Habitat Survey Results 2019

for N6 Galway City Ring road

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Scott Cawley, College House, 71 – 73 Rock Road, Blackrock, Co. Dublin, A94 F9X9, Ireland

Tel+353(1)676-9815 Fax +353(1) 676-9816

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1 Introduction

This Appendix A.3.1 to the Request for Further Information (RFI) Response has been prepared to document the results of the ecological habitat surveys undertaken between June and August 2019 as part of the response to items 3a and 3b of the RFI received from An Bord Pleanála (ABP) in respect of the application for permission for the N6 Galway City Ring Road (GCRR) submitted to ABP on 23 October 2018. Items 3a and 3b of the RFI required the provision of additional vegetation samples to support and aid the verification of the baseline habitat classifications and mapping presented in the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) for the N6 Galway City Ring Road.

Item 3a of the RFI states:

> *Provide details of vegetation samples (Relevé data) in each location where the development boundary overlaps with the Lough Corrib cSAC (as shown on Plates 2.3 to 2.6 of the NIS) with up to five samples for each habitat type at each location where space permits. Grid reference and photographs are to be provided for each.*

Item 3b of the RFI states:

> *Provide additional vegetation samples (Relevé data) to support the habitat mapping in other areas within the development boundary, with sufficient samples per habitat type, for empirical verification of the habitat mapping. Grid reference and photographs are to be provided for each.*

This appendix is structured as follows:

- Section 2 outlines the habitat survey work undertaken up to October 2018 in relation to the proposed road development
- Section 3 presents the methodology for the 2019 habitat surveys
- Section 4 presents an overview of the results of the 2019 habitat surveys and discussion of changes to the habitat baseline since the publication of the EIAR and NIS in October 2018 (with the full baseline and survey results data provided in **Annex 1**, **2** and **3** to this Appendix A.3.1 to the RFI Response)
- Section 5.1 discusses whether the findings of the habitat survey have any implications for the assessment presented in the published NIS
- Section 5.2 discusses whether the findings of the habitat survey have any implications for the assessment presented in the published EIAR

2 Background

The habitats baseline and impact assessment presented in the EIAR and NIS were informed by a series of habitat surveys undertaken between 2013 and 2018.

To ensure sufficient ecological data was available to inform the ecological assessment of potential options for a transport solution for Galway City and its environs, habitat surveys within the Lough Corrib cSAC commenced in 2013.

These surveys continued during the survey season in 2014 and included the full extents of the study area for the options assessment within lands inside and outside the Lough Corrib cSAC. Given the nature of the ecological constraints within the study area identified from the desktop study and through consultation, it was determined that detailed ecological surveying to a level required for an EIA assessment was required in order to develop feasible alternatives and to identify an option that has the least adverse impact on a European site. The guiding principles to determining the level of detail required for these surveys were:

- Will there be enough data available to identify the least damaging route (not only in terms of impacts on SACs/SPAs but also on non-designated Annex I habitats and Annex II species)?
- Are there currently any undesignated areas of Annex I habitats or populations of Annex I (birds)/ II (all other species) species which could qualify for inclusion within a cSAC?
- Will there be any significant adverse effects on the favourable conservation status of any areas of Annex I habitats or populations/habitats of Annex I (birds)/ II and IV (non-bird species) species?"

The areas identified during the desktop study for habitat surveys were the Lough Corrib cSAC firstly, ecological sites (i.e. areas identified of ecological interest)[1] secondly and thirdly other areas of interest with the level of surveys undertaken for each area specifically designed as follows:

- All Annex I habitat within the Lough Corrib cSAC was mapped to the vegetation community type and included a condition/quality assessment (monitoring stops)
- All other habitats within the Lough Corrib cSAC were mapped to Fossitt level 3 with valuations as per the NRA/CIEEM guidelines
- All identified ecological sites were mapped to Fossitt level 3 with valuations as per the NRA/CIEEM guidelines
- Habitat checks were completed for all other areas within the study area. These checks included a rapid assessment for affinity to Annex I habitat types and to other habitat types of local high value as per NRA/CIEEM. Further detailed

[1] Ecological Sites are sites of potential ecological value for the habitats present: i.e. determined to be at least of a Local Importance (higher value) (refer to National Roads Authority, 2009 for more detail). The boundaries of the Ecological Sites were initially defined based on interpretation of orthophotography and collation of available existing habitat information, in conjunction with a ground truthing exercise to verify the orthophotography interpretation. These boundaries were then refined, where appropriate, based on the findings of the various habitat surveys undertaken.

botanic assessment was undertaken where required to either vegetative community level for Annex I habitat types or Fossitt level 3 with valuations as per the NRA/CIEEM guidelines for all other habitat types.

These surveys are described in full in the EIAR (Section 8.2.4.2 and Appendix A.8.1) and in the NIS (Section 4.4.1.1). The 2014 surveys were followed up by additional surveys along the Emerging Preferred Route Corridor between 2015 and 2018 to inform the biodiversity assessment of the proposed road development for the EIAR and NIS.

As outlined in the EIAR and NIS, a significant number of relevés[2] were recorded as part of those habitat surveys in support of the classification of Annex I habitats. The collection of relevé data as part of the habitat surveys undertaken between 2013 and 2018 was to inform and support the classification of Annex I habitats across the study area. As Annex I habitat areas were key biodiversity constraints in the context of informing the route selection process, they were avoided, where possible, by the various route options. Hence, the majority of the relevés recorded at that time lie outside of the proposed development boundary.

