands - a natural history. Tir Eolas, Ireland. A natural history of the Shannon callows. Over 200 species of vascular plants are reported in appendix 1
The biology and ecology of eels, <i>Anguilla anguilla</i> L., in the River Shannon.	Ireland	1-9%	Unpublished PhD thesis by Cullen, P.M., at University College Galway (1999). This study involved investigations on the demography, growth and trophic ecology of eels, <i>Anguilla anguilla</i> L., sampled by electrofishing in 1995-1997 at a series of sites in the Shannon, Ireland's largest river system (41,000 ha surface waters; 15,500 km <sup>2</sup> catchment area: mean annual discharge: 176m <sup>3</sup> sec <sup>-1</sup> ). Thirteen shallow littoral zone sites in Loughs Ree and Derg, and one in the lower River Shannon at Castleconnell were sampled monthly over an annual cycle. A further series of eleven sites in the River Mulcair tributary were sampled once. Seasonal variations in eel capture rates and estimated densities were observed, reflecting changes in water temperatures. Similar trends were noted in respect of eel feeding activities. Eels occurred in high densities in the lower River Shannon ( $x = 0.51$ eels m <sup>-2</sup> ) and in the lower reaches of the River Mulcair system, with much lower densities recorded in the lakes and the upstream River Mulcair sites.
			Age determinations (n=1832) indicated that eels samples from the lower River Shannon and Mulcair sites, had similar age frequency distributions to those from the lake sites. However, eels from the lower River Shannon and River Mulcair sites exhibited lower growth rates than those from Loughs Ree and Derg which were broadly similar. Between site variations in eel diets were recorded. However, invertebrate prey were predominantly taken: <i>Asellus</i> in the case of the lake eels samples and trichopteran larvae, ephemeropteran nymphs and <i>Gammarus</i> in the case of the riverine eels. The general absence of fish prey reflected the small sizes of eels sampled during the electrofishing surveys.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Biological Survey Of River Quality (EPA)	Ireland	1-9%	Biological and physico-chemical monitoring programme of Irish rivers and streams. The monitoring programme began in 1971 when An Foras Forbartha surveyed and classified the main Irish rivers and Tributaries. The Environmental Protection Agency (EPA) now run the programme and routinely survey and classify more than 1072 rivers and streams from biological inspections at some 3,100 locations (There are currently 67 River Survey Stations in Longford). One third of the sites are surveyed each year which means that the entire river network is surveyed every three years. The data generated by the programme provides scientifically based river quality data and enables the identification of pollution trends and changes at both a local and national level. The data from these surveys is aggregated once every three years to give a complete national picture - see associated publications. Associated reports: Interim Report on The Biological Survey of River Quality: Results of the 1998/ 99/00/01/02/03 Investigations. Data for 1998-2000 period can be accessed via a useful online interactive map on the EPA website <a href="http://www.epa.ie/rivermap/">http://www.epa.ie/rivermap/</a> ).
Lough Ree - An investigation of eutrophication and its causes.	Ireland	25-49%	Lough Ree : an investigation of eutrophication and its causes, J.J. Bowman (1996), EPA, Wexford. This study investigates the water quality status of Lough Ree and its principal feeder streams and explores options for reducing the phosphate load. The report is based on physical, chemical and biological measurements carried out by the EPA on between June 1993 and October 1994.
An electrophoretic study of genetic variation in Irish brown trout (Salmo trutta L.)	Ireland	25-49%	Unpublished PhD thesis by Taggart, J.B., (Queens University Belfast, 1981) Fifteen native trout population in the River Erne catchment were electrophoretically surveyed to determine the genetic variability within populations.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Salmon & Sea Trout Carcass Tagging Scheme Data	Ireland	1-9%	The Wild Salmon and Sea Trout Tagging Scheme provides information on commercial and recreational salmon and sea trout catches and fishing activity. The scheme was first introduced in 2001. The principal aims of the scheme are to provide a means of collecting accurate nominal catch statistics and estimates of salmon and sea trout stock exploitation, to develop best management strategies and to ensure these species are exploited in a manner consistent with their long term sustainability on a Regional, Fishery District and river basis. The scheme is also intended to identify illegally caught salmon, eliminate sales outlets for such fish and to introduce traceability into the distribution chain. Related reports: Salmon & Sea Trout Carcass Tagging Scheme - Fisheries Statistics Report, 2001 - 2003 (and 2003 - 2004), Central Fisheries Board, 2003 (and 2004). Available online: Online: <a href="http://www.cfb.ie/">http://www.cfb.ie/</a>
Studies on the ecology of the European eel, <i>Anguilla anguilla</i> L., with particular reference to the River Erne	Ireland	10-25%	Unpublished PhD thesis by Copley, L.A. (University College, Galway, 1999) Metazoan parasites of eels in the River Erne system were investigated using samples of silver eels (n=45) and yellow eels (n=18) obtained from the lower and upper regions of the catchment, respectively.
River Shannon lake water quality monitoring	Ireland	1-9%	Bowman, J.J. (2000) River Shannon lake water quality monitoring 1998 & 1999, EPA, Wexford.
Bats and Irish Waterways	Ireland	10-25%	Dr Niamh Roche (2001) Bats and Irish Waterways, Newsletter of the Inland Waterway Association of Ireland.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
The magic of the mayfly on the Shannon	Co. Longford	100%	J. Leech (2000) The magic of the mayfly on the Shannon, Inland Waterways News, Inland Waterways Association of Ireland.
Database for the Atlas of Freshwater Fishes	Ireland	1-9%	A collated information source on the distribution of all freshwater and estuarine fish species for Britain. The data are derived from a variety of sources and as such were collected by both professionals and volunteers. There are records from throughout the UK and some parts of Ireland, although recording density is strongest in England and Wales. Related publication: Davies, C. E., Shelley, J., Harding, P. T., McLean, I. F. G., Gardiner, R. & Peirson, G, (2004), Freshwater fishes in Britain - the species and their distribution, Harley Books, Colchester.
National Pearl Mussel database	Ireland	< 1%	National Pearl Mussel Database maintained by NPWS (Aine O' Connor). Much of the datasets currently held by the NPWS are paper based and relatively inaccessible e.g. it can be difficult to acquire records relating to a particular county or area. However, the NPWS are actively taking steps to digitise data and to make it more available to interested parties. Historical records of this species for Longford but no recent records.
Notes on the Irish Distribution of Freshwater Crayfish	Ireland	1-9%	Dataset of crayfish records from 1977 to 1982 for the whole of Ireland. Records of Shannon tributaries including Camlin, Inny and Tynageh stream and Erne. Also records for Lough Ree, White Lake, Lough Owel, Lough Glore and the Inny and Brosna rivers.  Reynolds JD (1982) Notes on the Irish distribution of the freshwater crayfish. Bulletin of the Irish Biogeographical Society 6, 18-24  Reynolds JD (1998) Conservation management of the white-clawed crayfish <i>Austropotamobius pallipes</i> . Part 1. Irish Wildlife Manuals No. 1, Dúchas The Heritage Service, Dublin

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Ecological Survey of the Royal Canal 1991.	Ireland	10-25%	Dromey, M, Johnston, B. and Nairn, R., (1991). Ecological Survey of the Royal Canal: final report 1990. Internal report for the waterways section and wildlife service of the Office of Public Works
The Grand and Royal Canals: an ecological perspective	Ireland	1-9%	Caffrey, J. M. and Johnston, B., 1998. The Grand and Royal Canals: an ecological perspective. In: Moriarty, C. (ed.) 1998 Studies of Irish Rivers and Lakes, 57-76. Dublin. Marine Institute.
Studies on recreational angling in the River Shannon system, together with observations on the ecology of brown trout <i>Salmo trutta</i> L. and pike <i>Esox lucius</i> L.	Ireland	10-25%	Unpublished MSc thesis by S. Breathnach, at University College Galway (1999), Studies on recreational angling in the River Shannon system.
A water balance of the Shannon catchment	Ireland	1-9%	Unpublished MSc. Thesis by Doyle, P., at University College Galway (1987). The water balance of the Shannon Catchment, i.e. the quantitative distribution of the total amount of available water among the various portions of the hydrologic cycle, was examined in detail. The recorded precipitation values were corrected for systematic error due to the raingauge. This resulted in an increase in the long-term mean annual rainfall of 9%. A technique for the areal averaging of distributed variables, particularly precipitation, was developed. Application of this technique to the precipitation data of 37 stations resulted in a long-term annual mean which was 8% lower than a simple arithmetic mean.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
A water quality study of Lough Gowna	Ireland	100%	Brady, Angela (1996) A water quality study of Lough Gowna, Unpublished MSc thesis: Sligo Institute of Technology.
The Shannon River Basin District Project	Ireland	10-25%	<p>The Shannon River Basin District Project is the main vehicle for delivering the objectives of the WFD within the Shannon River Basin District between January 2003 and December 2006. The project will provide the basis for an integrated River Basin Management System that will include provision and implementation of:</p> <ul style="list-style-type: none"> <li>* a comprehensive water quality monitoring system for all waters within the river basin district</li> <li>* a computerised (GIS) Management System</li> <li>* a programme of appropriate abatement measures</li> <li>* a public awareness and consultation programme</li> <li>* an Environmental Management System (EMS)</li> </ul>
			RPS Kirk McClure Morton, Consulting Engineers and Environmental Scientists, have been appointed to develop the River Basin Management System building on their experiences in successfully delivering the Lough Derg and Lough Ree Catchment Monitoring and Management System. Anon. Associated publication: (1999) Lough Derg & Lough Ree Catchment Monitoring and Management system; management proposals. -----Additional details provided online at: <a href="http://www.shannonrbd.com/">http://www.shannonrbd.com/</a>
A Preliminary Survey of Irish Lakes	Ireland	1-9 %	Flanagan, P.J. and Toner, P.F. 1975. A Preliminary Survey of Irish Lakes. Dublin. An Foras Forbartha.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Waterways Corridor Studies (Royal Canal and River Shannon)	Ireland	25-49%	<p>A survey of part of the Royal Canal and the River Shannon to identify how the waterway corridor could be managed for the optimum benefit to all: heritage, land-based users, and water-based users. This included retaining the distinctiveness of the corridor, while allowing for development and evolution. The study covered heritage, landscape, recreation and tourism, education and interpretation, access, county development plans and local heritage plans. A Pilot Waterway Study was completed in 2002. This study covered the Grand Canal from Ballycommon westward to the Shannon and the Shannon from Shannonbridge south to Meelick. Two further waterway corridor studies were completed in April 2004; one along the Shannon, from Shannonbridge to Lanesborough including all of Lough Ree, and a further study of the River Suck from the Shannon to Ballinasloe. The second study covers the Royal Canal from Thomastown to the Shannon and from Lanesborough to Roosky. Both studies built on the experience of the pilot corridor study.</p>
			<p>Related publication: Buchannan C. and Partners, Cronin J. and Associates, Hammond, F., and Browne, A. (2004) Waterways Corridor Study 2004 - A study of the area surrounding Lanesborough to Shannonbridge. Heritage Council, Kilkenny.</p> <p>Cunnane Stratton Reynolds (2004) The Shannon River between Roosky and Lanesborough; The Royal Canal between Cloondara and Thomastown. Heritage Council, Kilkenny.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Ecology Report: Waterways Corridor Study 2003 - Shannon Navigation and Royal Canal.	Co. Longford	25-49%	The study area was investigated by White Young Green to determine significant elements of the heritage of the waterways corridor in terms of its natural heritage value. The ecological assessment comprised largely of desktop research with a short preliminary field assessment. The methodology followed the plan outlined below: • Documentary research and consultation with regard to habitats, flora and fauna. • Preliminary field assessment of the waterways corridor. This was conducted by barge or boat. Non-navigable sections of the canal were visited on foot or by car. • From the above processes, key aspects of the natural heritage in the corridor were identified. • Key aspects were assessed with regard to their significance on a local, regional, national or international level. • Key sites and areas of highest nature conservation value on the corridor were identified, along with the most vulnerable and sensitive sites.
