



Ecological Impact Assessment Report

R445 Newhall Junction Improvement Project Co. Kildare



Date: September 2020

For: KILGALLEN & PARTNERS CONSULTING ENGINEERS

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1 INTRODUCTION

Works have been proposed by Kildare County Council at the Newhall Junction of the R445, south-west of Naas, Co. Kildare. The development consists of the construction of a roundabout, realignment of local roads, and roadside verges and associated works.

The site was surveyed by Ecologists of Flynn Furney Environmental Consultants in September 2020. The purpose of this Ecological Impact Assessment is to provide a description of potential ecological impacts arising from this proposed development. The surveys carried out investigate whether any Annex I habitats (EU Habitats Directive), Annex II species (EU Habitats Directive), Annex I Bird Species (EU Birds Directive) or 'stepping stones/Ecological Corridors' (as covered under Annex 10 of the EU Habitats Directive) or locally important habitats are likely to be impacted as a result of the proposed development.

This work has been completed in accordance with TII 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes'.

1.1 Outline Description of the Proposed Site of Works

The study site is located in the townlands of Ladytown and Newhall approximately 10km south west of Naas town centre Co. Kildare on the R445. The proposed site comprises a number of small parcels of land including fields, roads, roadside verges, brown field sites, yards and buildings both north and south of the existing R445. The fields that surround the site are generally pasture or for arable crop production. A number of minor hedgerows and treelines also surround the site particularly south of the R445 and along the L6064.

Figure 1: Site boundary

1.2 Description of the Works

The area under study can be seen in figure 1. Works are likely to involve the removal and stock piling of surface soil and over burden material including hedgerows and trees. The removal, reinstatement and installation of services, filling (as required), capping and road surfacing.

1.3 Objectives of this EclA

The objectives of this present studies were as follows:

- To map and describe existing habitats
- To identify sensitive areas within the site
- To identify potential ecological conflicts or impacts
- To identify ways to avoid the above and mitigate against if necessary
- To suggest ecological enhancements works that may be added to this project.

2 LEGISLATION AND PLANNING POLICY

2.1 European Council Directives

2.1.1 Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) (The Habitats Directive)

The main aim of the Directive is to promote the maintenance of biodiversity through the conservation of natural habitats and wild species listed on the Annexes of the Directive. Member States are required to take measures to maintain or restore, at favourable conservation status, biodiversity whilst taking account of economic, social, cultural requirements and regional and local characteristics.

It gives effect to site and species protection measures through establishment of the Natura 2000 network and designation of European Sites including Special Areas of Conservation (SAC) and Special Protected Areas (SPA). It also establishes a list of species (other than birds) whose habitats must be protected to secure their survival. These priority species and habitats are subject to a higher level of protection.

The Directive also requires appropriate assessment of any plan or project not directly connected with or necessary to the management of a European Site, but likely to have significant effects upon a European site, either individually or in combination with other plans or projects.

2.2 Council Directive on the Conservation of Wild Birds (2009/147/EC) (The Birds Directive)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It makes provisions for the maintenance of the wild bird populations across their natural range; conserves the habitats for rare or vulnerable species listed in Annex I and of migratory species through the classification of SPAs and provides protection for all wild birds.

2.3 Irish Legislation

2.3.1 The European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015 (S.I. No. 355 of 2015)

The European Communities (Birds and Natural Habitats) (Amendment) Regulations provides that the following shall be construed together as one:

Wildlife Act 1976

Wildlife (Amendment) Acts of 2000, 2010 and 2012

European Communities (Birds and Natural Habitats) (Restrictions of the Use of Poison Bait) Regulations 2010

European Communities (Birds and Natural Habitats) Regulations 2011

European Communities (Birds and Natural Habitats) (Amendment) Regulations of 2013, 2015

Wildlife Amendment Bill 2016 (proposed legislation)

2.3.2 European Communities (Birds and Natural Habitats) Regulations 2011 to 2015

The Regulations give effect to requirements relating to the designation of protected sites under the Birds Directive and Habitats Directive. The Regulations provide for the protection and management of European Sites and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issued under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

2.3.3 Wildlife Acts 1976 to 2012

The Acts provides for *inter alia* the protection of wildlife. The Acts prohibit the intentional killing, taking or injuring of certain wild birds or wild animals; or the intentional destruction, uprooting or picking of certain wild plants.

2.3.4 Wildlife Amendment Bill 2016

The purpose of the Bill is to provide for the implementation of a reconfiguration of the Raised Bog Natural Heritage Area Network arising from (i) the proposals from the Review of Raised Bog Natural Heritage Area Network published in January 2014; (ii) an assessment of the effects on the environment of the proposals arising from the Review and, if required, any other screening for an assessment or as the case may be, assessment, including public consultation undertaken and (iii) observations or submissions received during the course of public consultation.

Taken as a whole, nature conservation legislation is of key importance in undertaking EclA for proposed development as it shapes planning policy.

3 SURVEY METHODOLOGY

Walkover surveys of the site were carried out in September 2020. Habitats were identified, mapped and classified and dominant plant species noted in accordance with the guidelines given by the JNCC (2007) and The Heritage Council (2010). Bat habitat and mammal surveys followed guidance as per NRA/TII guidance documents. Habitats were classified as per Fossitt (2000). Assessment of ecological impact followed CIEEM (2018), NRA (2006) and EPA (2002).

3.1 DESK STUDY

Prior to the main fieldwork contributing to this assessment, a desktop survey of available information sources was carried out. These included:

- The National Biodiversity Data Centre Online Database
- The National Biodiversity Network Online Atlas
- The NPWS Protected Species Database and Online Mapping
- The Environmental Protection Agency Database
- The EPA Water Quality in Ireland Report

Desk research also included a review of records available through the National Biodiversity Data Centre mapping system. These included rare and protected species. Records were requested for all species appearing within the study area or immediately surrounding the study area. The results of which can be seen in Appendix C.

Designated sites were identified using the current boundary shapefiles downloaded from the NPWS website. Records of species from within the relevant Km squares were also obtained. Habitat mapping also reviewed included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and Ancient woodland inventory.

3.2 FIELD STUDY

Field work for this survey was carried out on the 23rd of September 2020. The field survey habitat assessments were carried out according to guidelines given by the Heritage Council (2011) and the JNCC (2010). A primary purpose of this survey was to:

- Identify habitat types within the study area
- Assess for the presence of protected species of flora and fauna
- Identify ecological and environmental constraints to the construction of this Greenway
- Identify ecological sensitivities around and within the study area.

3.2.1 Ecological Impact Assessment Methodologies

This ecological impact assessment has been prepared in accordance with relevant legislation and best practice guidance including:

- The Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and Coastal 2nd Edition. CIEEM (2018).
- The EPA's Draft Advice Notes on Preparing Environmental Impact Statements (EPA, 2015a).
- The EPA's Draft Revised guidelines on Information to be Contained in Environmental Impact Statements (EPA, 2015b).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

Ecological features (habitats and species) were evaluated for their conservation importance according to the National Roads Authority's scheme (NRA 2009). For habitats or species, significance of effects was assessed with reference to their conservation status, abundance and distribution. Description of significant effects follows guidance outlined in the EPA Draft Revised Guidelines on the Information to be Contained in EIS (EPA, 2015b). The term 'significant effect' as used in this report follows guidance (CIEEM, 2018) and is an effect that either supports or

undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. In the case of designated sites, a negative significant effect would be one that undermines the conservation objectives and targets for that site. The significance of impacts on habitats was determined with reference to the value of the feature being affected and the magnitude of the impact. Impacts are considered ecologically significant at a stated geographic scale or are considered not significant.