3 Methodology

The 2019 habitat surveys broadly followed the methodologies set out in the EIAR and NIS but **were focussed on habitat areas within the proposed development boundary only** and adapted to respond specifically to items 3a and 3b of the RFI as detailed below.

3.1 Item 3a – habitat areas within Lough Corrib cSAC

Additional relevés were recorded in all habitat areas where the proposed development boundary overlaps with Lough Corrib cSAC, with up to five samples for each habitat type taken at each location where space permitted. Grid reference and photographs were recorded for each relevé and are included in digital format in **Annex 3** of the Appendix A.3.1 to the RFI Response.

Where the area of the overlap was too small to fulfil the area requirement for taking a relevé for that habitat type, a relevé was taken from outside of the overlap to include the actual overlap area and be within the same habitat type where possible, whilst also taking due cognisance of the potential for edge habitats.

[2] Relevés are small vegetation sampling plots used to record the plant species present and their relative abundance within the sampling plot, as a representative sample of a larger habitat area. Relevés are generally a standard size for a given habitat type, but this is also dependant on the subsequent use or analysis required of the data being collected. For example, a sampling plot of 2m x 2m is standard for most habitat types for habitat classification or long-term vegetation monitoring, with larger 10m x 10m (or sometimes 20m x 20m) plots used for woodland classification or monitoring.

3.2 Item 3b – all other habitat areas within the proposed development boundary

This element of the habitat survey involved a walkover of the area within the proposed development boundary and outside of Lough Corrib cSAC, to verify and photograph habitats[3], with relevés taken as outlined below. Visual checks were undertaken of habitats to verify any changes to habitat classifications and a photo record was taken as a reference dataset to support the habitat classifications.

In addition to the visual checks, relevé samples were taken from a representative number of habitat areas for each habitat type as outlined in **Table 1** below. The percentage of polygon to be sampled for each habitat type varied depending on the following factors:

- The ecological value of the habitat type
- The number of habitat areas which exist whereby sufficient and representative relevé sampling was undertaken for habitats with a proportionally larger number of habitat areas (e.g. dry calcareous and neutral grassland GS1 habitat areas)
- It was considered adequate for habitats of a very low ecological value to carry out a lower sampling percentage (e.g. approx. 18% of amenity grassland GA2 habitat areas were sampled)
- The potential for variation within a habitat type whereby habitats with a potentially higher degree of variation within a given habitat area were sampled at a higher percentage to ensure the variation is captured (e.g. there can be large variation in vegetation composition within grassland habitats and therefore a higher percentage of sampling may be warranted)
- The ecological value and potential for habitat areas to correspond to Annex I habitat types whereby certain habitats with a higher ecological value and a potentially high affinity to Annex I habitat types were sampled at a relatively higher sampling percentage (e.g. dry calcareous and neutral grassland GS1)

Where habitat areas were sampled the number of relevés recorded within each habitat area was decided in the field by the surveyor in consideration of:

- the size of the habitat area (in some areas it was not possible to fit in more than a single relevé)
- the degree of variation within the habitat polygon (i.e. more relevés were recorded where there was a higher degree of variation within a given habitat area)
- the complexity and ecological value of the habitat type. Habitats of a high ecological value and with a higher affinity to Annex I habitat types may require more than a single relevé in order to verify and support the habitat classification

[3] The habitat areas surveyed are those included in the GIS dataset N6GCRR_2019HabitatMap_Polygons.shp included in **Annex 3** to the Appendix A.3.1 to the RFI Response.

New relevés were not taken in habitat areas where a relevé had been recorded previously (between 2014 and 2018), and the existing habitat information from that relevé accurately represented the habitat area, and the habitat classification had not changed in the interim.

Habitat Type		Sample Size	
Fossitt Code	**Annex I Code**	**% of Habitat Areas**	**No. of Relevés**
BC4	n/a	66	2
ED2	n/a	Relevé taken where habitat has changed	
ED3	n/a	100	32
ER1	n/a	Not sampled (not suitable for relevés)	
ER2	*8240	100	6
FL5	n/a	Not sampled (not suitable for relevés)	
FL6	*3180	Not sampled – relevé recorded in 2014	
FL8	n/a	Not sampled (not suitable for relevés)	
FS1	n/a	Not sampled (could not be safely accessed)	
FW1	n/a	Not sampled (not suitable for relevés)	
FW2	n/a	Not sampled (not suitable for relevés)	
FW4	n/a	100	5
GA1	n/a	23	49
GA2	n/a	18	12
GM1	n/a	100	3
GS1	*6210/6210	97	121
GS2	n/a	41	18
GS3	n/a	86	18
GS4	6410	69	76
HD1	n/a	46	28
HH1	4030	96	41
HH3	4010	100	19
PB3	*7130	100	2
PF1	n/a	100	1
PF2	n/a	100	16
Residential	n/a	Not sampled (not suitable for relevés)	
WD1	n/a	70	19
WD2	n/a	Not sampled (not suitable for relevés)	
WD4	n/a	100	1
WD5	n/a	Not sampled (not suitable for relevés)	
WL1	n/a	Not sampled (not suitable for relevés)	
WL2	n/a	Not sampled (not suitable for relevés)	
WN2	*8240	85	34

Habitat Type		Sample Size	
WN6	*91E0	100	3
WS1	*8240	50	102
WS3	n/a	Not sampled	

Relevé Recording

Relevés were recorded on a handheld computer using a prepared form in TurbovegSD. The relevé size was 2m x 2m for all habitats except Limestone pavement and scrub habitats (which were sampled using a 5m x 5m relevé) and woodland habitats (which were sampled using a 10m x 10m relevé).