A Preliminary Study of the Upper Shannon Floodplain. Draft report	Co. Longford	10-25%	Browne Dunne Roche Consulting Ecologists, 2002. A Preliminary Study of the Upper Shannon Floodplain. Draft report. Dúchas The Heritage Service, Dept. of Arts, Heritage, Gaeltacht and the Islands.
Shannon Regional Fisheries Board Information.	Ireland	10-25%	Shannon Regional Fisheries Board Website . Provides detailed information on individual rivers within the catchment area including: Species occurrence and Fishing regulations (catching season, size limit, daily limit, permitted methods, access etc.). Also periodic fisheries statistics in the form Game fishing reports and Coarse Fishing Reports. Website: <a href="http://www.shannon-fishery-board.ie/index.htm">http://www.shannon-fishery-board.ie/index.htm</a> . Note that local Fisheries Board contact is Fergus Lynch (071-9624210 / 087-2250471)

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Distribution of the zebra mussel <i>Dreissena polymorpha</i> (Pallas) in Ireland, 1997	Ireland	10-25%	Report describing the distribution of the Zebra mussel in Ireland (Mr D. Minchin & C. Moriarty). Report based on: 1) specimens found in fyke-net by-catch in August 1997; 2) interviews with boat owners, fishery protection staff; and 3) sampling on the Shannon , Grand Canal and Barrow over 7 days in August 1997.  Associated publication: Minchin, D. & Moriarty, C., 1999. Distribution of the zebra mussel <i>Dreissena polymorpha</i> (Pallas) in Ireland, 1997. <i>The Irish Naturalists' Journal</i> .
Crayfish Dataset for Britain and Ireland	Ireland	<1%	Dataset held by the British Records Centre - data last uploaded 14th July 2004. Dataset includes records from Ireland - good coverage of the Longford and the Midlands. Further details and distribution maps at NBN website: <a href="http://www.searchnbn.net">http://www.searchnbn.net</a> .
National Crayfish Database (NPWS)	Ireland	1-9%	National NPWS dataset maintained by Naomi Kingston (NPWS). Good coverage of Longford and the Midlands. The NPWS has recently issued a tender to digitise the existing crayfish data which is not directly accessible at the present time. This contract is scheduled for delivery in 2006 and the data will be made available as a GIS layer on the new NPWS website ( <a href="http://www.npws.ie/">http://www.npws.ie/</a> ).

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Mollusc (non-marine) data for Great Britain and Ireland	Ireland	1-9%	The records in this dataset are the results of the Conchological Society's non-marine census which has been run since 1876. The dataset includes all the records available up to the time of the publication of the atlas in 1999. However almost all the records were only digitised to the nearest 10km square. Work is currently underway to re-digitise at a finer spatial scale. All the survey data were collected by members of the Conchological Society and are derived from British Records Centre recording cards input to electronic format in BRC. Data held by Conchological Society of Great Britain and Ireland and also published online via NBN gateway at: <a href="http://www.searchnbn.net/">http://www.searchnbn.net/</a> . Note that this dataset was used as the basis of the atlas publication: Kerney, M. P. 1999. Atlas of the land and freshwater molluscs of Britain and Ireland. Colchester: Harley Books.
Longford land and freshwater Mollusca	Co. Longford	100%	Welch, R.J. (1902) Longford land and freshwater Mollusca. The Irish Naturalist, Vol 11, Page 174.
The Shannon and Lough Ree	Ireland	10 - 25%	Stokes, G.T., Burgess, J., 1897. Athlone, The Shannon and Lough Ree. Burgess & Son Ltd., Athlone.
Derg and Ree catchment monitoring: final report or new beginning?	Ireland	25 - 49%	Mackey, P., Derg and Ree catchment monitoring: final report or new beginning? Inland Waterways News, 28 (3), 1-3

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Observations on the biology and mass occurrence of Ophrydium versatile and associated algae in Lough Ree, Ireland	Ireland	25 - 49%	Eaton, J.W., Carr, G., 1980. Observations on the biology and mass occurrence of Ophrydium versatile and associated algae in Lough Ree, Ireland. Irish Naturalists' Journal, 20 (2), 55-60.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
GEOLOGY			
GSI Quaternary Maps	Ireland	1-9%	A set of mainly 1:25k paper maps, but also a full national set of 19th /early 20th century 6" Quaternary maps (in quarters and 8ths), all currently in the process of being digitised in AutoCAD. The main counties covered by the 1:25k maps are Wicklow, Kildare, Meath, Monaghan, Longford, Clare, Kilkenny, Laois, Limerick, Offaly, Waterford and partially Mayo, Louth, Westmeath and some misc. areas. A catalogue exists for these maps which is currently being updated and migrated from Word to Excel. Data recorded on the maps includes morphology, DTB, sediment type, vegetation and esker location (nationwide paper and digital coverage at 1:25k). Quaternary sample data is also included on the 1:25k maps. The maps together with the catalogue constitute the dataset.
Geology and mineralisation of the Keel area, County Longford, Republic of Ireland	Co. Longford	100%	Patterson, J.M. (1970) Geology and mineralisation of the Keel area, County Longford, Republic of Ireland, Unpublished PhD thesis: London, Imperial College of Science and Technology.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
The geology of the western end of the Lower Palaeozoic Longford-Down inlier, Ireland.	Co. Longford	100%	Morris, J.H. (1980) The geology of the western end of the Lower Palaeozoic Longford-Down inlier, Ireland, Unpublished PhD thesis: Trinity College Dublin.
The Lower Carboniferous geology of part of counties Longford and Westmeath, central Ireland	Ireland	25-49%	PhD thesis, completed by F.J. MacCarthy in 1991. The Lower Carboniferous rocks of part of Counties Longford and Westmeath (300km <sup>2</sup> ) have been mapped and put into a stratigraphical framework. The succession studied is of Courceyan to Chadian-Arundian age and has been divided into nine formations. The cementation history of each formation is described, and linked to the stratigraphic record by using a volcanic brecciation event as a marker
Geology of Longford-Roscommon (Geological Survey of Ireland)	Ireland	25-49%	Geology of Longford- Roscommon : a geological description of Roscommon, Longford, Westmeath, and adjoining parts of Cavan, Leitrim and Galway to accompany the bedrock geology 1:100,000 scale map series, sheet 12, Longford -Roscommon. Booklet: J.H. Morris, I.D. Somerville and C.V. MacDermot. (2003). This booklet gives an introduction to the geology and a brief geological history for the selected area. There are also sections which cover the Quaternary Geology, selected Metallic and Industrial Mineral locations and Hydrogeology of the area. This is followed by a description of the geological units, structure, deformation, metamorphism (as appropriate) and igneous intrusions. The booklet is accompanied by a colour map which shows the distribution of rock units interpreted to lie beneath the superficial cover of soil and glacial deposits. The maps also show the location of selected mineral deposits.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Map: Compiled by: M. Geraghty, C.V. MacDermott &amp; D.C. Smith (1999). The map sheet contains: (1) The main map area, on which are shown the geological units and their relationships; a selection of dip and strike and other structural data; a selection of fold axial traces; selected mineral occurrences. (2) A legend explaining the codes and colours used on the main map, together with the names of geological units and an abbreviated description of each. (3) Marginalia data consists of Simplified geology at ~1:500,000 Scale, lateral relationships of stratigraphic units and the principal data sources which have been used in the compilation of the map.</p>
Corine Land Cover (CLC) map	Ireland	1-9%	<p>Corine Land Cover (CLC) is a map of the European environmental landscape intended for use by policy makers as well as others. Based on interpretation of satellite images, CLC provides comparable digital maps of land cover for each country for much of Europe. This is useful for environmental analysis and comparisons as well as for policy making and assessment. No other land cover information programme in the world covers such a wide geographical area in such detail. The CLC 2000 project in Ireland forms part of the update of land cover maps for the whole of Europe, which is being coordinated by the EEA with the cooperation of national competent authorities in contributing states. The smallest mapped unit in CLC is of 25 ha, recognizing landscape units as systems; as a consequence CLC gives a fair description of land units surface and distribution as well as of trends in change. Full details available at EPA website: <a href="http://www.epa.ie">http://www.epa.ie</a>.</p>
Directory of active quarries, pits, and mines in Ireland	Ireland	1-9%	<p>Doyle, E. (2001) List of active quarries and pits in Ireland. Directory of active quarries, pits, and mines in Ireland, GSI, Dublin.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Sedimentology of late Devensian deglacial deposits in the Lough Ree area, central Ireland.	Ireland	25-49%	<p>Delaney, C. (1996) Sedimentology of late Devensian deglacial deposits in the Lough Ree area, central Ireland. Unpublished PhD Thesis, Trinity College Dublin. This dissertation is a study of the late Devensian deglaciation of the Lough Ree basin, central Ireland. The landforms created during this period have been studied in order to model the processes of lowland terrestrial deglaciation. In particular, attention has been given to the formation of eskers and lowland hummocky moraine, for, while these features are commonly associated with regional deglaciation, the conditions under which they form are poorly understood.</p> <p>The field area was studied initially by mapping of the Quaternary geology of the area, paying particular attention to the landforms. This was carried out initially using vertical aerial photographs, and then by detailed field mapping. Once landforms were identified, four eskers (the Ballymahon, Moyvore, Rooskagh and Athlone eskers) were selected for further study.</p>
The lower carboniferous geology of South County Longford	Co. Longford	100%	<p>E. Crean (1988) The lower carboniferous geology of South County Longford. Unpublished MSc thesis, Trinity College Dublin. The area described is the southern part of the Ordnance Survey of Ireland's 1:50,000 sheet 41W which includes the southern part of county Longford and a very small part of north county Westmeath. The cover sequence of Lower Carboniferous rocks overlying Lower Palaeozoic basement is examined. Mapping was carried out at a scale of 6' to 1 mile and compiled at a scale of 1:25,000. A detailed study of the sedimentology and diagenesis of the carbonate peritidal sequences of the Ardnacassagh Formation was undertaken.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
BIRDS			
The status of the buzzard as a breeding species in the Republic of Ireland, 1977-1991	Ireland	<1%	DW Norriss (1991) The status of the buzzard as a breeding species in the Republic of Ireland, 1977-1991. Irish Birds vol 4, number 3, 1991, pages 291-298. A study on the recent growth and spread of the Buzzard breeding population in the Republic of Ireland from 1977 - 1991. The collation of records was made by telephone in June 1991. Respondents to the inquiry were personal contacts within the NPWS, the Irish Wildbird Conservancy (IWC) and the general public.