The impacts which may be expected from the proposed road improvement works are assessed below. These possible impacts have been assessed under the CIEEM (2018) and the National Roads Authority guidelines (NRA, 2006). Criteria for assessment of duration of impacts used (EPA 2002). These provide guidance on assessing impact significance upon features of sites proposed for works and those adjacent. Impact significance must be given in context of their respective ecological value of the site and features under study.

The ‘ecological value’ of an area or feature is defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 1, below.

Table 1: Ecological Value Criteria

Ecological Value	Criteria
International	<ul style="list-style-type: none"> ▪ ‘European Sites’ including Special Areas of Conservation (SAC) & Special Protection Areas (SPA). ▪ Sites that satisfy the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended). ▪ Features essential to maintaining the coherence of the Natura 2000 Network. ▪ Sites containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive.

Ecological Value	Criteria
	<ul style="list-style-type: none"> ▪ Resident or regularly occurring populations (assessed to be important at the national level) of the following: ▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or ▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. ▪ Ramsar Sites ▪ World Heritage Sites (Convention for the Protection of World Cultural & Natural Heritage, 1972). ▪ Sites hosting significant species populations under the Bonn Convention ▪ Sites hosting significant populations under the Berne Convention ▪
National	<ul style="list-style-type: none"> ▪ Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA). ▪ National Nature Reserves (NNR). ▪ Marine Nature Reserves (MNR). ▪ Area of Outstanding Natural Beauty (AONB). ▪ Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). ▪ Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). ▪ Resident or regularly occurring populations (important at the national level) of the following: ▪ Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or ▪ Species listed on the relevant Red Data list. ▪ Sites containing ‘viable areas’ of the habitat types listed in Annex I of the Habitats Directive.
Regional	

Ecological Value	Criteria
	<ul style="list-style-type: none"> ▪ Sites of Local Nature Conservation Importance (SLNCI). ▪ Areas subject to a Tree Preservation Order. ▪ Resident or regularly occurring populations (assessed to be important at the Regional level) of the following: <ul style="list-style-type: none"> ▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; ▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; ▪ Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or ▪ Species listed on the relevant Red Data list. ▪ Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance. ▪ Regionally important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared. ▪ Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region. ▪ Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local	<ul style="list-style-type: none"> ▪ Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared; ▪ Resident or regularly occurring populations (assessed to be important at the Local level) of the following: <ul style="list-style-type: none"> ▪ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;

Ecological Value	Criteria
	<ul style="list-style-type: none"> ▪ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; ▪ Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or ▪ Species listed on the relevant Red Data list. ▪ Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; ▪ Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value ▪ Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; ▪ Sites or features containing non-native species that are of some importance in maintaining habitat links.

Ecological Impact Assessment must also consider the *significance* of effects that may be expected arising from a proposed development. CIEEM guidelines (2016) define a significant effect as:

“an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’... or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local”.

It also states that:

“an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A

significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring”.

The criteria for assessment of significance of effects is given in the following table. It should be noted that significant effects may also include beneficial effects.

3.3 Significance Criteria

Table 2: Criteria for Assessing Significance of Effects

Impact Significance	Effect	Criteria
Significant Negative Effect	Major Adverse	<ul style="list-style-type: none"> ▪ Loss of, permanent damage to or adverse impact on any part of a site of international or national importance; ▪ Loss of a substantial part or key feature of a site of regional importance; ▪ Loss of favourable conservation status (FCS) of a legally protected species; ▪ Loss of or moderate damage to a population of nationally rare or scarce species.
	Moderate Adverse	<ul style="list-style-type: none"> ▪ Temporary disturbance to a site of international or national importance, but no permanent damage; ▪ Loss of or permanent damage to any part of a site of regional importance; ▪ Loss of a key feature of local importance; ▪ A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable; ▪ Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.

Impact Significance	Effect	Criteria
No Significant Effect	Minor Adverse	<ul style="list-style-type: none"> ▪ Temporary disturbance to a site of regional value, but no permanent damage; ▪ Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation; ▪ A minor impact on legally protected species but no significant habitat loss or reduction in FCS; ▪ A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.
	Negligible	<ul style="list-style-type: none"> ▪ No impacts on sites of international, national or county importance; ▪ Temporary disturbance or damage to a small part of a feature of local importance; ▪ Loss of or damage to land of negligible nature conservation value; ▪ No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity. ▪ Beneficial and adverse impacts balance such that resulting impact has no overall affect upon feature.
	Minor Beneficial	<ul style="list-style-type: none"> ▪ A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.
Significant Positive Effect	Moderate Beneficial	<ul style="list-style-type: none"> ▪ Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.

Impact Significance	Effect	Criteria
	Major Beneficial	<ul style="list-style-type: none"> ▪ Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.

3.3.1 Impact duration

The duration of impact must also be considered when assessing overall ecological impacts. Criteria for assessment of duration of impacts used (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year
- Short-term: from 1-7 years
- Medium-term: 7-15 years
- Long-term: 15-60 years
- Permanent: over 60 years

The likelihood of impacts should also be defined. Assessment of likelihood of impact followed CIEEM guidelines. These assesses likelihood as follows:

- Almost Certain: probability estimated at greater than 95%
- Probable or Likely: probability estimated between 50% and 95%
- Unlikely: probability estimated between 5% and 50%
- Extremely Unlikely: probability estimated at less than 5%

4 Results

4.1 Designated Areas

All sites designated for the conservation of nature within 15km of the proposed works are detailed in Table 3. Maps of designated sites found within 15km of the site can be seen in Appendix 1.

Table 3: Designated Areas with 15km of the proposed site

Site Code	Site Name	Designation	Distance from designated site	Likelihood of impact
2331	Mouds Bog	SAC	4.2km	None identified
396	Pollardstown Fen	SAC	7.8km	None identified
1387	Ballynafagh Lake	SAC	7.8km	None identified
391	Ballynafagh Bog	SAC	9.2km	None identified
397	Red Bog, Kildare	SAC	12km	None identified
4063	Poulaphouca Reservoir	SPA	13km	None identified
1393	Hodgestown Bog	NHA	12km	None identified
391	Ballynafagh Bog	pNHA	9.7km	None identified
392	Curragh (Kildare)	pNHA	7.7km	None identified
393	Liffey Valley Meander Belt	pNHA	9.8km	None identified
395	Mouds Bog	pNHA	4.2km	None identified
396	Pollardstown Fen	pNHA	7.7km	None identified
397	Red Bog, Kildare	pNHA	12km	None identified
731	Poulaphouca Reservoir	pNHA	13km	None identified
1387	Ballynafagh Lake	pNHA	10.8km	None identified
1391	Donadea Wood	pNHA	13.1km	None identified
1394	Kilteel Wood	pNHA	13km	None identified
1395	Liffey At Osberstown	pNHA	2.4km	None identified
1396	Liffey Bank Above Athgarvan	pNHA	7.1km	None identified
1759	Newtown Marshes	pNHA	13.1km	None identified
1772	Dunlavin Marshes	pNHA	14.7km	None identified
2104	Grand Canal	pNHA	1.3km	None identified

No risks to the conservation objectives of any other Natura 2000 sites are considered likely due one or more of the following:

- Lack of connectivity between the proposed works areas and the designated area
- Significant buffer between the proposed works area and the designated area
- The nature of the site's conservation objectives
- No impact or change to the management of the designated area or;
- No change to chemical or physiological condition of the designated site as a result of the proposed development.