A photographic record of the relevé(s) and the associated habitat area was taken; with a minimum of one photo. The grid reference of each relevé was also recorded and used to plot the locations of each relevé in a GIS database. This data is included in **Annex 3** to this Appendix A.3.1 to the RFI Response.

Plant Nomenclature and Habitat Classification

Plant nomenclature follows that of the National Vegetation Database[4]. The general habitat classifications are as set out in *A Guide to Habitats in Ireland*[5] and for Annex I habitats, the *Interpretation manual of European Union Habitats EUR28*[6] was used with reference to the corresponding National and Regional habitat survey reports, as applicable:

- *Turloughs over 10 ha: vegetation survey and evaluation* (Goodwillie, R., 1992)
- *Turlough Hydrology, Ecology and Conservation* (Waldren, S. 2015, Ed.)
- *Summary of findings from the Survey of Potential Turloughs 2015* (O'Neill, F.H. & Martin, J.R., 2015)
- *The Irish semi-natural grasslands survey 2007-2012. Irish Wildlife Manuals, No. 78* (O'Neill et al., 2013)
- *The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. Irish Wildlife Manuals, No. 102* (Martin, J.R., O'Neill, F.H. & Daly, O.H., 2018)
- *Results of monitoring survey of old sessile oak woods and alluvial forests. Irish Wildlife Manuals, No. 71* (O'Neill, F.H. & Barron, S.J., 2013)
- *National survey of limestone pavement and associated habitats in Ireland. Irish Wildlife Manuals, No. 73* (Wilson, S. and Fernández, F., 2013)
- *Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79* (Perrin et al., 2014)

[4] Weekes, L.C. & FitzPatrick, Ú. (2010) *The National Vegetation Database: Guidelines and Standards for the Collection and Storage of Vegetation Data in Ireland. Version 1.0.* Irish Wildlife Manuals, No. 49. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
[5] Fossitt, J.A. (2000) *A Guide to Habitats in Ireland.* Heritage Council, Kilkenny.
[6] CEC. (Commission of the European Communities) (2013) *Interpretation manual of European Union Habitats EUR28*. European Commission, DG Environment.

4 Results of Ecological Habitat Surveys

4.1 Overview of 2019 surveys

As requested in the RFI, in excess of 700 relevés were recorded between June and August 2019 within the proposed development boundary. The results and analysis of this survey work are detailed in this report, with the locations of all relevés shown on **Figures 2.2.01 to 2.2.09** and **Figures 2.4.001 to 2.4.120** included in **Annex 2** to this Appendix A.3.1 to the RFI Response and the relevé data that supports the habitat classifications in each habitat area included in the digital datasets in **Annex 3** to this Appendix A.3.1 to the RFI Response. **Annex 1** to this Appendix A.3.1 to the RFI Response presents the species lists and references to the associated supporting relevé data for the habitats recorded along, and adjacent to, the proposed road development.

Section 4.2 below provides a review of the EIAR assessment in light of the changes to the habitat classifications and amendments to the habitat areas boundaries recorded in 2019.

4.2 Habitat Descriptions & 2019 Changes

The findings of the 2019 habitat surveys have resulted in changes to habitat classifications and extents within the proposed development boundary. These are summarised below. Overall the results of the 2019 habitat surveys have confirmed that the habitats are similar to those published in the EIAR and remain generally as described in Section 8.3.4 of the EIAR.

The complete list of habitat types recorded along the route of the proposed road development based on the 2019 habitat surveys, are listed below with newly represented habitats within the proposed road development inserted in red font and habitats which are not represented in the 2019 survey results indicated in struck out red font:

- Flower beds and borders (BC4)
- Buildings and artificial surfaces (BL3)
- Spoil and bare ground (ED2)
- Recolonising bare ground (ED3)
- Active quarries and mines (ED4)
- Exposed siliceous rock (ER1)
- Exposed calcareous rock (ER2), including the priority Annex I habitat *8240
- Limestone/marl lakes (FL3), including the Annex I habitat 3140
- Mesotrophic lakes (FL4)
- Eutrophic lakes (FL5)
- Turloughs (FL6), which corresponds with the priority Annex I habitat *3180

- Other artificial lakes and ponds (FL8)
- Calcareous springs (FP1), including the priority Annex I habitat *7220
- Reed and large sedge swamps (FS1), including the priority Annex I habitats *7210 and the Annex I habitat 6430
- ~~Tall-herb swamps (FS2), including the Annex I habitats 6430/*7210~~
- Eroding/upland rivers (FW1)
- Depositing/lowland rivers (FW2)
- Drainage ditches (FW4)
- Improved agricultural grassland (GA1)
- Amenity grassland (improved) (GA2)
- Marsh (GM1)
- Dry calcareous and neutral grassland (GS1), including the priority Annex I habitat *6210/Annex I habitat 6210
- Dry meadows and grassy verges (GS2), including the Annex I habitat 6510
- Dry-humid acid grassland (GS3), including the priority Annex I habitat *6230
- Wet grassland (GS4), including the Annex I habitat 6410
- Dense bracken (HD1)
- Dry siliceous heath (HH1), which corresponds with the Annex I habitat 4030
- ~~Dry calcareous heath (HH2), which corresponds with the Annex I habitat 4030~~
- Wet heath (HH3), which corresponds with the Annex I habitat 4010
- Rich fen and flush (PF1), including the Annex I habitats 7230/*7210
- Poor fen and flush (PF2),
- Lowland blanket bog (PB3), including the Annex I habitat *7130
- (Mixed) broadleaved woodland (WD1)
- Mixed broadleaved/conifer woodland (WD2)
- ~~(Mixed) conifer woodland (WD3)~~
- Conifer Plantation (WD4)
- Scattered trees and parkland (WD5)
- Hedgerows (WL1)
- Treelines (WL2)
- Oak-ash-hazel woodland (WN2), including the priority Annex I habitat *8240
- Riparian woodland (WN5)
- Wet willow-alder-ash woodland (WN6), including the priority Annex I habitat *91E0
- Scrub (WS1), including the priority Annex I habitat *8240