Population changes of the Hen Harrier in Ireland.	Ireland	1-9%	O'Flynn W.J. (1983) Population changes of the Hen Harrier in Ireland. Irish Birds, Vol.2, No. 3, p337-343. In this paper the fluctuations of the Hen Harrier population in Ireland are reviewed with particular emphasis on its recent decline, the causes of which are discussed
Birds of Conservation Concern in Ireland.	Ireland	1-9%	Newton, S., Donaghy, A., Allen, D. & D. Gibbons. 1999. Birds of Conservation Concern in Ireland. Irish Birds 6(3) 333-344. A quantitative and qualitative review of all available information on the distribution, abundance and population trends of regularly occurring birds on the island of Ireland was undertaken. A series of criteria were developed that paralleled the "Birds of Conservation" initiative in the U.K., to identify species of high, medium and low conservation priority.
Irish Bird Report - dataset of rare birds	Ireland	1-9%	This dataset lists all records of rare birds seen in Ireland which are submitted to the annual Irish Bird Report. This dataset was formerly published separately as the Irish Bird Report 1953 - 1975, but from 1976 onwards is published in the journal Irish Birds.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
A Breeding Census of Mute Swans in Ireland in 1978.	Ireland	1-9%	Forsyth I. (1980) A breeding census of Mute Swans in Ireland in 1978. Irish Birds, Vol.1; No. 4, p492-501. This census, carried out in co-operation with the Wildfowl Trust, was part of a European survey of Mute Swans.
The Breeding Population of the Peregrine Falcon in Ireland in 1981	Ireland	1-9%	Anon (1982) Survey of the Peregrine Falcon breeding population in the Republic of Ireland in 1981. Department of Fisheries & Forestry, Forest & Wildlife Service, Dublin. The breeding biology of the Peregrine Falcon <i>Falco peregrinus</i> has been discussed in detail by Ratcliffe (1980). Newton (1979) and Ratcliffe (1980) have reviewed the characteristics of population declines caused by organochlorine pesticides from the 1950s to the 1970s. The extent of the recovery of the population remained unclear in the Republic of Ireland (Temple Lang 1980). In 1981 separate surveys were co-ordinated by the Royal Society for the Protection of Birds in consultation with Conservation Branch of the Department of the Environment in northern Ireland and the department of Fisheries and Forestry, assisted by the Irish Wildbird Conservancy, in the Republic to complement a national survey in Britain. This paper presents a summary of the combined results of both surveys.
Breeding sites of Peregrine Falcon in County Longford.	Longford	100%	Breeding sites of Peregrine Falcon in County Longford. Unpublished data held by the regional NPWS office (Sue Moles, NPWS Ranger, Moyne District Office, Moyne, Co Longford). Note: this is sensitive data which will not be made available to the general public.
Whooper Swans in Ireland, January 1986	Ireland	1-9%	Merne O.J., Murphy C.W. (1986) Whooper Swans in Ireland, January 1986. Irish Birds, Vol 3; No. 2, p199-206. The first full census of Whooper Swans was carried out in Ireland in mid January 1986. A total of 10,320 Whoopers was recorded , 2,377 in Northern Ireland and 7,943 in the Republic.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
BTO Atlases of Breeding Birds in Britain and Ireland	International	<1%	The BTO Atlases are the source of information on the distribution and abundance of British and Irish birds. Three atlases have been produced to date: Breeding Atlas I, - Fieldwork 1968-72; Winter Atlas, - Fieldwork 1981/82-83/84; Breeding Atlas II - Fieldwork 1988-91. The aim in covering a square was to record every species breeding in it and, if possible, to prove breeding for each one. To this end, the main guidance given to observers was that they should visit samples of every different habitat in the square during the main breeding season of April to July, to make visits outside this period for certain species (e.g. in February or March for owls) and to make dusk and night visits for crepuscular and nocturnal species.
			Three grades of evidence of breeding were used for records – possible, probably and confirmed. Note that a more detailed account of the survey method is provided in the BTO website: <a href="http://www.bto.org/atlases/methods.htm">http://www.bto.org/atlases/methods.htm</a> . Most recent publication relating to the dataset is "New Atlas of Breeding Birds in Britain and Ireland: 1988-91" by Gibbons, D.W., Chapman, R. & Reid, J. Also publication by Lack, P.C. (1986). The Atlas of Wintering Birds in Britain and Ireland. T. & A.D. Poyser, Calton
National Association of Regional Game Councils (NARGC): Bag Returns Database - annual records of gamebirds shot in Ireland	Ireland	1-9%	The National Association of Regional Game Councils (NARGC) has 23,000 members who are spread throughout 895 gun clubs throughout the country. The association monitors the activities of members through the Bag Return Research Project. This project provides a detailed account of the number of gamebirds shot in each county each year. NARG also maintain a register of annual data on gamebird predators (1990-present) and also produce an annual snipe and woodcock report.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Ireland's Wetland Wealth: the birdlife of the estuaries, lakes, coasts, rivers, bogs and turloughs of Ireland.	Ireland	1-9%	Ireland's Wetland Wealth: the birdlife of the estuaries, lakes, coasts, rivers, bogs and turloughs of Ireland. Sheppard, R. (1993) IWC, Dublin. This is a complete guide to the birdlife of Ireland's wetlands compiled from the results of the Winter Wetlands Survey 1984 - 1987. Included is a profile of the main Irish wetland sites across the country in terms of local/regional, national and international importance. The Longford sites are categorised as follows: Internationally Important (Glen Lough); Nationally Important (Lough Ree, Lough Kinale/Derragh Lough, Lough Gowna); and Regionally Important (Upper River Shannon). A follow-up to this publication has recently been published by Olivia Crowe: Crowe, O (2004) Ireland's Wetlands and their Waterbirds: Status and Distribution. This book is presented in the similar format to the above and provides up-to-date analysis on I-WeBS and WeBS data collected over 7 seasons from 1994-2001.
Bird monitoring on the Mall in Longford (Paul Higgins).	Co. Longford	100%	Paul Higgins (Birdwatch Ireland recorder in Longford) is undertaking an ongoing, informal survey of birds in the Mall in Longford. Paul also participates in many of the national/ regional bird surveys and regularly contributes records to Birdwatch Ireland. He is keen to promote community involvement in bird recording and can be contacted on (043) 46498 or 087 9545384.
Irish Red Grouse Survey, Spring 1999 - Spring 2000	Ireland	1-9%	Unpublished report produced by NARGC: Henderson, A., Tierney, D (2000). Survey Undertaken by the National Association of Regional Game Councils (NARGC) with financial assistance from the Heritage Council. Data was generated primarily by NARGC members while on shooting excursions. Data gathered by: direct observation of territorial encounters between males; location and counting of birds using pointing dogs; and also by shooting bag returns.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
The breeding distribution of the Common Scoter in Ireland	Ireland	1-9%	Ruttledge, R.F., 1987. The breeding distribution of the Common Scoter in Ireland. Irish Birds, 3, 417-426. [minimum of 40 pairs on L. Ree, 1985-86]
A pre-breeding census of common scoters in Ireland in 1995	Ireland	1-9%	Gittings, T., Delany, S., (1995). A pre-breeding census of Common Scoters in Ireland in 1995. Irish Birds, 5, 413-422. The Irish Inland population of Common Scoters ( <i>Melanitta nigra</i> ) was surveyed between April and June 1995. All known breeding sites and six additional sites were surveyed.
Status and distribution of breeding Common Scoters <i>Melanitta nigra nigra</i> in Britain and Ireland in 1995	Ireland	1-9%	Underhill, M., Gittings, T., Callaghan, D.A., Hughes, B., Kirby, J.S., Delany, S., 1998. Status and distribution of breeding Common Scoters <i>Melanitta nigra nigra</i> in Britain and Ireland in 1995. Bird Study, 45, 146-156
The Greenland white-fronted goose <i>Anser albifrons flavirostris</i> in Ireland	Ireland	1-9%	Fox-Anthony-D ; Norriss-David-W; Stroud-David-A; Wilson-H-John; Merne (1998) The Greenland white-fronted goose <i>Anser albifrons flavirostris</i> in Ireland. Wildlife-Biology 1: 1-12. Following protection from hunting on the wintering range in 1982/83, complete surveys of Greenland white-fronted geese at all known Irish and British wintering resorts have been carried out annually. This report provides a review of the survey counts and the literature from that period.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
A national survey of breeding Hen Harriers <i>Circus cyaneus</i> in Ireland 1998-2000	Ireland	1-9%	Norriss, D.W., Marsh, J., McMahon, D. & Oliver, G.A. (2002) A national survey of breeding Hen Harriers <i>Circus cyaneus</i> in Ireland 1998-2000. <i>Irish Birds</i> 7: 1-10. The first breeding survey of Hen Harriers in Ireland was undertaken in 1998-99, with additional fieldwork in 2000 to plug some remaining gaps in coverage.