A number of proposed/ Natural Heritage Areas occur within 15km of the site proposed for works. Again, no risks to any of these areas are likely as a result of the proposed works for one or more of the reasons specified above.

4.2 Habitats

The flowing habitat types were recorded within or surrounding the site during field work in September 2020. The habitat assessment was carried out according to guidelines given by the Heritage Council (2011) and the JNCC (2010). Maps of all habitat types found within and surrounding the site can be seen in Appendix 1.

4.2.1 Dry meadow and grassy verges (GS2)

Grassy verges primarily occurred along the road side and between the lanes of the R445. These areas of grass looked to be unmanaged or infrequently managed. These grasslands were overgrown and were dominated by False Oat-grass (*Arrhenatherum elatius*) with occasional Cock's-foot (*Dactylis glomerata*) and Bents (*Agrostis spp.*). The herb layer varied considerably around these patches of grass. The most diverse were west of the junction in front of the row of houses and in front of the field of improved grassland. Here Hogweed (*Heracleum sphondylium*), Bush Vetch (*Vicia sepium*), Sow thistle (*Sonchus arvensis*), Creeping Buttercup (*Ranunculus*

repens), Plantains (*Plantago spp.*), Hedge Bindweed (*Calystegia sepium*), Common Knapweed (*Centaurea nigra*), Ragworts (*Senecio spp.*), Tormentil (*Potentilla erecta*) and Red Clover (*Trifolium spp.*) were recorded.

Other areas of Grassy verge including those around the L2031 were less species diverse and also dominated by False Oat-grass (*Arrhenatherum elatius*) but also included Creeping Buttercup (*Ranunculus repens*), Rape (*Brassica napus*), Cow Parsley (*Anthriscus sylvestris*) and Elder (*Sambucus nigra*).

4.2.2 Improved Grassland GA1

The dominant habitat surrounding much of the south west side of the junction. Improved grassland dominated by Rye grass (*Lolium spp.*), Meadow-grasses (*Poa spp.*) and Fescues (*Festuca spp.*). The field look to have been primarily used for grazing by cattle and sheep. Species of agricultural herbs identified included Dandelion (*Taraxacum spp.*), Creeping Buttercup (*Ranunculus repens*), Plantains (*Plantago spp.*), Nettle (*Urtica dioica*), Thistles (*Cirsium arvense*, *C. vulgare*) and Docks (*Rumex spp.*).

4.2.3 Hedgerows (WL1)

Hedgerows formed continuous bands around the south western edge of the study area and continued into the surrounding fields. Hedgerows generally contained Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*) interspersed Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Elder (*Sambucus nigra*), Elms (*Ulmus spp.*) and Brambles (*Rubus fruticosus agg.*).

The invasive species Snowberry (*Symphoricarpos albus*) was recorded within hedgerows along the western side of the L6064.

4.2.4 Treelines (WL2)

Treelines and small groups of trees were recorded throughout the site. Along the boundary of the property west of the L6064 a treeline dominated by Mature Beech (*Fagus sylvatica*) was

recorded. The remains of an Ash (*Fraxinus excelsior*) treeline was recorded east of the L6064. This originally wrapped around the property at the junction but much this has recently been removed.

North of the junction a small stand of trees approximately 15 years old has been planted these included Downy Birch (*Betula pubescens*) and Lime (*Tilia Cordata*). Opposite a linear strip of trees was recorded that included Downy Birch (*Betula pubescens*) and Coast Redwood (*Sequoia sempervirens*).

4.2.5 Recolonising bare ground (ED3)

This habitat was recorded within a yard on the north west of the junction. Access to the yard was restricted. Vegetation cover was less than 50% and contained typical primary colonising generalist species including Colt's Foot (*Tussilago farfara*), Nettle (*Urtica dioica*), Dandelion (*Taraxacum spp.*), Willow-herbs (*Epilobium spp.*) and ragwort (*Senecio spp.*), Herb-Robert (*Geranium robertianum*) and Creeping Buttercup (*Ranunculus repens*). Brambles (*Rubus fruticosus agg.*) were recorded coming over the fence from neighbouring properties.

4.2.6 Drainage ditches (FW4)

Drainage ditches were recorded running along the northern boundary with the property on the L6064. This drain then continued north along the L6064 and then disappeared into a culvert. The only aquatic plants recorded within this ditch was Fool's Water-cress (*Apium nodiflorum*). All other plant species recorded were associated with the surrounding hedgerows and grassy verges.

4.2.7 Amenity grassland (GA2)

This type of grassland was recorded within or in front of a number of residential properties surrounding the site. Rye-grasses (*Lolium spp.*) or other cultivated grass varieties dominated these areas. Broadleaved herbs such as Daisy (*Bellis perennis*), Dandelion (*Taraxacum spp.*), clovers (*Trifolium spp.*) and plantains (*Plantago spp.*) were common.

4.2.8 Buildings and artificial surfaces (BL3)

This broad category incorporates all the houses, roadways, hard stands around houses, driveways and the access road to the small cluster of houses north of the R445. Species were limited to a few small clumps of coarse grasses like False Oat-grass (*Arrhenatherum elatius*) and Cock's-foot (*Dactylis glomerata*) and 'weed' species including Dandelion (*Taraxacum spp.*) and Ragworts (*Senecio spp.*).

4.2.9 Arable Land (BC1)

Agricultural land that is cultivated and managed for the production of cereals (wheat, barley, oats, maize), were recorded along the eastern and western side of the L2031. These had recently been harvested and the fields were in stubble at the time of surveying.

5 Evaluation of Significance of Habitats

This section evaluates the ecological significance of the habitats discussed in detail above. Using the guidelines provided in section 3.3.

Table 4: Evaluation of Significance of Impacts

Habitat Types	Evaluation	Rationale
Hedgerows	High Local	Mature hedgerows Ecological corridors Feeding and nesting opportunities for birds
Dry meadow and grassy verges	Low Local	Support some flowering species that may support invertebrate communities
Treelines	High Local	Mature treelines Ecological corridors Feeding and nesting opportunities for birds
Improved Grassland	Low Local	Small areas of generally species poor grassland and grassy verges. Often highly modified.
Recolonising bare ground	Low Local	Small areas of generally species poor ground. Highly modified.
Drainage ditches	Low Local	Small areas supporting limited wetland vegetation
Amenity grassland	Low Local	Small areas of generally species poor grassland and grassy verges. Often highly modified.
Buildings and artificial surfaces	Low Local	No ability to support plant or animal communities
Arable Land	Low Local	Generally species poor and of limited ability to support communities

6 Evaluation of Significance of Impacts: Habitats

The potential impacts on the ecological features identified are given in table 5.

Table 5: Impact Assessment for Site Habitats

Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Hedgerows	High Local	Possible disturbance to bird species during construction.	Negligible	Short-term/Possible
Dry meadow and grassy verges	Low Local	Most will be lost	Negligible	Permanent/Likely
Treelines	High local	-Some mature treelines will be removed. - Some treelines will be pruned/cut back	Negligible	Long-term / Likely
Improved Grassland	Low Local	No impacts predicted	None	None
Recolonising bare ground	Low Local	Some may be lost	Negligible	Long-term/ Unlikely
Drainage ditches	Low Local	No significant impacts predicted	None	None
Amenity grassland	Low Local	Some will be lost	Negligible	Long-term/ Likely
Buildings and artificial surfaces	Low Local	No significant impacts predicted	None	None
Arable Land	Low Local	No significant impacts predicted	None	None

7 Impact Mitigation

Mitigation measures to address the potential impacts as detailed above on the ecological features are given in table 6.