- ~~Immature woodland (WS2)~~
- Ornamental/non-native shrub (WS3)
- ~~Recently felled woodland (WS5)~~

Table 2 indicates the area of each habitat type present within the proposed development boundary which is a Key Ecological Receptor (KER) based on both the 2019 and 2018 surveys.[7]

Table 2: KER habitat types within the proposed development boundary

Habitat type	Extent Based on 2019 Surveys[8]	Extent Based on 2018 Surveys[9]
Priority Annex I habitat		
Turlough [*3180]	One (c.0.04ha of c.0.1ha is within fenceline)	One (c.0.04ha of c.0.1ha is within fenceline)
Petrifying springs [*7220]	One feature	One feature
Residual alluvial forests [*91E0]	c.0.14ha	c.0.1ha
Limestone pavement [*8240]	c. 2.71ha	c. 2.3ha
Calcareous grassland (*important orchid sites) [*6210]	0 ha (one area of 6m^2) and small areas within mosaics of *8240 above the Lackagh tunnel	None
Blanket bog (active) [*7130]	c. 0.01ha (one area of 93m^2)	None
Annex I habitat		
Wet heath [4010]	c.1.78ha	c.1.22ha
Dry heaths [4030]	c.1.5ha	c.1.96ha
Calcareous grassland [6210]	c.0.15ha	c.1.14ha
Molinia meadow [6410]	c.0.73ha	c.1.02ha
Local Importance (higher value)		
Calcareous springs (FP1)	Fifteen features	Fifteen features
Reed and large sedge swamps (FS1)	c.0.08ha	c.0.14ha
Tall-herb swamps (FS2)	None	c.0.03ha
Eroding/upland rivers (FW1)	c.120m of Sruthán na Líbeirtí c.220m of the Trusky Stream c.140m of the Bearna Stream (and tributary)	c.120m of Sruthán na Líbeirtí c.220m of the Trusky Stream c.140m of the Bearna Stream (and tributary)

[7] KERs are those biodiversity receptors within the ZoI of the proposed road development which are "both of sufficient value to be material in decision making and likely to be affected significantly"
[8] This includes either a measure of habitat area (ha), linear length of habitat lost (m/km), or a total number of point features affected (e.g. spring/seepage sites), as appropriate.
[9] This includes either a measure of habitat area (ha), linear length of habitat lost (m/km), or a total number of point features affected (e.g. spring/seepage sites), as appropriate.

Habitat type	Extent Based on 2019 Surveys[8]	Extent Based on 2018 Surveys[9]
	c.475m of the Tonabrocky Stream	c.475m of the Tonabrocky Stream
Drainage ditches (FW4)	c.0.08ha	c.0.12ha
Marsh (GM1)	c.0.06ha	c.0.2ha
Dry calcareous and neutral grassland (GS1)	c.43.5ha	c.13.7ha
Dry meadows and grassy verges (GS2)	c.9.50ha	c.8.2ha
Dry-humid acid grassland (GS3)	c.4.51ha	c.7.81ha
Wet grassland (GS4)	c.15.23ha	c.11.1ha
Poor fen and flush (PF2)	c.0.25ha	c.0.13ha
(Mixed) broadleaved woodland (WD1)	c.4.40ha	c.4.25ha
Mixed broadleaved/conifer woodland (WD2)	c.0.03ha	c.0.03ha
(Mixed) conifer woodland (WD3)	None	c.0.01ha
Oak-ash-hazel woodland (WN2)	c.3.9ha	c.4.18ha
Riparian woodland (WN5)	c.0.03ha (255m^2)	None
Scrub (WS1)	c.27.1ha	c.21.1ha
Exposed calcareous rock (ER2)	c.0.02ha	c.1.3ha (represted a mosaic with other habitat types)
Hedgerows (WL1)	c.10.2km	c.7.8km
Treelines (WL2)	c.5.2km	c.4km

The changes in Fossitt habitat classifications are mainly attributed to changes in grassland habitat types and to scrub encroachment. The largest change in grassland habitat is an increase in the area of Dry calcareous and neutral grassland (GS1) from 13.7ha to 43.5ha. The change in grassland habitat types are generally attributed to change in land use management since the EIAR surveys.