The Irish Wetland Bird Survey (I-WeBS)			The Irish Wetland Bird Survey (I-WeBS) is the national monitoring project for non-breeding waterbirds, wintering in Ireland, organised by BirdWatch Ireland, the NPWS section of the Department of Environment, Heritage and Local Government, and The Wildfowl & Wetlands Trust, and supported by The Heritage Council. Note that Birdwatch Ireland produce an annual report based on the results of each survey:

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Crowe, O (2004) Ireland's Wetlands and their Waterbirds: Status and Distribution. Birdwatch Ireland, Dublin</p> <p>Tierney, D T, Hudson J, Casey C (2002) Survey of breeding waders on the River Shannon Callows 2002. Irish Birds Vol 7 Number 1.</p> <p>Colhoun, K. (2002) Waterbird monitoring in Ireland 2000/ 01: Results of the seventh year of the Irish Wetland Bird Survey. Irish Birds Vol 7 Number 1</p> <p>Colhoun, K. (2001) Irish Wetland Bird Survey, 1999-00: summary of the sixth I-WeBS season. I-WeBS News 6: 2-14.</p> <p>Couhoun, K, Newton S.F (2000) Winter waterbird poplations on non-estuarine coasts in Ireland, results of 1997098 Non-Estuarine Coastal Waterfowl Survey (NEWS) Irish Birds Vol 6 Number 4.</p> <p>Colhoun, K. (2001) I-WeBS Report 1998-99. Results from the fifth winter of the Irish Wetland Bird Survey. BirdWatch Ireland, Dublin.</p> <p>Colhoun, K. (2000) I-WeBS Report 1997-98. Results from the fourth winter of the Irish Wetland Bird Survey. BirdWatch Ireland, Dublin.</p> <p>Colhoun, K. (1999) I-WeBS Report 1996-97. Results from the third winter of the Irish Wetland Bird Survey. BirdWatch Ireland, Dublin</p> <p>Delany, S. (1997) I-WeBS Report 1995-96. Results from the second winter of the Irish Wetland Bird Survey.</p> <p>Delany, S. (1996) I-WeBS Report 1994-95. Results from the first winter of the Irish Wetland Bird Survey.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Longford areas covered by the I-WeBS as follows:</p> <p>Sub-Site Code Site Sub-site S-s Grid Ref</p> <p>0F005 Annagh Lough Annagh Lough N217923</p> <p>0F303 Cordara Turlough Cordara Turlough N030635</p> <p>0F011 Currygrane Lough Currygrane Lough N234777</p> <p>0F014 Doogary Lough Doogary Lough N205952</p> <p>0F302 Fortwilliam Turlough Fortwilliam Turlough N015633</p> <p>0F010 Gorteen Lake Gorteen Lake N227795</p> <p>0F004 Leebeen Lough Leebeen Lough N265893</p> <p>0F006 Lough Forbes Lough Forbes N080820</p> <p>0F013 Lough Gowna Durracaun Lake N303870</p> <p>0F083 Lough Gowna Mullinroe Lough N322862</p> <p>0F085 Lough Gowna Lough Gowna (North) N280915</p> <p>0F096 Lough Gowna Lough Gowna (South) N280870</p> <p>0F097 Lough Gowna Scrabby Bridge N320900</p> <p>0F094 Lough Kinale &amp; Derragh Lough Kinale &amp; Derragh (Entire site) N390811</p> <p>0F095 Lough Kinale &amp; Derragh Lough Lough Kinale N383810</p> <p>0F099 Lough Kinale &amp; Derragh Lough Derragh Lough N394795</p> <p>0F007 Lough Ree Entire Site N020530</p> <p>0F008 Lough Ree Pollagh Point - Lanesborough N000590</p> <p>0F009 Lough Ree Muckanagh - Pollagh Point N0755</p> <p>0F059 Lough Ree Elfeet Bay N585020</p> <p>0F060 Lough Ree Derrymacar Lough N080585</p> <p>0F084 Lough Ree Inny mouth - Lanesborough N0258</p> <p>0F086 Lough Ree East of Saint's Isl. N083565</p> <p>0F088 Lough Ree East of Arnee Pt. N085555</p> <p>0F015 Lough Ree (Aerial) Pollagh Point - Lanesborough N000590</p> <p>0F016 Lough Ree (Aerial) Muckanagh - Pollagh Point N0755</p> <p>0F301 Turreen Turlough Turreen Turlough N018650</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Status of the Corncrake in Ireland - various studies	Ireland	1-9%	<p>A survey of the Corncrake population of Ireland in 1993 indicated a total of 174 singing males, a decline of 81% since 1988. Declines were apparent in all of the core areas identified in 1988, but numbers on the Shannon Callows fell by the smallest proportion (31%). Causes of the continuing decline and conservation measures are discussed. Findings for Longford showed that numbers of singing Corncrakes were 5 in 1978, 6 in 1988 and 0 in 1993. Associated publications:</p> <p>Norris, C. A. (1947) Summary of a report on the distribution and status of the corncrake (<i>Crex crex</i>). <i>British Birds</i> 38: 142-148, 162-168</p> <p>O'Meara, M. (1979) Distribution and numbers of corncrakes in Ireland in 1978. <i>Irish Birds</i> 1: 381-405</p> <p>O'Meara, M (1986) Corncrake declines in seven areas, 1978-1985</p> <p>Mayes and Stowe (1989), The status and distribution of the Corncrake in Ireland, 1988. <i>Irish Birds</i> 4: 1-12</p> <p>Sheppard, R. and Green, R. E. (1994) Status of the Corncrake in Britain and Ireland in 1993. <i>Irish Birds</i> 5: 125-138</p>
Bird ringing database (NPWS)	Ireland	<1%	National bird ringing database (including schedules and recoveries for birds) held by the NPWS. The database is a subset of a larger database maintained by the British Trust for Ornithology (BTO).

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Countryside Bird Survey (CBS)	Ireland	1-9%	<p>The Countryside Bird Survey (CBS) is a national research project being conducted by BirdWatch Ireland volunteers and NPWS wildlife rangers to monitor bird population trends, throughout the Irish countryside. The project was launched in 1998 and is supported by funding from the Heritage Council, Department of Environment, Heritage and Local Government, and previous funds from the ESB for CBS training programme.</p> <p>This survey, which runs from April to June each year, provides vital scientific data on the abundance and distribution of Ireland's breeding bird populations. Longer term objectives include trend analysis and the production of indices for each breeding species. The survey runs in parallel with similar surveys in Northern Ireland and Britain and links with corresponding research work throughout Europe.</p> <p>The CBS covers the following squares in county Longford: N0060, N1070, N2080, N2090, N3000, N3080</p>
Dipper in County Longford	Co. Longford	100%	Anon. 1913 Dipper in County Longford. Irish Naturalist 22: 236
Bird life at Currygrane, Co. Longford	Co. Longford	100%	Mackay Wilson, J. 1918 Bird life at Currygrane, Co. Longford. Irish Naturalist 27: 111
A jay in Co. Longford	Co. Longford	100%	Mackay Wilson, J. 1918 A jay in Co. Longford. Irish Naturalist 27: 174
Little bustard in Co. Longford	Co. Longford	100%	Anon. 1895 Little bustard in Co. Longford. Irish Naturalist 4: 105

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
International Swan Census	International	<1%	<p>5 yearly census of both Whooper and Bewick migratory swan species, which visit Ireland each winter. This is an international census, with data from Ireland counts contributing to the overall picture for both species. The aim of this species specific census is to monitor such species, in more detail than that in Irish Wetland Bird Survey counts.</p> <p>Related publication: Colhoun, K., McElwaine, J.G., Cranswick, P.A., Enlander, I., Merne, O.J (2000) Numbers and distribution of Whooper <i>Cygnus cygnus</i> and Bewicks's <i>C. columbianus bewickii</i> Swans in Ireland: results of the International Swan Census, January 2000. <i>Irish Birds</i> 6 pp 485-494</p>
Census of Golden Plover in Europe	Ireland	1-9%	<p>During mid-October 2003, The Wader Study Group (WSG) co-ordinated the first international count of Golden Plover covering large parts of western Europe. The objectives were to determine</p> <ul style="list-style-type: none"> <li>- How many Golden Plover are in different states</li> <li>- Where are the important sites along the migration routes</li> <li>- What are count changes since last survey 10 years ago.</li> </ul> <p>Wintering populations in Ireland are mostly visitors from Iceland and Faeroes. Recorded data shows 52 sites and 24K birds counted in Ireland. This represents one tenth of the Irish mid-winter population.</p>
Winter movements of Whooper Swans visiting Ireland: preliminary results.	Ireland	1-9%	<p>In 1980 a programme of ringing Whooper Swans using uniquely engraved Darvic leg-bands was initiated by the Wildfowl &amp; Wetlands Trust at their reserves at Caerlaverock, Dumfries, south-west Scotland and at Welney, Norfolk, England. In the period covered by this paper (1979/80-1993/94) 2,898 sightings were made in Ireland involving 574 out of a total 2,572 swans ringed.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Bird usage count data for Longford SPAs 2001-2005	Longford	100%	Bird usage count data for Longford SPAs 2001-2005. Unpublished data held by the regional NPWS office (Sue Moles, NPWS Ranger, Moyne District Office, Moyne, Co Longford).
Occurrence of the garden warbler around Lough Ree and Cavan	Ireland	25_50%	Lovatt, J. (1997) Occurrence of the garden warbler around Lough Ree and Cavan, 1955-1997. Irish Birds 6(1): 58-60
Garden Bird Survey	Ireland	<1%	The Garden Birdwatch Survey is an annual informal survey of garden birds in Ireland organised by Birdwatch Ireland. Their information contributes to the knowledge of how Ireland's garden birds are faring and allows identification of trends in population size, as well as weather related movements and migrations from year to year. Note that there are 10 participants in County Longford.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
VASCULAR PLANTS AND LOWER PLANTS			
New Atlas of the British & Irish Flora 2002	Ireland	1-9%	<p>New Atlas of the British and Irish Flora. C D Preston, D A Pearman &amp; T D Dines, (2002). Oxford University Press. The database of 8.9 million records contains the distributions of 4269 taxa of flowering plants and ferns. The collated databases include those of Botanical Society of the British Isles (BSBI) Vice County recorders and some species specific databases, each of which is itself a collation of many sources (and of each other). Data collected for the 1962 Atlas of the British Flora are also included. An up-to-date summary of the range of British and Irish species, this is a definitive account of the current distribution of vascular plants, with distribution map and text for nearly 2500 plants and ferns.</p> <p>Related publication: The New Atlas of the British &amp; Irish Flora, by C.D. Preston, D.A. Pearman &amp; T.D. Dines, 2002, Oxford University Press</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Bryophyte data for Great Britain and Ireland from the British Bryological Society (held by British Records Centre)	Ireland	1-9%	<p>The dataset comprises records collected for the Bryophyte Recording Scheme, as well as those extracted from literature and museum sources (between 1963 and 1993). Geographical coverage: Great Britain, Ireland, Isle of Man, Channel Islands. Atlases of mosses and liverworts published individually as follows: Hill, M.O., Preston, C.D. &amp; Smith A.J.E. (editors) 1991. Atlas of the bryophytes of Britain and Ireland. Volume 1: Liverworts (Hepaticae and Anthocerotae). 352pp. Colchester: Harley Books.</p> <p>Hill, M.O., Preston, C.D. &amp; Smith, A.J.E. (editors) 1992. Atlas of the bryophytes of Britain and Ireland. Volume 2: Mosses (except Diplolepideae). 400 pp. Colchester: Harley Books.</p> <p>Hill, M.O., Preston, C.D. &amp; Smith, A.J.E. (editors) 1994. Atlas of the bryophytes of Britain and Ireland. Volume 3: Mosses (Diplolepideae). 420 pp. Colchester: Harley Books.</p>
Census catalogue of lichenicolous fungi of Ireland	Ireland	1-9%	<p>Dataset held by National Botanic Gardens. A checklist of basidiomycete, ascomycete and mitosporic fungi on lichen hosts known to occur in Ireland is presented. 150 species are treated. The census catalogue summarises the known distribution of each species in the forty vice-country divisions of Ireland.</p>
Census Catalogue of Alien Plants in Ireland	Ireland	<1%	<p>A checklist of the Alien Plants known to occur is presented. The census catalogue summarises the known distribution of each species in the forty vice-county divisions of Ireland. Related publication: Reynolds, S.C.P. (2002) A catalogue of alien plants in Ireland. Occasional Papers 14. National Botanic Gardens, Dublin</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Rare Bryophyte survey	Ireland	<1%	Dataset relating to survey of rare Irish Bryophytes held by Neil Lockhart at NPWS. Much of the datasets currently held by the NPWS are paper based and relatively inaccessible e.g. it can be difficult to acquire records relating to a particular county or area. However, the NPWS are actively taking steps to digitise data and to make it more available to interested parties.