Table 6: Habitat mitigation required

Ecological feature	Nature of Impact	Recommended Mitigation Measures
Hedgerows	<ul style="list-style-type: none"> - Some hedgerows will be partially removed. - Some hedgerows will be pruned/cut back 	<ul style="list-style-type: none"> - Mature hedgerows retained where possible - Native species used in reinstatement - Pruning to be carried out at correct time of year
Dry Meadow & Grassy Verges	Some will be lost	Replanting and management schemes to be drawn up to allow habitat recreation along remaining verges.
Treelines	<ul style="list-style-type: none"> -Some mature treelines will be partially removed. - Some treelines will be pruned/cut back 	<ul style="list-style-type: none"> -Removal of mature trees to be minimised - Younger trees removed where possible - Replanting to be carried out on like-for-like basis where possible - Pruning to be carried out at correct time of year
Improved agricultural grassland	Some may be lost	No mitigation required
Recolonising bare ground	Some may be lost	No mitigation required
Drainage ditches	Likely to be diverted or culverted	No mitigation required
Amenity Grassland	Some will be lost	No mitigation required

Ecological feature	Nature of Impact	Recommended Mitigation Measures
Buildings and Artificial Surfaces	Some may be lost or altered	No mitigation required
Arable Land	Some may be lost or altered	No mitigation required

7.1 Fauna

7.1.1 Mammal Activity

No otter holts or any other signs of otter were recorded during the course of this survey. No Badger (*Meles meles*) setts, scat, scratching or latrines were identified within study area. However the site may form part of the home range of some badger communities. Works are not considered likely to cause the splitting of the home range of any badger communities. No mammal tracks or trails were recorded that indicate that this area is being used by any mammal species on a regular basis.

No signs of Red Squirrel (*Sciurus vulgaris*) or Pine Marten (*Martes martes*) were recorded within or surrounding the site. These would be unlikely to occur here given the lack of woodland cover locally.

Table 7: Impacts and Mitigation for Mammal Species

Mammals	
Impact Severity	Negligible
Impacts	No significant impacts to any mammal species likely as a result of the proposed development
Mitigation	No mitigation is required

7.1.2 Breeding Birds

A dedicated bird survey was not carried out. Bird observed during the survey can be seen in table 8. No significant impacts are expected to any of these species as a result of the proposed development. No 'red-listed' birds - i.e. birds of highest conservation concern (Birdwatch Ireland, 2015) were noted occurring on site. Two species observed are 'amber status' with the remaining species being 'green status'. These species are widespread and common. The boundary hedgerows and treelines of the area are likely to be of high local importance for birds.

Table 8: Bird species recorded during the site survey

Species name	Common Name	Conservation of Concern - status
<i>Erithacus rubecula</i>	Robin	Amber
<i>Sturnus vulgaris</i>	Starling	Amber
<i>Columba palumbus</i>	Wood pigeon	Green
<i>Corvus frugilegus</i>	Rook	Green
<i>Pica pica</i>	Magpie	Green

Table 9: Impacts and Mitigation for Bird species

Birds	
Impact Severity	Minor Adverse
Impacts	Loss of feeding and possible nesting sites within Treelines and hedgerows
Mitigation	Do not remove any vegetation during the bird nesting season. Compensatory planting carried out where possible

7.1.3 Invasive species

Ireland is a signatory of a number of international treaties and conventions, including the Convention on Biological Diversity. Such treaties and conventions require the Irish Government to address issues of invasive alien species. This has been implemented through national

legislation via the Wildlife Acts 1976 and 2000 (as amended) and further regulated through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

Articles 49 and 50 of these latter regulations sets out the legal implications associated with alien invasive species and Schedule 3 of the regulations lists non-native species subject to the restrictions of Articles 49 and 50.

Under Article 49 and 50 of these Regulations it is an offence to:

- Plant, disperse, allow dispersal or cause the spread of invasive species.
- Keep the plants in possession for the purpose of sale, breeding, reproduction, propagation, distribution, introduction or release.
- Keep anything from which the plant can be reproduced, or propagated from, without a granted licence.

No invasive species listed on schedule 3 were recorded on site. As such invasive species are not predicted to be a constraint to these road improvement works. The only invasive species recorded was Snowberry. This plant should be removed where works permit this.

Table 10: Invasive Species

Invasive Species	
Impact Severity	Negligible
Impacts	No significant impacts on the proposed works or on the surrounding landscape as a result of invasive species
Mitigation	Remove Snowberry where possible.

7.1.4 Amphibians and Reptiles

It was noted that no suitable breeding habitat for the Common Frog (*Rana temporaria*) and Smooth Newt (*Lissotriton vulgaris*) exists within the site with the exception of the small drain which is sub-optimal for amphibian species. Suitable habitat for the Common or Viviparous Lizard (*Lacerta vivipara*) was not recorded.

Table 11: Impacts and Mitigation for Amphibians and Reptiles

Amphibians and Reptile	
Impact Severity	Negligible
Impacts	No significant impacts to any Amphibians or Reptiles are likely as a result of the proposed development
Mitigation	No mitigation is required

7.1.5 Bats

A dedicated bat survey was not carried out as part of this survey work. Instead an estimation of potential bat roosting opportunities was investigated.

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions. All bats are listed in Annex IV of the Habitats Directive and the greater horseshoe bat and lesser horseshoe bat are further listed under Annex II.

Potential Bat roosting habitat was recorded within the building associated with the radio tower. These were corrugated roofed sheds with some small spaces recorded that may allow bats to

enter into these buildings. This habitat was be considered of low potential for bats given they generally prefer tiled roofs then corrugate, the degree of light and noise pollution locally and the lack of suitable feed habitat locally.

Dawn and dusk surveys should however be carried out on this site to ascertain whether any of these buildings contain roosts prior to the removal or alteration of any of these building as part of the junction improvement scheme.

Table 12: Impacts and Mitigation for Bats

Bats	
Impact Severity	Negligible
Impacts	No significant impacts to bat species likely as a result of the proposed development
Mitigation	Survey for bats to be carried out

8 Conclusion

No significant negative impacts on habitats or protected species are predicted arising from the proposed junction improvement works on the R445. Impacts arising during the works will be short-term and negligible to minor adverse. The land take for these road works will generally

involve losses of hedgerows, verges and improved grassland fields. No habitats, designated areas or protected species were found within or immediately surrounding the proposed site of works. This development, singly or in conjunction with other development in the area will not impact negatively on any site of or species of national or international importance.