The changes in Annex I habitat classifications include:

- change in areas from Annex I habitats to non-Annex I habitat (changes from *8240, 4030, 4030/4010 mosaic, *91E0 and 6410 to non-Annex habitats)
- change in habitat areas from one Annex I habitat type to another Annex I habitat type (changes from 4030 or 4030/4010 mosaic to 4010 and in one case from 4010 to *7130)
- change in areas from non-Annex to Annex I habitat types (changes from GS4 and HD1 to 4010, from ED3 and HD1 to 4030/4010, from ED3, GS3, GS4 and HD1 to 4030, from WD1, WN2 and WS1 to *8240, and in one case from GS1 to 6210)

The main items to note in terms of Annex I habitats arising from the 2019 survey results are:

- the range of Annex I habitat types present within the proposed road development are similar to that published in the EIAR; all of the Annex I habitat types published in the EIAR were also recorded during the 2019 surveys, with the addition of one new habitat type which involved a single small area of *7310 (93m^2 in size)
- in the EIAR there was a total of 111 Annex I habitat areas while in the 2019 habitat survey results there are a total of 116 Annex I habitat areas
- the changes in the extent of Annex I habitat areas include:
    - an increase in the single area of *91E0 habitat from 0.1h to 0.14ha
    - an increase in the number and areas of *8240 increasing from 2.3ha to 2.71ha
    - the addition of a single area of *7130 of 93m^2 in size
    - the addition of small areas of *6210 within mosaics of *8240 above the Lackagh tunnel
    - an increase in 4010 from 1.22ha to 1.78ha
    - a reduction in 6210 from 1.14ha to 0.15ha
    - a reduction in 4030 from 1.96ha to 1.5ha
    - a reduction in 6410 from 1.02ha to 0.73ha

The changes in the habitat classifications in 2019 arise from a number of different factors including:

- the passage of time since the previous surveys were undertaken
- vegetation succession has occurred in the intervening time e.g. there has been an increase in the encroachment of scrub on grassland and heath habitats
- changes in land use management since the previous surveys were undertaken, in particular changes in grasslands
- the significant increase in relevé intensity of the 2019 surveys which resulted in finer scale mapping
- the application of intensive relevé sampling in 2019 as opposed to application of a combined approach of either relevés or a DAFOR[10] scale assessment across the proposed road development, which applies a finer scale approach to habitat surveying and classification

[10] DAFOR scale: D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare

5 Implications of the 2019 Habitat Surveys

The results and findings of the 2019 habitat surveys as they relate to both the NIS and the EIAR are discussed below. The implications for the findings and assessment in both the NIS and the EIAR as a result of changes to the habitat mapping are explained in **Section 5.1** and **5.2** respectively.

5.1 NIS

In response to the RFI, a total of 116 relevés were recorded between June and August 2019 across the overlap area between the proposed development boundary and Lough Corrib cSAC boundary. The locations of the relevés in relation to the the overlap area between the proposed development boundary and Lough Corrib cSAC are shown on **Figures 2.3.01** to **2.3.05** included in **Annex 2** to this Appendix A.3.1 and the full results of the 2019 habitat survey are shown on **Figures 2.5.01** to **2.5.15** and **2.6.01** to **2.6.15** in **Annex 2** to Appendix A.3.1 to this RFI Response.

The full relevé dataset, including GIS files, grid references and photographs, are provided in the digital datasets included in **Annex 3** to this Appendix A.3.1 t.

The findings of the 2019 habitat surveys resulted in some changes to habitat classifications and their extents within the overlap between the proposed development boundary and the Lough Corrib cSAC boundary . These are described below in **Section 5.1.2** with reference to the locations and habitat area codes as per Section 9.1.2.1 of the NIS. **Section 5.1.2** also provides a review of the NIS assessment in light of the changes to the habitat classifications and amendments to the habitat areas boundaries recorded in 2019.

5.1.1 2019 Habitat Survey Results in area of overlap

This section details the findings of the 2019 habitat surveys in the area where the proposed development boundary and the Lough Corrib cSAC boundary overlap. It is sub-divided into four sections with each section further sub-divided by habitat area references as per Section 9.1.2.1 of the NIS and as shown on **Figures 2.12.1 to 2.12.5** in **Annex 2** to this Appendix A.3.1 to the RFI Responsethat accompany this report. A description of the habitat type in each area is provided with the relevant supporting relevé noted.

5.1.1.1 Proposed River Corrib Bridge

The areas discussed below (areas 1.a to 1.g) are shown on **Figure 2.12.1** in **Annex 2** to this Appendix A.3.1 to the RFI Response.

Area 1.a

The relevés recorded in 2019 confirmed the habitats present in Area 1.a are a mosaic of dry meadows and grassy verges (GS2) and scrub (WS1). The relevé data also confirms the statement in the NIS that these habitat areas do not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.a in 2019: 4198_R1, 4198_R2, 4198_R3, 4077_R1 and 4078_R1.

Area 1.b

The relevés recorded in 2019 confirmed the habitats present in Area 1.b included buildings and artificial surfaces (BL3) and scrub (WS1), with the addition of areas of amenity grassland (GA2) and dry calcareous and neutral grassland (GS1) in the habitat mosaic. The relevé data also confirms the statement in the NIS that these habitat areas do not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.b in 2019: 5880_R1, 5880_R2, 5880_R3, 5880_R4 and 5506_R1.

Area 1.c

The relevés recorded in 2019 confirmed that Area 1.c is a treeline (WL2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.c in 2019: 4619_R1 and 4619_R2.

Area 1.d The relevés recorded in 2019 confirmed that Area 1.d is dry calcareous and neutral grassland (GS1). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.d in 2014: BEC 175.

The following relevés were recorded in Area 1.d in 2019: 4400_R1, 4400_R2, 4400_R3, 4400_R4 and 4400_R5.