A report of aquatic plants (including the Characeae) and aquatic vegetation found at 33 locations in Ireland, summer 1999	Ireland	1-9%	Dataset of aquatic plants and vegetation found at 33 locations during a visit by the Swamp Study Group of the Royal Dutch Natural History Society to Ireland in 1999. Includes records for Royal Canal in Killashee, Co Longford.  Related publication: Bruinsma, J. (2003) A report of aquatic plants (including the Characeae) and aquatic vegetation found at 33 locations in Ireland, summer 1999. Irish Naturalists' Journal Vol 27: 5, 198-207.
Census catalogue of Irish Hornworts	Ireland	1-9%	A checklist of the hornworts known to occur is presented. The census catalogue summarises the known distribution of each species in the forty vice-county divisions of Ireland.
Vice-County Distribution of Irish Lichens.	Ireland	1-9%	A census catalogue of Irish lichens (completed 1994), based on vice-county distribution, enumerates 1050 lichen taxa (including four subspecies, thirteen varieties and two forms) and 25 taxa of lichenicolous fungi and non-lichenised fungi. Note that many of the above records are published in "Atlas of the lichens of the British Isles Seaward", M.R.D. & Hitch, C.J.B. (editors) (1982) Cambridge: Institute of Terrestrial Ecology. Other related publications: Seaward, M.R.D. (1984) Census Catalogue of Irish Lichens, Glasra, Dublin.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Plant records from Co. Longford	Ireland	100%	Curran, P.L. & Howard, S. (1986) Plant records from Co. Longford. Irish Naturalists' Journal Vol 22: 1 P40.
A Flora of County Longford	Co. Longford	100%	A flora of County Longford completed by Sean Howard (current BSBI recorder for Longford) as part of Masters thesis at University College Dublin in 1996. The flora is comprised of records generated by field work undertaken from the late 1970s until 1986. The work is unpublished.
Rare and threatened plant database (NPWS)	Ireland	1-9%	The rare plant database is held by the NPWS. In 2004, BEC Consultants commenced work on a project for the National Parks & Wildlife Service with the aim of establishing a rare and threatened plant database using the Recorder 2002 computer package. Previously, records for these species were mostly available in paper format only. The advantages of the Recorder 2002 database include improved data management capabilities and a mapping facility. Data was collected from the 18th century to the present and there is everything from casual observations to detailed species lists, population counts and location maps. Records for Longford as follows: <i>Acinos arvensis</i> , <i>Campanula trachelium</i> , <i>Erigon acer</i> , <i>Erigon acer</i> , <i>Frangula alnus</i> , <i>Juncus compressus</i> , <i>Lathyrus palustris</i> , <i>Lathyrus palustris</i> , <i>Papaver hybridum</i> (protected species), <i>Scandix pecten-veneris</i> , <i>Scandix pecten-veneris</i> , <i>Scandix pecten-veneris</i> , <i>Stachys officinalis</i> (protected species), <i>Teesdalia nudicaulis</i> , <i>Viola persicifolia</i> .
			Note that Longford was included in a 2005 survey of rare plants which was commissioned by the NPWS. The data from this survey will be published in 2006 and will also be added to the rare plant database which is maintained by the NPWS.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Notes on 'Cybele Hibernica'	Ireland	1-9%	Praeger, R.LI. 1899 Notes on 'Cybele Hibernica'. Irish Naturalist 8: 7-16
A botanist in the central plain: being notes on field-work in 1897-98	Ireland	1-9%	Praeger, R.LI. 1899 A botanist in the central plain: being notes on field-work in 1897-98. Irish Naturalist 8: 87-103
Matricaria discoidea in Ireland	Ireland	10-25%	Praeger, R.LI. 1900 Matricaria discoidea in Ireland. Irish Naturalist 9: 232
Distribution of the Alchemilla vulgaris group in Ireland	Ireland	1-9%	Linton, E.F. 1900 Distribution of the Alchemilla vulgaris group in Ireland. Irish Naturalist 9: 92-93
Some new county records	Ireland	10-25%	Colgan, N. 1902 Some new county records. Irish Naturalist 11: 184
New plants for north-western counties	Ireland	10-25%	Praeger, R.LI. 1903 New plants for north-western counties. Irish Naturalist 12: 270
Additions to 'Irish Topographical Botany' in 1902	Ireland	1-9%	Praeger, R.LI. 1903 Additions to 'Irish Topographical Botany' in 1902. Irish Naturalist 12: 23-40

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
A list of the Irish fumitories in the herbarium of the National Museum, Dublin.	Ireland	1-9%	Knowles, M.C. 1904 A list of the Irish fumitories in the herbarium of the National Museum, Dublin. Irish Naturalist 13: 33-36
Additions to 'Irish Topographical Botany' in 1903	Ireland	1-9%	Praeger, R.L.I. 1904 Additions to 'Irish Topographical Botany' in 1903. Irish Naturalist 13: 1-15
Longford, Roscommon and Westmeath plants	Ireland	25-49%	Lamb, J.G.D. 1940 Longford, Roscommon and Westmeath plants. Irish Naturalists' Journal 7: 295
Plant records from west Mayo and Longford.	Ireland	25-49%	Rohu, R.L.C. 1982 Plant records from west Mayo and Longford. Irish Naturalists' Journal 20: 506
Additions to and notes on the flora of Clare (H9), Galway (H15-17), Longford (H24) and Leitrim (H29)	Ireland	10-25%	McGough, H.N. (1988) Additions to and notes on the flora of Clare (H9), Galway (H15-17), Longford (H24) and Leitrim (H29). Irish Naturalists' Journal Vol 22: 9 pp 411-413.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Some new county records and other plants of interest found in Cos. Longford (H24) and Cavan (H30)	Ireland	25-49%	Reilly, P (1989) Some new county records and other plants of interest found in Cos. Longford (H24) and Cavan (H30). Irish Naturalists' Journal Vol 23: 1 pp 25-26.
Cephalanthera longifolia (L.) Fritsch, new to Co. Longford	Co. Longford	100%	Bond, V. (1995) Cephalanthera longifolia (L.) Fritsch, new to Co. Longford. Irish Naturalists' Journal Vol 25: 2 p 82.
Athlone field meeting: insects collected on and near the shores of Lough Ree	Ireland	1 - 9%	Speight, M.C.D., 1977. Athlone field meeting: insects collected on and near the shores of Lough Ree. Bulletin of the Irish Biogeographical Society, 1: 27-36.
Report on the flora surrounding the shores of Lough Ree	Ireland	25 - 49%	Barrington, R.M. and Vowell, R.P., 1887. Report on the flora surrounding the shores of Lough Ree. Proceedings of the Royal Irish Academy, Series 2, 14: 693-708.
Notes on some bryophytes from the Lough Ree area	Ireland	25 - 49%	Rubers, W.V., 1975. Notes on some bryophytes from the Lough Ree area. Irish Naturalists' Journal, 18, 177-183.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
The Cladocera (Crustacea) of Lough Ree and neighbouring waterbodies in Ireland	Ireland	10 - 25%	Catherine Duigan (1988) The Cladocera (Crustacea) of Lough Ree and neighbouring waterbodies in Ireland: Bulletin of the Irish Biogeographical Society, Volume 11, 15. pp 100-113

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
MISCELLANEOUS			
Teagasc Rural Environment Protection Scheme (REPS) statistics for Longford	Co. Longford	100%	REPS statistics for Longford (October 2003)  REPS 1 Participants (113); REPS 2 Participants (826); REPS 1 & 2 Participants (939); Percentage of Applicants in REPS 1 & 2 (38); Hectares in REPS 1 (28406). See details online at: <a href="http://www.teagasc.ie/publications/2003/20031104/paper1.htm">http://www.teagasc.ie/publications/2003/20031104/paper1.htm</a>
An Irish landscape : a study of natural and semi-natural vegetations in the Lough Ree area of the Shannon basin	Ireland	25-49%	Klein, J. (1975) An Irish landscape : a study of natural and semi-natural vegetations in the Lough Ree area of the Shannon basin, PhD thesis, Rijksuniversiteit te Utrecht
A Guide to Irish Country Houses (and gardens).	Ireland	1-9%	A Guide to Irish Country Houses (2nd Ed.), Mark Bence-Jones (2000), Trafalgar Square, London. Alphabetically arranged book profiling important country houses in Ireland. Book also provides details of heritage gardens associated with the great houses.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Atlas of the Irish Rural Landscape	Ireland	1-9%	Atlas of the Irish Rural Landscape: F. H. A. Aalen and Kevin Whelan & Mathew Stout (1997) Cork University, Cork. A truly informative look at the geography and history of the Irish landscape. More than an atlas, this is an analysis of how the land has effected the economical, educational and education development of the country, and vice-versa. (Entered only as publication on Heritage Council database).
National Survey of Native Woodland in Ireland	Ireland	1-9%	The native woodland survey started in 2003 and continues until 2006. During 2004 and 2005 woodlands were surveyed in Counties Leitrim, Monaghan, Cavan, Louth, Roscommon, Longford, Westmeath, Meath, Dublin, Kildare and Wicklow. The data collected included species lists for each site and a 10 x 10 m relevant from each habitat type within a site. The relevant data includes dominant cover values for all plant species and timber structural and regeneration data. The survey of Longford's woodland sites was completed in the summer of 2005.  Related publication: Higgins, G.T ., Martin, J.R., Perrin, P.M. (2004) National Survey of Native Woodland in Ireland. NPWS Dublin.
Preliminary report on areas of scientific interest in County Longford.	Longford	100%	Farrell, L (1972) Preliminary report on areas of scientific interest in County Longford. The National Institute for Physical Planning and Construction Research. Foras Forbartha, Dublin. Note: copy of this report held locally by Sue Moles (NPWS ranger).
Management Plans for protected areas.	Ireland	1-9%	Full list of management plans for SACs held by Management Planning and Support Unit (NPWS). Naomi Kingston (NPWS) has indicated that that management plans are in the process being prepared for all SACs in Longford with delivery expected in 2006. The production of Management plans for Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs) is not a priority at the present time.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Areas of Scientific Interest in Ireland	Ireland	1-9%	An Foras Forbatha (1981): Areas of Scientific Interest in Ireland. Dublin
Bibliography and inventory of NPWS reports and publications	Ireland	1-9%	Reports, Publications & Theses both produced and held by the National Parks & Wildlife Service, 2004. Edited by Edwina E. Cole. Report produced for the National Parks & Wildlife Service. Draft 2004.