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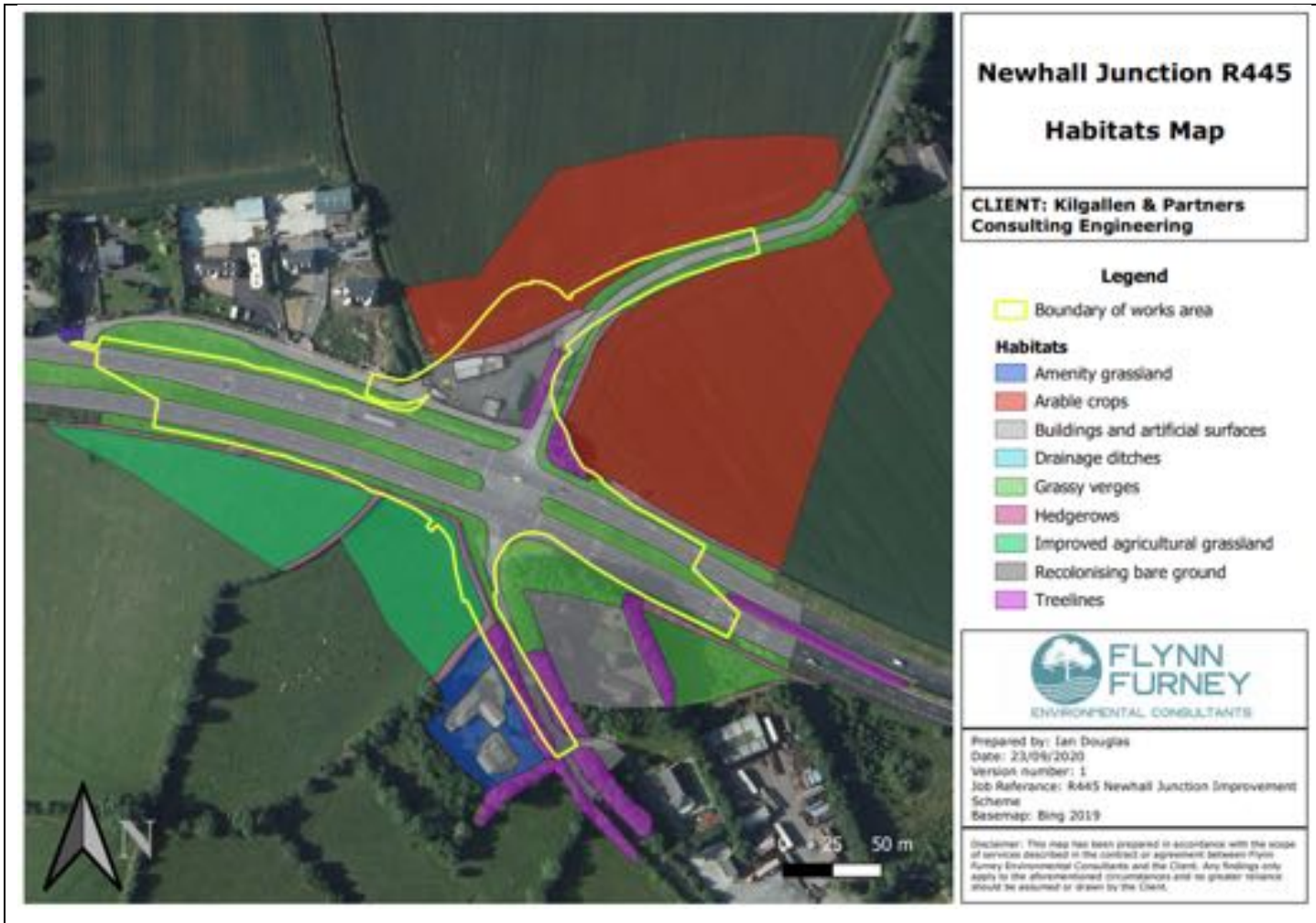
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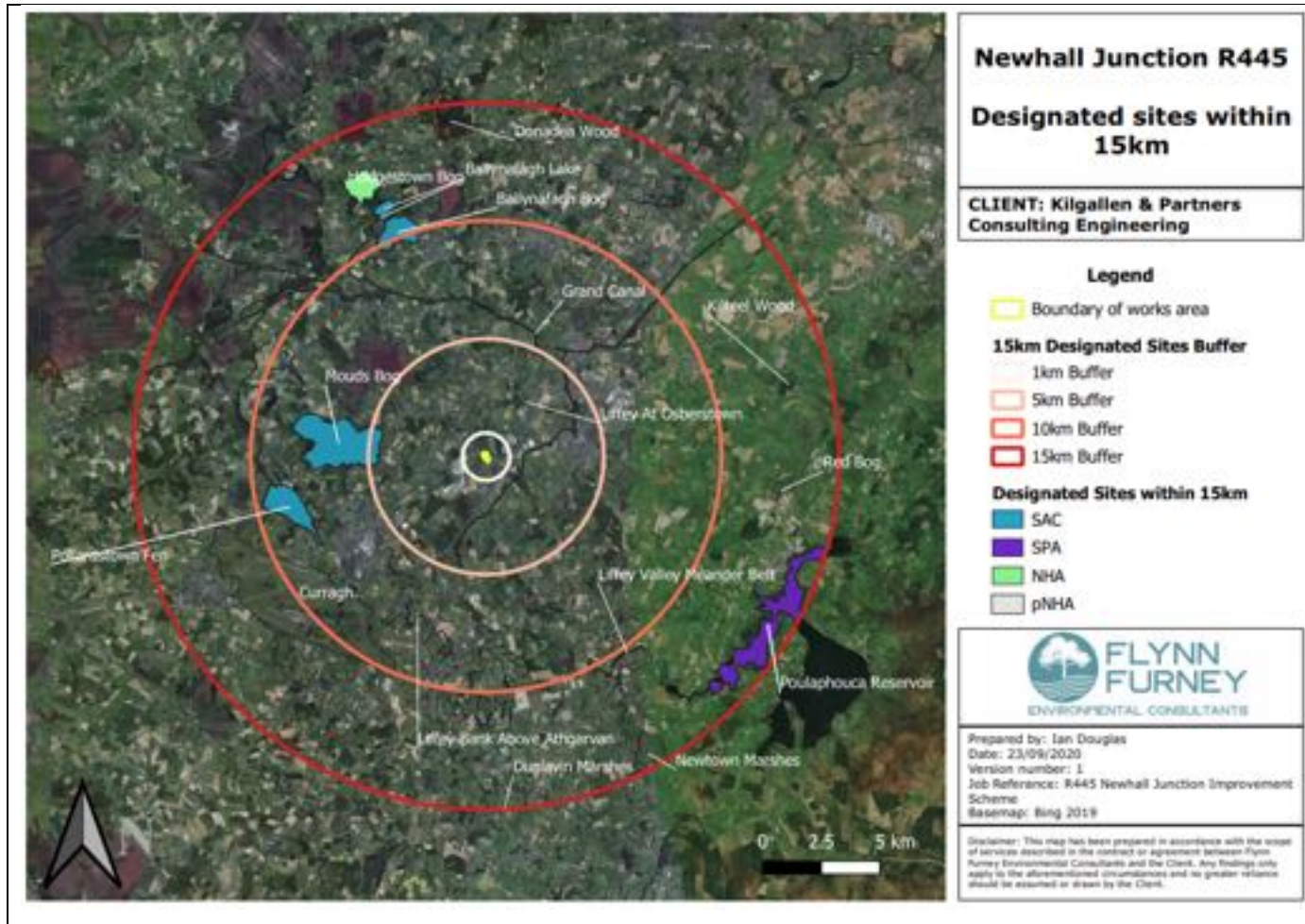
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Appendix A1: Habitats Maps




Appendix A2: Designated Areas Map





Appendix B: Site Photos

<p>Area of recolonising bare ground and buildings inside yard</p>	<p>Area of verge grassland and arable land along the L2031</p>
	
<p>Treeline of birch and elm south of junction</p>	<p>Area of cleared treeline south of junction along the L6064</p>
	

<p>Area of grassy verge and hedgerow along the south of the R445</p>	<p>Grassy verge along R445, east of junction</p>
	

<p>Grassy verge to south of junction</p>	<p>Drainage ditch adjacent side road</p>
	

<p>Improved grassland to south of junction</p>	<p>Grassy median strip</p>
 A photograph showing a well-maintained green grassy field. A wooden fence runs along the right side of the field. In the background, there are trees and a blue sky with scattered white clouds.	 A photograph of a grassy median strip between two road lanes. The grass is green and appears to be a mix of species. In the distance, a road and some trees are visible under a bright sky.