Area 1.e The relevés recorded in 2019 confirmed that Area 1.e is dry calcareous and neutral grassland (GS1). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.e in 2016: RC-LQ R1.

The following relevés were recorded in Area 1.e in 2019: 4401_R1, 4401_R2, 4401_R3, 4401_R4 and 4401_R5.

Area 1.f The relevés recorded in 2019 confirmed that Area 1.f is mixed broadleaved woodland (WD1). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 1.f in 2014: BEC 174

The following relevés were recorded in Area 1.f in 2019: 3734_R1, 3734_R2, 3734_R3, 3734_R4 and 3734_R5.

Area 1.g

The classification of this habitat area was changed from the original classification of buildings and artificial surfaces (BL3) to a mosaic of dry meadows and grassy verges (GS2), gravel (ED2) and stone wall (BL1) on account of the development of grassland habitat. A single relevé was recorded in this habitat area in 2019 (4199_R1). The grassland habitat was dominated by the grass *Agrostis stolonifera*.

Other species recorded included *Circaea lutetiana, Dactylis glomerata, Potentilla anserina, Ranunculus repens, Lapsana communis, Lolium perenne, Plantago major, Poa annua, Rumex crispus, Taraxacum officinale* ag. and *Valeriana officinalis*.

The relevé data confirms that this habitat area does not correspond to the qualifying interest Annex I habitat Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) [*6210/6210]. It also does not correspond with any other Annex I habitat.

The following relevé was recorded in Area 1.g in 2019: 4199_R1.

5.1.1.2 Menlough

The areas discussed below (areas 2.a to 2.j) are shown on **Figure 2.12.3** in **Annex 2** to this Appendix A.3.1 to the RFI Response.

Area 2.a

The relevé (4422_R1) recorded in 2019 confirmed that Area 2.a is oak-ash-hazel woodland (WN2) and the boundary of this habitat area was amended slightly. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevé was recorded in Area 2.a in 2019: 4422_R1.

Area 2.b

The use of more accurate field mapping technology in 2019 has allowed the boundaries between the wet grassland (Area 2.b) and the adjacent area of dry calcareous and neutral grassland (Area 2.c) to be delineated more accurately. This has resulted in area 2.c now lying entirely outside of the overlap area between the proposed development boundary and Lough Corrib cSAC.

The relevés recorded in 2019 confirmed that Area 2.b is wet grassland (GS4), including the part that was added from the adjacent Area 2.c. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 2.b in 2017: RC-LQ R3

The following relevés were recorded in Area 2.b in 2019: 4275_R1, 4275_R2, 4275_R3, 4275_R4, 4275_R5, 3962_R1, 3962_R2, 3962_R3 and 3962_R4.

Area 2.c

As explained above in relation to Area 2.b, no part of the dry calcareous and neutral grassland (GS1) habitat in Area 2.c now lies within the overlap area between the proposed development boundary and Lough Corrib cSAC and it will not be directly affected by the proposed road development.

Area 2.d

The relevé (3941_R1) recorded in 2019 confirmed that Area 2.d is oak-ash-hazel woodland (WN2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 2.d in 2019: 3941_R1.

Retained Habitat Area at Ch.10+000

The relevés recorded in 2019 confirmed that this area of habitat, which is to be retained and will not be directly affected by the proposed road development, includes oak-ash-hazel woodland (WN2), scrub (WS1) and exposed calcareous rock (ER2); all of which correspond with the Annex I habitat Limestone pavement [*8240].

The following relevés were recorded in this area in 2019: 3155_R1, 5507_R1 and 3156_R1.

Area 2.e

Area 2.e has been split into two to reflect the change of habitat classification in this area in 2019.

Area 2.e_1 remains as oak-ash-hazel woodland (WN2), however, in reviewing this habitat area in 2019, the woodland contained sufficient cover of limestone pavement to correspond with Annex I Limestone pavement *8240 habitat. The relevé recorded in this area (3790_R2) supports the change in habitat classification.

The relevé recorded in Area 2.e_2 (3790_R1) confirms that this area of habitat is oak-ash-hazel woodland (WN2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in this area in 2019: 3790_R1 and 3790_R2

Area 2.f

The relevés recorded in 2019 confirmed that Area 2.f, within the overlap area between the proposed development boundary and Lough Corrib cSAC, is dry calcareous and neutral grassland (GS1) but also that the grassland occurs in a mosaic with spoil and bare ground habitat (ED2). As the grassland habitat was more established along the access track as far as the edge of the local road, the boundary of Area 2.f was increased to the north and now extends as far as Bóthar Nua.

The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 2.f in 2019: 4266_R1, 4266_R2, 4266_R3, 4266_R4 and 4266_R5.

Area 2.g

The relevés recorded in 2019 confirmed that Area 2.g is oak-ash-hazel woodland (WN2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 2.g in 2019: 3936_R1 and 3936_R2.

Area 2.h

The relevés recorded in 2019 confirmed that Area 2.h is scrub (WS1). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 2.h in 2019: 3938_R1, 3938_R2 and 3938_R3.