Athlone Field Meeting: a general description of L. Ree and surround	Ireland	10 - 25%	Daphne E.S. Levinge (1977) Athlone Field Meeting: a general description of L. Ree and surrounds: Bulletin of the Irish Biogeographical Society, Volume 1, pp 4-6
The role of the state in protecting natural areas in Ireland: 30 years of progress.	Ireland	1 -9%	Craig, A. (2001) The role of the State in protecting natural areas of Ireland: 30 years of progress. Bulletin of the Irish Biogeographical Society, Volume 101B, No. 1-2, 141-149. Includes reference to Lough Ree and a proposal to establish a National Park there.

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
PROTECTED AREAS IN LONGFORD			
Lough Gowna	Co. Longford	100%	<p>Lough Gowna</p> <p>Lough Gowna is located 10km north-west of Granard on the River Erne. It is a medium sized lake divided into two main sections by a narrow channel at Dernaferst bridge. The substrate is Silurian grits and slates and it is situated in a Drumlin filled basin giving it a torturans nature with many bays and inlets. Nearby Sean Lough is of similar habitat and included in the site. The site was not visited recently. In 1975 An Foras Forbartha described the lake as having a relatively low base status with a PH of 7.5 and this indicated by the presence of two plants, Water lobelia (<i>Lobelia dartmannia</i>) and Quillwort (<i>Isoetes lacustris</i>) which have an oligotrophic habit. A stonewort of limited distribution <i>Nitella flexilis</i> also present. Common planktane organisms present are, Dratams (<i>A. Sterionella</i>), Blue-Green Algae (<i>Anabaena</i>, <i>Ceolosphaerium</i>) and Cladocera (<i>Daphan</i>, <i>Diophtamus</i>). Peat bog occurs along the shore in the north and east where the unusual Bulrush (<i>Typha angustifolia</i>) occurs along with the unusual uplands fern <i>Thelypteris limbosperma</i>.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Elsewhere the shores are stony being either flat or sloping. A woodland fringe present in places with Willow (<i>Salix</i>), Alder (<i>Alnus</i>), Ash (<i>Fraxinus excelsior</i>), Hazel (<i>Corylus</i>) and Holly (<i>Ilex aquifolium</i>). Some scattered Oak (<i>Quercus</i>) occurs and the ground flora includes Cow Wheat (<i>Melampyrum pratense</i>) Hand Fern (<i>Blechnum spicant</i>) and Crinkled Buckler Fern (<i>Dryopteris aemula</i>).</p> <p>This is an important site for wintering waterfowl with nationally important populations of Great Grebe (51) along with Whooper Swan (29) and Golden Plover (65) species in Annex I of EU Birds Directive (Counts 1988). Several other species present. Nutrient inflow is leading to Eutrophication and is a threat to the oligotrophic communities. Algal blooms quite common with fish kills and in this important coarse fishing area this is a serious threat. With its importance for wintering waterfowl and the presence of interesting oligotrophic plant communities which are scarce in the midlands, this site has high scientific interest.</p>
Cloonageeher Bog NHA	Co. Longford	100%	<p>Cloonageeher Bog NHA</p> <p>Cloonageeher Bog NHA is situated approximately 6 km north of Newtown Forbes, mainly in the townlands of Cloonageeher and Cloontubbrid, on the border between Counties Longford and Leitrim. The site comprises a raised bog that includes both areas of high bog and cutover bog, and is one of the most northern remaining raised bogs in Ireland.</p> <p>Cloonageeher Bog consists of one main lobe of high bog, but this has been somewhat dissected by a number of old tracks. There are wet areas on the high bog which consist of flushes and a small area with pools and hummock/hollow systems at the south-west of the site. A mineral ridge protrudes into the site at the north. Active peat-cutting is carried out around much of the site, but mainly at the south and north.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>The high bog at Cloonageeher possesses many of the species typical of raised bogs in Ireland, such as Cross-leaved Heath (<i>Erica tetralix</i>), Bog Asphodel (<i>Narthecium ossifragum</i>) and bog mosses (<i>Sphagnum</i> spp.). At the south-west of the site there is a small pool and hummock complex. Apart from this, pools are scarce and algal hollows become more common. There is a predominance of low bog moss hummocks (mainly <i>Sphagnum subnitens</i> and <i>S. tenellum</i>) and typical fire-damaged vegetation. There are also a number of flushed areas on the bog. At the centre of the bog there is a large flush which is dominated by Purple Moor-grass (<i>Molinia caerulea</i>) and has been seriously damaged by fire. To the north-west there is a wet and somewhat quaking flush, dominated by Bog-myrtle (<i>Myrica gale</i>). Bog Asphodel is common in this area, along with Cross-leaved Heath and Deergrass (<i>Scirpus cespitosus</i>) and there are hummocks of <i>S. subnitens</i>, <i>S. papillosum</i> and <i>S. imbricatum</i>.</p>
			<p>Current landuse on the site consists of peat-cutting mainly along the northern and southern margins of the high bog, and the drainage associated with this. Large portions of the bog have been burned in the past and areas of cutover bog have been reclaimed for agricultural purposes. These activities have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.</p> <p>Cloonageeher Bog NHA 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. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level. 15.11.2002 .</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Ree	Co. Longford	25-49%	<p>Lough Ree SPA  Situated on the River Shannon between Lanesborough and Athlone, Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. Some of its features (including the islands) are based on glacial drift. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. The greater part of Lough Ree is less than 10 m in depth, but there are six deep troughs running from north to south, reaching a maximum depth of about 36 m just west of Inchmore. The lake has a very long, indented shoreline and hence has many sheltered bays. It also has a good scattering of islands, most of which are included in the site. The lake is classified as a mesotrophic system, 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.</p>
			<p>In the most recent assessment of water quality a reduced planktonic growth was noted, which may be due to the spread of the Zebra Mussel (<i>Dreissena polymorpha</i>), which feeds on phytoplankton.</p> <p>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).</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>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.</p>
Fortwilliam Turlough	Co. Longford	100%	<p>Fortwilliam Turlough  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 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. Fortwilliam is the only extant turlough in county Longford and one of only two east of the Shannon.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>The central part of the turlough is marly and contains Shoreweed (<i>Littorella uniflora</i>), Various-leaved Pondweed (<i>Potamogeton gramineus</i>), Broad-leaved Pondweed (<i>Potamogeton natans</i>) and the moss, <i>Scorpidium scorpioides</i>, in the wetter parts, together with Lesser Water-plantain (<i>Baldellia ranunculoides</i>), Sedges (including <i>Carex serotina</i>) and Jointed Rush (<i>Juncus articulatus</i>). At the southern end, the wettest areas support stands of Common Club-rush (<i>Scirpus lacustris</i>), with Greater Spearwort (<i>Ranunculus lingua</i>) and Mare's-tail (<i>Hippuris vulgaris</i>), and occasional patches of Amphibious Bistort (<i>Polygonum amphibium</i>). Slightly drier areas support a community dominated by Common Sedge (<i>Carex nigra</i>), Creeping Cinquefoil (<i>Potentilla reptans</i>) and abundant Adder's-tongue (<i>Ophioglossum vulgatum</i>).</p>
			<p>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 (<i>Schoenus nigricans</i>), with Eyebright (<i>Euphrasia micrantha</i>), Tormentil (<i>Potentilla erecta</i>), Creeping Cinquefoil (<i>Potentilla reptans</i>) and Sneezewort (<i>Achillea ptarmica</i>). Tall herbs occur in places, including Meadowsweet (<i>Filipendula ulmaria</i>), Tall Fescue (<i>Festuca arundinacea</i>), Agrimony (<i>Agrimonia eupatorium</i>) and Vetches (<i>Vicia cracca</i> and <i>Lathyrus pratensis</i>). This community merges into a Blackthorn (<i>Prunus spinosa</i>) and Hawthorn (<i>Crataegus monogyna</i>) scrub, which has adjacent woodland consisting of Ash (<i>Fraxinus excelsior</i>) and Elder (<i>Sambucus nigra</i>).</p>
			<p>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. 27.1.1997</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Slawn	Co. Longford	100%	<p>Lough Slawn</p> <p>Lough Slawn is a small lough about 1 km from the shore of Lough Ree's Elfeet Bay some 12 km south of Lanesborough. The lough, the area around the lough and an extension to the south, have been combined in a rationalisation of 2 former 'Areas of Scientific Interest' (ASIs) to form a site now designated a Natural Heritage Area (NHA). Much of the western boundary of the NHA is formed by Culnagore Wood, itself a part of the large Lough Ree NHA, and the southern boundary of the site again runs down to the Lough Ree NHA.</p>
			<p>The lough is fringed by Common Reed (<i>Phragmites australis</i>) which merges into a grassland for the main part dominated by Purple Moor-grass (<i>Molinia caerulea</i>). Birch (<i>Betula pubescens</i>) and Willow (<i>Salix</i> spp.) are scattered throughout. Old peat cuttings surround the basin, with a few pools and with some peatland vegetation. The underlying geology is of Carboniferous limestone, and the influence of calcium enrichment is quite clear throughout the site with species such as Grass-of-parnassus (<i>Parnassia palustris</i>) and Great Fen-sedge (<i>Cladium mariscus</i>) in the marsh and swamp areas, and Black Bog-rush (<i>Schoenus nigricans</i>) in the peatier areas. The same base enrichment is evident in the fields to the south where Purple Moor-grass is again frequent along with other grasses such as Tall Fescue (<i>Festuca arundinacea</i>).</p> <p>The base enrichment and the continuity of responsible management have combined to make this an important site. Even in a comparatively small area the diversity of habitats of interest is remarkable, and its position in relation to Culnagore wood and the L. Ree shoreline make this an exceptional area in a botanical sense.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Forthill Bog NHA	Co. Longford	100%	<p>Forthill Bog NHA</p> <p>Forthill Bog NHA is located 2 km from the north-eastern shore of Lough Ree and 2 km south-east of Newtown Cashel. It is mainly situated in the townlands of Forthill, Claras, Ballyrevagh and Newtownflanagin, Co. Longford. It is one of only two raised bogs in this region that have not been developed for commercial peat extraction. This bog is 4 km south-west of the Ballymahon to Lanesborough road (R392) and can be accessed from local roads to the south-east and bog tracks to the west and north-west of the site. It is bounded by mineral soil to the east, improved grassland and cutover to the west and Birch scrub on cutover to the north.</p> <p>The site consists of a small raised bog with a single dome of high bog and associated cutover. The main features of interest are the pools, flushes and wetter areas of the high bog. Towards the north-east of the high bog, there is a good though somewhat limited pool system and a small flush is present to the south-east.</p>