<p>Grass verge to north of R445</p>	<p>Access road for dwellings and local authority yard</p>
 A photograph of a grassy verge area. The grass is green and somewhat overgrown. In the background, there are trees and a blue sky with clouds.	 A photograph of a paved access road. The road is flanked by a stone wall on the left and a grassy area on the right. There are some white markers along the edge of the road. In the background, there are buildings and a blue sky with clouds.

Appendix C: Species lists from NBDC

Species group	Species name	Record count	Date of last record	Title of dataset	Designation
amphibian	Common Frog (<i>Rana temporaria</i>)	1	31/12/1979	Irish National Frog Database	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts
bird	Barn Owl (<i>Tyto alba</i>)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Barn Swallow (<i>Hirundo rustica</i>)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Black-billed Magpie (<i>Pica pica</i>)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Blackcap (<i>Sylvia atricapilla</i>)	3	31/12/2011	Bird Atlas 2007 - 2011	

bird	Black-headed Gull (<i>Larus ridibundus</i>)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Blue Tit (<i>Cyanistes caeruleus</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Brambling (<i>Fringilla montifringilla</i>)	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Chaffinch (<i>Fringilla coelebs</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Coal Tit (<i>Parus ater</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Blackbird (<i>Turdus merula</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Bullfinch (<i>Pyrrhula pyrrhula</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Buzzard (<i>Buteo buteo</i>)	3	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Chiffchaff (<i>Phylloscopus collybita</i>)	4	31/12/2011	Bird Atlas 2007 - 2011	

bird	Common Coot (Fulica atra)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Cuckoo (Cuculus canorus)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Grasshopper Warbler (Locustella naevia)	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Kestrel (Falco tinnunculus)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	Common Kingfisher (Alcedo atthis)	6	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Linnet (Carduelis cannabina)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Moorhen (Gallinula chloropus)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Pheasant (Phasianus colchicus)	6	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species

bird	Common Pochard (<i>Aythya ferina</i>)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Quail (<i>Coturnix coturnix</i>)	1	31/07/1991	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Common Raven (<i>Corvus corax</i>)	3	31/12/2011	Bird Atlas 2007 - 2011	
bird	Common Redshank (<i>Tringa totanus</i>)	1	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List

bird	Common Snipe (Gallinago gallinago)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Starling (Sturnus vulgaris)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Common Swift (Apus apus)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	Common Wood Pigeon (Columba palumbus)	6	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Corn Crane (Crex crex)	2	31/07/1991	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Eurasian Collared Dove (Streptopelia decaocto)	4	31/12/2011	Bird Atlas 2007 - 2011	

bird	Eurasian Curlew (Numenius arquata)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Eurasian Jackdaw (Corvus monedula)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Jay (Garrulus glandarius)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Siskin (Carduelis spinus)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Sparrowhawk (Accipiter nisus)	3	31/12/2011	Bird Atlas 2007 - 2011	

bird	Eurasian Teal (<i>Anas crecca</i>)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Eurasian Treecreeper (<i>Certhia familiaris</i>)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Eurasian Woodcock (<i>Scolopax rusticola</i>)	2	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	European Golden Plover (Pluvialis apricaria)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	European Goldfinch (Carduelis carduelis)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Greenfinch (Carduelis chloris)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	European Honey-buzzard (Pernis apivorus)	1	31/12/1881	Rare birds of Ireland	
bird	European Robin (Erithacus rubecula)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Fieldfare (Turdus pilaris)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Goldcrest (Regulus regulus)	6	31/12/2011	Bird Atlas 2007 - 2011	

bird	Great Cormorant (Phalacrocorax carbo)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Great Tit (Parus major)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Green Sandpiper (Tringa ochropus)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	
bird	Grey Heron (Ardea cinerea)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	Grey Wagtail (Motacilla cinerea)	5	31/12/2011	Bird Atlas 2007 - 2011	

bird	Greylag Goose (Anser anser)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Hedge Accentor (Prunella modularis)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Herring Gull (Larus argentatus)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Hooded Crow (Corvus cornix)	5	31/12/2011	Bird Atlas 2007 - 2011	

bird	House Martin (Delichon urbicum)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	House Sparrow (Passer domesticus)	6	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Lesser Black-backed Gull (Larus fuscus)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Lesser Redpoll (Carduelis cabaret)	4	31/12/2011	Bird Atlas 2007 - 2011	

bird	Little Grebe (Tachybaptus ruficollis)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Long-eared Owl (Asio otus)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Long-tailed Tit (Aegithalos caudatus)	4	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mallard (Anas platyrhynchos)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
bird	Meadow Pipit (Anthus pratensis)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mew Gull (Larus canus)	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	Mistle Thrush (<i>Turdus viscivorus</i>)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Mute Swan (<i>Cygnus olor</i>)	5	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Northern Lapwing (<i>Vanellus vanellus</i>)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Northern Wheatear (<i>Oenanthe oenanthe</i>)	1	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	Red Grouse (Lagopus lagopus)	1	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
bird	Red-legged Partridge (Alectoris rufa)	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Redwing (Turdus iliacus)	2	31/12/2011	Bird Atlas 2007 - 2011	
bird	Reed Bunting (Emberiza schoeniclus)	4	31/12/2011	Bird Atlas 2007 - 2011	
bird	Rock Pigeon (Columba livia)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
bird	Rook (Corvus frugilegus)	6	31/12/2011	Bird Atlas 2007 - 2011	

bird	Sand Martin (Riparia riparia)	3	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Sedge Warbler (Acrocephalus schoenobaenus)	3	31/12/2011	Bird Atlas 2007 - 2011	
bird	Short-eared Owl (Asio flammeus)	1	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Sky Lark (Alauda arvensis)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Song Thrush (Turdus philomelos)	6	31/12/2011	Bird Atlas 2007 - 2011	

bird	Spotted Flycatcher (<i>Muscicapa striata</i>)	4	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Stock Pigeon (<i>Columba oenas</i>)	2	31/07/1991	The Second Atlas of Breeding Birds in Britain and Ireland: 1988-1991	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Stonechat (<i>Saxicola torquata</i>)	1	31/12/2011	Bird Atlas 2007 - 2011	
bird	Tufted Duck (<i>Aythya fuligula</i>)	2	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

bird	Whinchat (Saxicola rubetra)	1	31/07/1972	The First Atlas of Breeding Birds in Britain and Ireland: 1968-1972.	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	White Wagtail (Motacilla alba)	6	31/12/2011	Bird Atlas 2007 - 2011	
bird	White-throated Dipper (Cinclus cinclus)	5	31/12/2011	Bird Atlas 2007 - 2011	
bird	Whooper Swan (Cygnus cygnus)	1	29/02/1984	The First Atlas of Wintering Birds in Britain and Ireland: 1981/82-1983/84.	Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
bird	Willow Warbler (Phylloscopus trochilus)	4	31/12/2011	Bird Atlas 2007 - 2011	
bird	Winter Wren (Troglodytes troglodytes)	6	31/12/2011	Bird Atlas 2007 - 2011	