Area 2.i

The 2019 survey confirmed that Area 2.i is a road, is devoid of any vegetation and, therefore, does not correspond with any Annex I habitat type. As there was no vegetation present a relevé was not recorded, as per the criteria set out in **Section 3.2** above. The boundary of Area 2.i was amended slightly in 2019 to account for the establishment of grassland habitat across all of the access track into the field to the south of Bóthar Nua (part of Area 2.i was merged with Area 2.f, see discussion on Area 2.f above).**Area 2.j**

The 2019 survey confirmed that Area 2.j is a road, is devoid of any vegetation and, therefore, does not correspond with any Annex I habitat type. As there was no vegetation present a relevé was not recorded, as per the criteria set out in **Section 3.2** above**.**Coolough and Proposed Lackagh Tunnel

The areas discussed below (areas 3.a to 3.j) are shown on **Figure 2.12.4** and **2.12.5** in **Annex 2** to this Appendix A.3.1 to the RFI Response.

Area 3.a

Area 3.a, a mosaic of oak-ash-hazel woodland (WN2) and scrub (WS1), lies adjacent to but outside of the overlap between the proposed development boundary and Lough Corrib cSAC and, therefore, was not resurveyed in 2019.

Area 3.b

The relevés recorded in 2019 confirmed that Area 3.b is oak-ash-hazel woodland (WN2) but also with an element of scrub (WS1) within the habitat area. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.b in 2019: 3768_R1 and 3768_R2

Area 3.c

The relevés recorded in 2019 confirmed that Area 3.g is a mosaic of oak-ash-hazel woodland (WN2) and scrub (WS1). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.c in 2019: 4541_R1, 4541_R2, 4541_R3, 4541_R4 and 4541_R5.

Area 3.d

Area 3.d, a mosaic of oak-ash-hazel woodland (WN2) and scrub (WS1), lies adjacent to but outside of the overlap between the proposed development boundary and Lough Corrib cSAC and, therefore, was not resurveyed in 2019.

Area 3.e

The relevés recorded in 2019 confirmed that Area 3.e is oak-ash-hazel woodland (WN2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.e in 2019: 4473_R1 and 4473_R2.

Habitat Area between 3.e and 3.i - Ch. 11+050 to Ch. 11+100

A relevé was recorded in this habitat area in 2019 (3340_R1) as it lies within Lough Corrib cSAC and overlaps slightly (c.3m^2) with the proposed development boundary. The relevé recorded in 2019 confirmed that, within the overlap area between the proposed development boundary and Lough Corrib cSAC, this habitat area is oak-ash-hazel woodland (WN2) and does not correspond with the priority Annex I habitat Limestone pavement [*8240].

Consequently, as it does not correspond with Limestone pavement [*8240] this habitat area no longer needs to be retained as part of the mitigation strategy for the proposed road development.

The following relevé was recorded in this habitat area in 2019: 3340_R1.

Area 3.f

Area 3.f, where it overlaps with the proposed development boundary and Lough Corrib cSAC, comprises a mosaic of treeline (WL2), scrub (WS1) and calcareous grassland (GS1). In 2019, two relevés were recorded in the calcareous grassland habitat (4149_R1 and 4149_R3) and one relevé in treeline habitat (4149_R2). The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.f in 2019: 4149_R1, 4149_R2 and 4149_R3.

Area 3.g

The relevés recorded in 2019 confirmed that Area 3.g is oak-ash-hazel woodland (WN2) but also with an element of scrub (WS1) within the habitat area. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.g in 2019: 3754_R1, 3754_R2, 3754_R3 and 3754_R4.

Area 3.h

The relevés recorded in 2019 confirmed that Area 3.h is oak-ash-hazel woodland (WN2) but also with an element of scrub (WS1) within the habitat area. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.h in 2019: 4538_R1 and 4538_R2.

Area 3.i

The relevés recorded in 2019 confirmed that Area 3.i is oak-ash-hazel woodland (WN2) but also with an element of scrub (WS1) within the habitat area. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types. The following relevés were recorded in Area 3.i in 019: 4517_R1, 4517_R2, 4517_R3 and 4517_R4.

Area 3.j

The relevés recorded in 2019 confirmed that Area 3.j is predominantly scrub (WS1) along with some cover of oak-ash-hazel woodland (WN2) where the proposed development boundary overlaps with Lough Corrib cSAC. The relevé data also confirms the statement in the NIS that this habitat area does not correspond with any Annex I habitat types.

The following relevés were recorded in Area 3.i in 2019: 4156_R1, 4156_R2, 4156_R3 and 4156_R4.

Retained Area of QI Annex I Habitat above Lackagh Tunnel Ch.11+270-11+380

The habitat areas being retained above the Lackagh Tunnel comprise a mosaic of exposed limestone rock (ER2), calcareous grassland (GS1), scrub (WS1) and oak-ash-hazel woodland (WN2). With the exception of one area of scrub, all habitat areas above the Lackagh Tunnel that lie within the overlap area between the proposed development boundary and Lough Corrib cSAC correspond with priority Annex I Limestone pavement habitat [*8240]; one of the qualifying interest habitats of Lough Corrib cSAC.

Additional relevés were taken in this area in 2019 in support of the Annex I habitat classifications: 3087_R1, 3087_R2, 3087_R3, 3087_R4, 3087_R5, 3088_R1, 3088_R2, 3088_R3, 3088_R4, 3089_R1, 3130_R1, 3130_R2, 3322_R1, 3322_R2, 3322_R3, 3322_R4, 3322_R5, 3494_R1, 3494_R2, 3494_R3, 3494_R4, 3494_R5, 3513_R1, 3513_R2, 3705_R1 and 3705_R2.

Relevés 4155_R1, 4155_R2 and 4155_R3 were taken in 2019 in support of the non-Annex scrub (WS1) habitat being retained above the Lackagh Tunnel within the overlap area between the proposed development boundary and Lough Corrib cSAC.