			<p>Forthill Bog NHA 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. This site supports a range of raised bog micro-habitats including pools and flushes and the rare bog moss <i>Sphagnum fuscum</i>. This bog, although small and damaged by extensive cutaway, developed on the shores of Lough Ree and is the largest remaining intact bog in the region. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.</p> <p>15.11.2002</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Derry Lough	Co. Longford	100%	<p>Derry Lough</p> <p>Derry Lough is a relatively small area of wet grassland, fen, fen woodland and open water situated about seven kilometres northwest of Ballymahon, Co. Longford and about three kilometres from the shore of Lough Ree. It is bounded on the east by sloping farmland and on the west by a bog on which large-scale peat harvesting is on-going by Bord na Mona. The water table is kept high by the Lough Ree levels. The fen vegetation consists of large abundant tussocks of Greater Tussock Sedge (<i>Carex paniculata</i>) and Lesser Pond Sedge (<i>Carex acutiformis</i>) with an unusually high density of the uncommon wetland plant Water Dock (<i>Rumex hydrolapathum</i>), and common plants such as Marsh Marigold (<i>Clitha palustris</i>) and Marsh Cinquefoil (<i>Potentilla palustris</i>). In the northwest, Birch (<i>Betula pubescens</i>) has become dominant and this rapidly grades into reeds and open water. The transition between wet grassland and the fen in the central part is 'quaking' indicating a relatively recent succession from open water to 'closed' vegetation. The small areas of open water in the north and south still attract small numbers of winter wildfowl and the reeds and fen. Although the transition from lake to woodland, which has been occurring for very many years, has been noted on 12 July, 1995.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Bawn	Co. Longford	100%	<p>Lough Bawn</p> <p>Lough Bawn is a relatively small site composed of raised bog, fen, wet and dry woodland and freshwater marsh habitats. It is the area of fen however that gives this site its primary scientific interest. The area of fen/freshwater marsh is now to be found in a region originally occupied by the open waters of Lough Bawn. The water table has dropped considerably however and now one finds sedge - dominated vegetation covering the greater proportion of the former lake. The fen habitat itself is still quite wet and it is not unusual to find standing water up to a depth of fifty centimetres. Sedges such as lesser tussock sedge (<i>Carex diandra</i>), Bottle Sedge (<i>Carex rostrata</i>) and greater tussock sedge (<i>Carex paniculata</i>) are well represented throughout this community.</p>
			<p>Areas of open water are still to be found here and one encounters species such as Bulrush (<i>Typha latifolia</i>), Horsetail (<i>Equisetum fluviatile</i>) and Bottle Sedge (<i>Carex rostrata</i>). The intact raised bog on the site is interesting in that, although quite dry, Heather (<i>Calluna vulgaris</i>) isn't very well developed here. The bog surface may be burnt occasionally and it is noteworthy that all the adjacent and surrounding bog has either been drained, cut over or planted with conifers. The habitat diversity of the site is augmented by presence of small areas of both wet and dry woodland. Alder (<i>Alnus glutinosa</i>), Birch (<i>Betula pubescens</i>) and Willows (<i>Salix</i> spp.) are all to be found here. Little information is available on the birdlife at this site but snipe, curlew, lapwing and pheasant were all observed during this visit. Any further drainage and/or peat extraction should be discouraged if we are to maintain the wetland habitat at Lough Bawn.</p> <p>12 July, 1995.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Clooneen Bog	Co. Longford	100%	<p>Clooneen Bog</p> <p>Clooneen Bog lies approximately 3 km south-east of Roosky in Co. Longford on the east bank of the River Shannon, just north of Lough Forbes. It is located almost entirely in the townlands of Clooneen, Bunanass, Ederclon 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.</p>
			<p>The site is a 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. 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 (<i>Rhynchospora alba</i>) and/or Brown Beak-sedge (<i>R. fusca</i>), and at least some of the following associated species, Bog Asphodel (<i>Narthecium ossifragum</i>), Sundews (<i>Drosera</i> spp.), Deergrass (<i>Scirpus cespitosus</i>), Carnation Sedge (<i>Carex panicea</i>).</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>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.</p> <p>Clooneen 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. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level. Bog woodland is listed as a priority habitat on Annex I of the E.U. Habitats Directive - priority status is given to habitats and species that are threatened throughout the E.U. The areas of degraded raised bog and Rhynchosporion are also of conservation importance, being habitats that are listed on Annex I of the E.U. Habitats Directive.</p> <p>31.10.2002 .</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Derrymore Bog	Co. Longford	100%	<p>Derrymore Bog</p> <p>This lowland raised bog is situated some 3km southeast of Longford town. The bog was surveyed in 1985 and then its condition was described as being about 50% destroyed by turf cutting with the effect of drying out the margins thus making them unsuitable for the growth of Bog Mosses (<i>Sphagnum</i> spp.). In addition the bog had been subject to burning with only one unburnt area on the northwestern lobe which had a pool complex with hummocks of the notable moss <i>Sphagnum imbricatum</i>. another notable species amongst the regenerating mosses was <i>S. fimbriatum</i>.</p> <p>Detailed survey of site not carried out/ unavailable.</p> <p>Active raised bogs are vulnerable to drainage and exploitation, and have been reconised by the European Union as a habitat which demand special international efforts to conserve. Derrymore, although damaged in the past, remains comparatively intact having escaped wholesale exploitation.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Bannow	Co. Longford	100%	<p>Lough Bannow</p> <p>Lough Bannow proposed Natural Heritage Area (NHA) is located some 2 km east of Lanesborough, just to the south of the Longford Road (N63). The outline of water of Lough Bannow, as surveyed in 1907, is marked on the 6" Ordnance Survey map, however swamp symbols are drawn across the entire surface, which indicates that the lake was drying out and/or infilling with vegetation at that time.</p> <p>There is indeed very little open water left. The location of the lake is marked by a large reed bed dominated by Common Reed (<i>Phragmites australis</i>). To the east Birch (<i>Betula pubescens</i>), Alder (<i>Alnus glutinosa</i>) and Gorse (<i>Ulex europaeus</i>) are colonising areas. Outside the site of the old lake, marshes and wet, sometimes inundated grasslands are included in the NHA area. A low hill to the east of the site of the old lough separates the two main wetland areas.</p>
			<p>Even given the proximity of Lough Ree (which itself an NHA), this represents one of the largest terrestrial wetland complexes in the area. Transitions from swamps to grasslands are interesting, if somewhat understudied. Little is known about the use of the area by waterbirds, but it presents ideal nesting habitat for some species.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Forbes Complex	Co. Longford	100%	<p>Lough Forbes Complex</p> <p>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.</p> <p>Lough Forbes is a medium sized lake underlain by limestone. It has extensive Reed (<i>Phragmites australis</i>) swamps which provides good cover for wildfowl although numbers have declined recently possibly due to the increase in cruisers and other pleasure boats. Freshwater marshes are also a common feature along the lakeshore.</p>
			<p>These areas contain a good diversity of aquatic and emergent vegetation comprising of sedges (<i>Carex vesicaria</i>, <i>C. rostrata</i> and <i>C. acuta</i>), Bogbean (<i>Menyanthes trifoliata</i>), Spike-rush (<i>Eleocharis palustris</i>), Fine-leaved Water Dropwort (<i>Oenanthe aquatica</i>), Water Plantain (<i>Alisma plantago-aquatica</i>), Cowbane (<i>Cicuta virosa</i>), Common Club-rush (<i>Scirpus lacustris</i>) and Reed Canary-grass (<i>Phalaris arundinacea</i>).</p> <p>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.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>The central core areas of the bogs are quite wet and spongy with a good complement of Bog Mosses (<i>Sphagnum</i> 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.</p> <p>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. 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.</p> <p>18.06.1997</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Rinn River	Co. Longford	100%	<p>Rinn River</p> <p>The Rinn River flows from L. Rinn in Leitrim, to Lough Forbes on the Shannon. Several sections of the undrained Rinn River, known as callows, between Annaveagh Bridge and Lough Forbes are liable to flood and form the basis of the Rinn River Natural Heritage Area (NHA).</p> <p>The designated area is mainly of wet grassland. Where this has not been improved for agriculture the main species are Creeping Bent (<i>Agrostis stolonifera</i>), Soft Rush (<i>Juncus effusus</i>) and Meadowsweet (<i>Filipendula ulmaria</i>) with Marsh-marigold (<i>Caltha palustris</i>), Common Sedge (<i>Carex nigra</i>), Creeping buttercup (<i>Ranunculus acris</i>) along with other grass species such as Meadow Foxtail (<i>Alopecurus pratensis</i>) and Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>). In places the ground is wet enough to support freshwater marsh, dominated by tall sedges such as Bottle Sedge (<i>Carex rostrata</i>). The species present depend not only upon the hydrological conditions, but upon management - areas more improved for agriculture, by fertilisation, feature species such as Yorkshire Fog (<i>Holcus lanatus</i>), Sorrel (<i>Rumex acetosa</i>) and Rye-grass (<i>Lolium perenne</i>).</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>At Bellageeher the NHA incorporates a small fairly dry lowland raised bog with Ling Heather (<i>Calluna vulgaris</i>) and Here's-tail Cottongrass (<i>Eriophorum vaginatum</i>) along with other characteristic species including Bog-rosemary (<i>Andromeda polifolia</i>)</p> <p>These conditions are attractive to wildfowl. The use of these areas by has recently been confirmed, for example 56 Greenland White-fronted Geese were counted 10.03.94. The Republic of Ireland hosts about 50% of the world population of this race in the winter, and has international duties to protect it, and the habitats it frequents. In addition Whooper Swan, Wigeon, Pochard, Lapwing and Curlew have been recorded from the site, and the habitat is known to be good for breeding waders in the summer.</p> <p>Flooding Callows are a valuable national wildlife asset. Both Loughs Forbes and Rinn, are also NHAs and the Rinn River is not only of interest in itself, but provides a 'corridor' for the movement of species of plant, as well as of animals, between the two sites.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Aghnamona Bog NHA	Co. Longford	25-49%	<p>Aghnamona Bog NHA</p> <p>Aghnamona Bog NHA is located 2 km east of Roosky, in the townlands of Cornagillagh, Drumard, Meelragh, Aghnamona, Aghnahunshin in Co. Leitrim and Clooncolligan, Co. Longford. The River Shannon lies to the west of the site. The site comprises a relatively large raised bog that includes both areas of high bog and cutover, and it forms part of a bog complex within this area. The site is bounded by agricultural land on all margins.</p> <p>The site comprises a large flat raised bog, separated into four lobes by a railway line and the main Longford/Carrick-on-Shannon road. The fragmented nature of the high bog has led to the overall desiccation of this habitat, particularly to the eastern lobes. Cutover bog occurs around much of the larger western lobe. Regeneration has occurred on some areas of cutover around the high bog margins. A large flush runs along the centre of the main western lobe. An area of coniferous plantation is present on the high bog to the north. A modified natural channel flows from the south end of the bog into the River Shannon to the west.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Current landuse on the site consists of peat-cutting along some of the margins of the western lobe. An area of old cutaway to the east has been reclaimed for pasture. Damaging activities associated with these landuses include drainage and burning. Fire damage was recorded in the 1980s but since then there has been good bog moss regeneration on the high bog. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.</p> <p>Aghnamona Bog NHA 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 hummock/hollow complexes, and there are some pools present. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.</p> <p>14.11.2002</p>