bird	Yellowhammer (<i>Emberiza citrinella</i>)	6	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
fern	Hart's-tongue (<i>Phyllitis scolopendrium</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Alder (<i>Alnus glutinosa</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	American Willowherb (<i>Epilobium ciliatum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Annual Meadow-grass (<i>Poa annua</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Ash (<i>Fraxinus excelsior</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Beech (<i>Fagus sylvatica</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Black Medick (<i>Medicago lupulina</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Blue Water-speedwell (<i>Veronica anagallis-aquatica</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Bramble (<i>Rubus fruticosus</i> agg.)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Branched Bur-reed (<i>Sparganium erectum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Broad-leaved Dock (Rumex obtusifolius)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Broad-leaved Pondweed (Potamogeton natans)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Brooklime (Veronica beccabunga)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Bulrush (Typha latifolia)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cat's-ear (Hypochaeris radicata)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cock's-foot (Dactylis glomerata)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Bird's-foot-trefoil (Lotus corniculatus)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Duckweed (Lemna minor)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Field-speedwell (Veronica persica)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Mouse-ear (Cerastium fontanum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Nettle (Urtica dioica)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Poppy (Papaver rhoeas)	2	14/08/2019	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Common Reed (Phragmites australis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Common Valerian (Valeriana officinalis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cow Parsley (Anthriscus sylvestris)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Crack-willow (Salix fragilis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Creeping Bent (Agrostis stolonifera)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Creeping Buttercup (Ranunculus repens)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Creeping Cinquefoil (Potentilla reptans)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Creeping Thistle (Cirsium arvense)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Crested Dog's-tail (Cynosurus cristatus)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cuckooflower (Cardamine pratensis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Curled Dock (Rumex crispus)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cut-leaved Crane's-bill (Geranium dissectum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Cut-leaved Dead-nettle (Lamium hybridum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Dog-rose (Rosa canina)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Elder (Sambucus nigra)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	False-brome (Brachypodium sylvaticum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Festuca rubra agg.	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Floating Sweet-grass (Glyceria fluitans)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Fool's-water-cress (Apium nodiflorum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Germander Speedwell (Veronica chamaedrys)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Glaucous Sedge (Carex flacca)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Gorse (Ulex europaeus)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Great Willowherb (Epilobium hirsutum)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Groundsel (Senecio vulgaris)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Hairy-brome (Bromopsis ramosa)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Hard Rush (Juncus inflexus)	2	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Hawthorn (Crataegus monogyna)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Hedge Bindweed (Calystegia sepium)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Hemlock Water-dropwort (Oenanthe crocata)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Ivy (Hedera helix)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Japanese Knotweed (Fallopia japonica)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
flowering plant	Lesser Celandine (Ranunculus ficaria)	2	25/03/2020	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Lesser Pond-sedge (Carex acutiformis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Lesser Stitchwort (Stellaria graminea)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Lesser Water-parsnip (Berula erecta)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Meadow Foxtail (Alopecurus pratensis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Meadowsweet (Filipendula ulmaria)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Opposite-leaved Golden-saxifrage (Chrysosplenium oppositifolium)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Osier (Salix viminalis)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Oxeye Daisy (<i>Leucanthemum vulgare</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Pendulous Sedge (<i>Carex pendula</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Perennial Rye-grass (<i>Lolium perenne</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Primrose (<i>Primula vulgaris</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Red Clover (<i>Trifolium pratense</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Red Dead-nettle (<i>Lamium purpureum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Red-osier Dogwood (<i>Cornus sericea</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Reed Canary-grass (<i>Phalaris arundinacea</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Remote Sedge (<i>Carex remota</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Rough Meadow-grass (<i>Poa trivialis</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	<i>Salix cinerea</i>	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Selfheal (<i>Prunella vulgaris</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Snowberry (<i>Symphoricarpos albus</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Soft-rush (<i>Juncus effusus</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	Spear Thistle (<i>Cirsium vulgare</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Spiked Water-milfoil (<i>Myriophyllum spicatum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Sycamore (<i>Acer pseudoplatanus</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species
flowering plant	Tall Fescue (<i>Festuca arundinacea</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Taraxacum aggregate	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Timothy (<i>Phleum pratense</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Tufted Hair-grass (<i>Deschampsia cespitosa</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Water Mint (<i>Mentha aquatica</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Water-cress (<i>Rorippa nasturtium-aquaticum</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Water-plantain (<i>Alisma plantago-aquatica</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	White Clover (<i>Trifolium repens</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	

flowering plant	White Willow (<i>Salix alba</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Wild Angelica (<i>Angelica sylvestris</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Wild Carrot (<i>Daucus carota</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Wild Privet (<i>Ligustrum vulgare</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
flowering plant	Yellow Iris (<i>Iris pseudacorus</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
fungus	Pestle Puffball (<i>Handkea excipuliformis</i>)	1	31/12/1988	Fungal Records for Ireland	
fungus	Stump Puffball (<i>Lycoperdon pyriforme</i>)	1	31/12/1986	Fungal Records for Ireland	
horsetail	Field Horsetail (<i>Equisetum arvense</i>)	1	31/01/2007	Online Atlas of Vascular Plants 2012-2020	
insect butterfly	- Brimstone (<i>Gonepteryx rhamni</i>)	1	31/12/1976	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	- Dark Green Fritillary (<i>Argynnis aglaja</i>)	1	31/12/1976	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	Threatened Species: Vulnerable
insect butterfly	- Dingy Skipper (<i>Erynnis tages</i>)	1	31/12/1976	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	Threatened Species: Near threatened
insect butterfly	- Green-veined White (<i>Pieris napi</i>)	1	15/05/1977	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	

insect butterfly	-	Large White (<i>Pieris brassicae</i>)	1	31/10/1969	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Marsh Fritillary (<i>Euphydryas aurinia</i>)	9	31/12/2010	All Ireland Marsh Fritillary Database	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Threatened Species: Vulnerable
insect butterfly	-	Orange-tip (<i>Anthocharis cardamines</i>)	1	15/05/1977	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Peacock (<i>Inachis io</i>)	2	15/05/1977	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Red Admiral (<i>Vanessa atalanta</i>)	1	31/10/1969	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Small Copper (<i>Lycaena phlaeas</i>)	1	31/12/1978	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Small Tortoiseshell (<i>Aglais urticae</i>)	1	31/10/1969	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly	-	Small White (<i>Pieris rapae</i>)	1	31/10/1969	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	

insect butterfly -	Speckled Wood (Pararge aegeria)	1	31/12/1978	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	
insect butterfly -	Wall (Lasiommata megera)	1	31/12/1978	Distribution Atlas of Butterflies in Ireland 1979 (An Foras Forbartha)	Threatened Species: Endangered
insect - hymenopteran	Common Carder Bee (Bombus (Thoracombus) pascuorum)	1	22/04/2018	Bees of Ireland	
insect - louse (Phthiraptera)	Felicola (Suricatoecus) vulpis	1	11/02/1946	Lice (Phthiraptera) of Ireland	
insect - louse (Phthiraptera)	Trichodectes (Stachiella) ermineae	1	31/12/1987	Lice (Phthiraptera) of Ireland	
insect - moth	Dark Sword-grass (Agrotis ipsilon)	1	31/12/1985	Moths Ireland	
insect - true bug (Hemiptera)	Saldula orthochila	1	19/10/1927	True Bugs (Heteroptera) of Ireland	
insect - true fly (Diptera)	Anasimyia lineata	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Cheilosia albitarsis	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Cheilosia pagana	1	02/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Cheilosia scutellata	1	02/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Chrysogaster solstitialis	1	02/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Epistrophe grossulariae	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	