Glen Lough	Co. Longford	100%	<p>Glen Lough</p> <p>Glen lough is situated about five kilometres north-west of Lough Iron and the Black River connects these two lakes. Extensive drainage in the 1960's has resulted in the dramatic drop in water table here, with the result that there is little open water, except during flooding in the winter months. Sedge dominated freshwater marsh now occupies the majority of what was once open water. Species encountered include Bottle Sedge (<i>Carex rostrata</i>), Horsetail (<i>Equisetium fluviatile</i>) Water Mint (<i>Mentha aquatica</i>), Canary Reed Grass (<i>Phalaris arundinacea</i>), and occasional tussocks of Tufted Sedge (<i>Carex elata</i>). Unlike most of the other lakes in the Midlands it does not have a significant diving duck population.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Instead, it holds large numbers of dabbling ducks, with Mallard, Wigeon and Teal having been recorded here. Internationally significant numbers of Whooper Swan (236) have been noted here but Greenland White-fronted Geese are now irregular. In fact the area where they were last seen has recently been planted with conifers and it seems unlikely that they will return here. Other habitats of note encountered at Glen Lough include reedswamp, wet and dry grassland vegetation, cutaway bog colonised by heath vegetation, scrub, wet willow woodland, exposed rock and fen. Although many of the Midland lakes have undergone extensive drainage this lake is a typical in that the water table has considerably dropped and the lake has ceased to exist, except during flooding in the winter months. This situation has worsened further with the dredging of the exit stream about three years ago by OPW, so that flooding at the site is now rare and short-lived. Coincidentally whooper swans have ceased regularly feeding at the site and dabbling duck usage is no longer significant. (Information per. P. O'Donnell, N.P.W.S.) 12 July, 1995.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Lough Naback	Co. Longford	100%	<p>Lough Naback</p> <p>This small site is composed of an oligotrophic lake surrounded by gently to moderately sloping fields in the County Longford uplands. Gorse (<i>Ulex europaeus</i>) scrub surrounds the lake and acts as a barrier between semi-improved fields and the lake proper. In many cases, however, the scrub is being actively cleared by farmers to give cattle access to the lake. The main habitats encountered here are semi-terrestrial plant communities on the rocky shore of the lake, adjacent wet grassland habitats, swamp habitats and occasionally exposed rock and acid grassland habitats. What makes this lake especially interesting is the presence of Artic Char here. They are thought to spawn on the rocky bed of a submerged strea. This lake was rated Grade A by the Fisheries Department (as it was known in 1973), due to the presence of char here. Char were last recorded at Lough Naback in 1973 and could still be present here. The nutrient status of the lake has a part to play in the maintenance of a healthy Char population and water polluting activities should be discouraged.</p> <p>12 July, 1995.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Ardagullion Bog	Co. Longford	100%	<p>Ardagullion Bog</p> <p>Ardagullion Bog is located 5 km north-east of Edgeworthstown, mainly in the townlands of Cloonshannagh (Coolamber Manor Demesne) and Ardaguillon in Co. Longford. 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.</p> <p>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 (<i>Sphagnum</i> spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, <i>Sphagnum</i> 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.</p>
			<p>The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (<i>Rhynchospora alba</i>) and/or Brown Beak-sedge (<i>R. fusca</i>), and at least some of the following associated species, Bog Asphodel (<i>Narthecium ossifragum</i>), Sundews (<i>Drosera</i> spp.), Deergrass (<i>Scirpus cespitosus</i>), Carnation Sedge (<i>Carex panicea</i>).</p> <p>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.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>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.</p> <p>31.10.2002</p>
Ballykenny-Fishertown Bog	Co. Longford	100%	<p>Ballykenny-Fishertown Bog</p> <p>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. Common Reed (<i>Phragmites australis</i>) is a dominant species around the lake, and occurs along with other swamp species such as Common Club-rush (<i>Scirpus lacustris</i>) and Reed Canary-grass (<i>Phalaris arundinacea</i>). 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 (<i>Sphagnum</i> spp.) and well-developed hummocks.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>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 (<i>Quercus</i> spp.).</p> <p>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. Red Grouse are known from the bogs.</p>
			<p>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.</p> <p>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.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Brown Bog	Co. Longford	100%	<p>Brown Bog</p> <p>Brown Bog NHA is located 5 km north-west of Longford Town mainly in the townlands of Tully, Lissanurlan and Cartronlebagh. The site comprises a raised bog that includes both areas of high bog and cutover. The bog margins are mainly surrounded by scrub/woodland.</p> <p>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 (<i>Sphagnum</i> spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, <i>Sphagnum</i> 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.</p>
			<p>The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (<i>Rhynchospora alba</i>) and/or Brown Beak-sedge (<i>R. fusca</i>), and at least some of the following associated species, Bog Asphodel (<i>Narthecium ossifragum</i>), Sundews (<i>Drosera</i> spp.), Deergrass (<i>Scirpus cespitosus</i>), Carnation Sedge (<i>Carex panicea</i>).</p> <p>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.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Brown 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. Although the site is small it supports a good diversity of raised bog microhabitats including hummock/hollow complexes, pools and a flush system with surrounding tear pool complex, along with cutover which adds to the diversity and scientific value of the site. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.</p> <p>31.10.2002 .</p>
Mount Jessop Bog	Co. Longford	100%	<p>Mount Jessop Bog NHA</p> <p>Mount Jessop Bog NHA is situated approximately 5 km south of Longford Town, mainly in the townlands of Mount Jessop and Curry, in Co. Longford. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is bordered by a road on its western side and by coniferous forestry on its southern and eastern sides.</p> <p>Mount Jessop Bog consists of one main lobe of high bog. Almost 30 % of this is covered by coniferous forestry. There are wet areas with some spongy patches on the unforested areas, and some areas with pools and hummock/hollow systems. However, much of the high bog consists of a relatively intact bog moss (<i>Sphagnum</i> spp.) carpet, with occasional low hummocks. Tear-pools aligned with the long axis of the bog also occur. There are large areas of abandoned cutover at the south and west of the site which are colonised by scrub, and active peat-cutting still takes place at the south of the site.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>The high bog at Mount Jessop possesses many of the species typical of Midland Raised Bogs in Ireland, such as Ling Heather (<i>Calluna vulgaris</i>), Bog Asphodel (<i>Narthecium ossifragum</i>), Bog-rosemary (<i>Andromeda polifolia</i>), Cranberry (<i>Vaccinium oxycoccos</i>) and bog mosses (<i>Sphagnum</i> spp.). There are areas with hummock/hollow systems and pools. The pools contain the bog moss <i>S. cuspidatum</i> and <i>S. magellanicum</i> is found at the pool margins. The hummocks are mainly composed of bog mosses such as <i>S. capillifolium</i>, <i>S. imbricatum</i> and <i>S. fuscum</i>. Ling Heather is dominant in drier areas near the margins of the high bog. Pools filled with Bog Asphodel and algal material are found and are possibly tear-pools. The cutover areas of the site are mainly overgrown with Downy Birch (<i>Betula pubescens</i>) and Willow (<i>Salix</i> spp.) scrub and occasional conifer from failed forestry. Red Grouse, a bird which is becoming increasingly rare in Ireland, has been recorded at this site, along with the Irish Hare, a Red Data Book species.</p>
			<p>Current landuse on the site consists of peat-cutting along the southern margin of the high bog, and the drainage associated with this. A large area at the south of the site has been planted with coniferous forestry. Large portions of the bog have been burned in the past and areas of cutover bog have been reclaimed for agricultural purposes. These activities have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.</p> <p>Mount Jessop Bog NHA 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. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.</p> <p>15.11.02</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Royal Canal	Ireland	1-9%	<p>ROYAL CANAL</p> <p>The Royal Canal is a man-made waterway linking the River Liffey at Dublin to the River Shannon near Tarmonbarry. There is a branch line from Kilashee to Longford Town. The canal NHA comprises the central channel and the banks on either side of it. The main water supply is from Lough Owel (also an NHA) via a feeder channel into the canal at Mullingar. The Royal Canal was closed to navigation in 1961. The section of canal west of Mullingar was allowed to dry out, and the eastern section silted up and became overgrown. Restoration began in 1988, and is still in progress.</p> <p>A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.</p>
			<p>The hedgerow, although diverse, is dominated by Hawthorn (<i>Crataegus monogyna</i>). On the limestone soils of the midlands Spindle (<i>Euonymus europaeus</i>) and Guelder-rose (<i>Viburnum opulus</i>) are present.</p> <p>The vegetation of the towpath is usually dominated by grass species. Crested Dog's-tail (<i>Cynosurus cristatus</i>), Quaking Grass (<i>Briza media</i>) and Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>) are typical species of the calcareous grasslands of the midlands. Where the canal was built through a bog, soil (usually calcareous) was brought in to make the banks. The contrast between the calcicolous species of the towpath and the calcifuge species of the bog is very striking.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
			<p>Otter spraints are found along the towpath, particularly where the canal passes over a river or stream.</p> <p>The Rare and legally protected Opposite-leaved Pondweed (<i>Groenlandia densa</i>) (Flora Protection Order 1987) is present at one site in Dublin, between Locks 4 and 5. <i>Tolypella intricata</i> (a stonewort listed in the Red Data Book as being Vulnerable) is also in the Royal Canal in Dublin, the only site in Ireland where it is now found.</p> <p>The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods.</p> <p>13th February, 1995.</p>

Name of publication/data	Location	Proportion of data relevant to Longford	Description of data
Carrickglass Demesne	Longford	100%	<p>CARRICKGLASS DEMESNE</p> <p>Carrickglass Demesne lies some 4 km northeast of Longford Town. The whole estate was designated an Area of Scientific Interest (ASI) in 1972, and is now designated a Natural Heritage Area (NHA).</p> <p>The interest of the site lies in the mixed estate woodland which borders it. Although one area has been planted with conifers, Oak (<i>Quercus</i> sp.) is a prevalent tree and some specimens are reported as reaching heights around 100 feet in this mature woodland. The degree of ecological interest of the demesne interior is not currently known.</p> <p>The wood may benefit from some degree of management, which could include timber extraction. Livestock have access to most of it and accordingly damage the ground layer of plants, there is also a large Grey Squirrel population which may hamper regeneration.</p> <p>Although Carrickglass Demesne Woodland is not extensive, and is essentially linear, there are few other mature, predominantly broadleaved woodlands in the area. 12 July, 1995.</p>