insect - true fly (Diptera)	<i>Eupeodes corollae</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Eupeodes latifasciatus</i>	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Ferdinandea cuprea</i>	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Helophilus hybridus</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Leucozona glaucia</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Melangyna arctica</i>	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Melangyna umbellatarum</i>	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Melanogaster hirtella</i>	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
Insect - true fly (Diptera)	<i>Meligramma cincta</i>	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Meliscaeva cinctella</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Merodon equestris</i>	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Neoascia podagrica</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Pipiza austriaca</i>	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Pipiza noctiluca</i>	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Platycheirus albimanus</i>	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	<i>Platycheirus granditarsus</i>	1	20/08/1952	Hoverflies (Syrphidae) of Ireland	

insect - true fly (Diptera)	Platycybeus rosarum	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Tropidia scita	1	09/06/1953	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Xylota segnis	1	11/08/1952	Hoverflies (Syrphidae) of Ireland	
insect - true fly (Diptera)	Xylota sylvarum	1	04/06/1953	Hoverflies (Syrphidae) of Ireland	
liverwort	Common Crystalwort (Riccia sorocarpa)	1	31/12/2002	Bryophytes of Ireland	Threatened Species: Least concern
liverwort	Fringed Heartwort (Ricciocarpos natans)	4	31/12/1971	Bryophytes of Ireland	Threatened Species: Near threatened
mollusc	Arion (Arion)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Arion (Kobeltia)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Brown Lipped Snail (Cepaea (Cepaea) nemoralis)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Budapest Slug (Tandonia budapestensis)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species
mollusc	Cellar Snail (Oxychilus (Oxychilus) cellarius)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Chestnut Slug (Deroceras (Deroceras) panormitanum)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	

mollusc	Clear Glass Snail (Aegopinella pura)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Columella	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Common Chrysalis Snail (Lauria (Lauria) cylindracea)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Common Garden Snail (Cornu aspersum)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species
mollusc	Common Whorl Snail (Vertigo (Vertigo) pygmaea)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Near threatened
mollusc	Crystal Snail (Vitrea crystallina)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Desmoulin's Whorl Snail (Vertigo (Vertigo) moulinsiana)	1	01/04/1971	All Ireland Non-Marine Molluscan Database	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: Wildlife Acts Threatened Species: Endangered
mollusc	Dwarf Snail (Punctum (Punctum) pygmaeum)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	English Chrysalis Snail (Leiostyla (Leiostyla) anglica)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Vulnerable
mollusc	Euconulus	1	24/09/1977	All Ireland Non-Marine Molluscan Database	

mollusc	Garlic Snail (Oxychilus (Oxychilus) alliarius)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Great Grey Slug (Limax maximus)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Hairy Snail (Trochulus (Trochulus) hispidus)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Heath Snail (Helicella itala)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Vulnerable
mollusc	Hedgehog Slug (Arion (Kobeltia) intermedius)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Jenkins' Spire Snail (Potamopyrgus antipodarum)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Invasive Species: Invasive Species Invasive Species: Invasive Species >> Medium Impact Invasive Species
mollusc	Large Amber Snail (Succinea putris)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Least Slippery Snail (Cochlicopa cf. lubricella)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Lesser Bulin (Merdigera obscura)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Endangered
mollusc	Long-toothed Herald Snail (Carychium tridentatum)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Milky Crystal Snail (Vitrea contracta)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Netted Slug (Deroceras)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	

	(Deroceras) reticulatum)				
mollusc	Pellucid Glass Snail (Vitrina pellucida)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Prickly Snail (Acanthinula aculeata)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Near threatened
mollusc	Rock Snail (Pyramidula pusilla)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Rounded Snail (Discus (Gonyodiscus) rotundatus)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Silver Slug (Arion (Carinarion) silvaticus)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Slippery Moss Snail (Cochlicopa cf. lubrica)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Smooth Glass Snail (Aegopinella nitidula)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Strawberry Snail (Trochulus (Trochulus) striolatus)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Tree Slug (Lehmannia marginata)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
mollusc	Tree Snail (Balea (Balea) perversa)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	Threatened Species: Vulnerable
mollusc	Two-toothed Door Snail (Clausilia (Clausilia) bidentata)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	

mollusc	Yellow Slug (<i>Limacus flavus</i>)	1	24/09/1977	All Ireland Non-Marine Molluscan Database	
moss	Delicate Tamarisk-moss (<i>Thuidium delicatulum</i>)	1	31/12/1979	Bryophytes of Ireland	Threatened Species: Least concern
moss	Fatfoot Pocket-moss (<i>Fissidens crassipes</i>)	1	31/12/1968	Bryophytes of Ireland	Threatened Species: Least concern
moss	Fine-leaved Marsh Feather-moss (<i>Campyliadelphus elodes</i>)	1	30/06/1953	Bryophytes of Ireland	Threatened Species: Near threatened
moss	Giant Spear-moss (<i>Calliergon giganteum</i>)	1	30/06/1953	Bryophytes of Ireland	Threatened Species: Least concern
moss	Hooded Bristle-moss (<i>Orthotrichum cupulatum</i>)	1	31/05/1968	Bryophytes of Ireland	Threatened Species: Least concern
moss	Hooked Scorpion-moss (<i>Scorpidium scorpioides</i>)	1	31/07/1938	Bryophytes of Ireland	Threatened Species: Least concern
moss	Marsh Thyme-moss (<i>Plagiomnium ellipticum</i>)	1	30/06/1967	Bryophytes of Ireland	Threatened Species: Least concern
moss	River Feather-moss (<i>Brachythecium rivulare</i>)	1	30/06/1953	Bryophytes of Ireland	Threatened Species: Least concern
moss	Rusty Bog-moss (<i>Sphagnum fuscum</i>)	1	31/07/1956	Bryophytes of Ireland	Threatened Species: Least concern
moss	Whitish Feather-moss (<i>Brachythecium albicans</i>)	1	31/08/1951	Bryophytes of Ireland	Threatened Species: Least concern

terrestrial mammal	American Mink (Mustela vison)	1	01/02/1991	Badger and Habitats Survey of Ireland	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Brown Rat (Rattus norvegicus)	1	31/12/1985	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Eastern Grey Squirrel (Sciurus carolinensis)	1	31/12/1985	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species Invasive Species: Invasive Species >> EU Regulation No. 1143/2014 Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
terrestrial mammal	Eurasian Red Squirrel (Sciurus vulgaris)	1	31/12/1985	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	Protected Species: Wildlife Acts

terrestrial mammal	European Otter (Lutra lutra)	1	01/02/1991	Badger and Habitats Survey of Ireland	Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts
terrestrial mammal	House Mouse (Mus musculus)	1	31/12/1985	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	Invasive Species: Invasive Species Invasive Species: Invasive Species >> High Impact Invasive Species
terrestrial mammal	Irish Stoat (Mustela erminea subsp. hibernica)	1	31/12/1985	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	