5.1.1.3 Proposed Drainage Outfall – N59 Link Road North

The areas discussed below (areas 4.a to 4.d) are shown on **Figure 2.12.2** in **Annex 2** to this Appendix A.3.1 to the RFI Response.

Area 4.a

Area 4.a was classified as a mosaic of treeline (WL2), scrub (WS1) and dry meadows and grassy verges (GS2) in 2014. As a result of the resurvey in 2019 (relevé 3815_R1), this area has been reclassified as riparian woodland (WN5) due to the dominance of *Salix cinerea*, the high percentage of tree canopy cover and expansion of tree/shrub vegetation around the former railway embankment. Other plant species recorded in the relevé were *Hedera helix*, *Athyrium filix-femina*, *Phalaris arundinacea*, *Crataegus monogyna*, *Fraxinus excelsior* and *Filipendula ulmaria*. The relevé data confirms that this habitat area does not correspond with any of the qualifying interest woodland habitats of Lough Corrib cSAC: Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0], as oak are absent; and, Bog woodland [*91D0], as it not established on bog habitat. The relevé data also confirms that the riparian woodland does not correspond to the priority Annex I habitat Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [*91E0].

The boundary of this area has also been extended due to expansion of the tree and shrub cover and, as a result, this habitat area now encompasses all of the overlap area between the proposed development boundary and Lough Corrib cSAC at this location.

Area 4.b

Area 4.b, a mosaic of reed and large sedge swamp/tall-herb swamp/wet grassland (FS1/FS2/GS4) does not overlap with the proposed development boundary and, therefore, was not resurveyed in 2019.

Area 4.c

Area 4.c, a mosaic of reed swamp (FS1) and rich fen and flush (PF1) which corresponds with the Annex I habitat Alkaline fen [7230], does not overlap with the proposed development boundary and, therefore, was not resurveyed in 2019. The habitat classification was supported by a relevé (BEC 226) recorded in this area in 2014.

Area 4.d

As noted above in relation to Area 4.a, the wet grassland habitat that formed part of Area 4.d is not present within the overlap area between the proposed development boundary and Lough Corrib cSAC and, therefore, was not resurveyed in 2019.

5.1.2 Review of the NIS Assessment

The only change to the habitat mapping of relevance to the NIS, in particular Section 9.1.4, arising from the 2019 habitat surveys relates to the habitat area in Menlough (between Ch. 10+050 and 10+100) where an additional area of Limestone pavement [*8240] habitat was identified within the overlap between the proposed development boundary and Lough Corrib cSAC (approximately 205m^2), as shown in **Plates 1** and **2** below. In surveying this habitat area in 2019, the woodland contained sufficient cover of limestone pavement to correspond with priority Annex I Limestone pavement habitat. None of the other habitat changes from 2019 resulted in additional areas of qualifying interest habitat for Lough Corrib cSAC falling within the zone of influence of the proposed road development.

Plate 1: 2018 Habitat mapping and EIAR access road AR 10/01 – Ch. 10+050 to Ch.10+100

Plate 2: 2019 Habitat mapping and EIAR AR 10/01 – Ch. 10+050 to Ch.10+100

The design of the proposed access road AR 10/01 has been amended to avoid direct and indirect impacts on this area of Limestone pavement, as shown in **Plate 3** below. The existing access road at this location will be reutilised and there will be no construction works in this area of Limestone pavement. As a result, this change in habitat classification does not affect the assessment or conclusions presented in the NIS submitted to ABP in October 2018 – i.e. the proposed road development will not result in the loss of any areas of qualifying interest Annex I habitat within Lough Corrib cSAC.

Plate 3: 2019 Habitat mapping and amended access road AR 10/01 – Ch. 10+050 to 10+100

To ensure that this additional area of Limestone pavement habitat is retained and not affected in any way by construction works, in accordance with the mitigation strategy detailed in Section 10.1.1 of the NIS, it will be fenced off in advance of any construction commencing and will be a "no-construction zone" within which no works will take place. The habitat areas to be retained during construction and operation of the proposed road development have been updated to capture this additional area of Limestone pavement habitat and are shown on Figures 2.12.1 – 2.12.5.

Therefore, the conclusion of the NIS submitted to ABP in October 2018, namely that the proposed road development will not result in the loss of any qualifying interest habitat from Lough Corrib cSAC, is confirmed and, accordingly, the proposed road development will not adversely affect the integrity of Lough Corrib cSAC as a result of habitat loss.

In conclusion, despite the amendments to the habitats baseline, the revisions to the design of the proposed road development and the mitigation strategy will ensure that the conclusions of the NIS do not change and "…*the proposed road development does not pose a risk of adversely affecting (either directly or indirectly) the integrity any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion*".

5.2 EIAR

The only change to the significant residual effects already documented in the EIAR, arising as a result of the 2019 habitat survey results, are the addition of an adverse significant residual effect at the international geographic scale for the permanent loss of c.0.01ha (93m^2) of Blanket bog (active) [*7130]. All other adverse significant residual effects on habitats remain as per the EIAR.

The results of the 2019 habitat surveys confirm that the impacts of the proposed road development in terms of habitat loss or degradation remain the same as presented in the EIAR with the exception of (i) one very small area of a new Annex I habitat type affected (a single area of *7130 of 93m^2 in size) and (ii) changes in the areas and precise locations of Annex I habitats to be lost. In summary arising from the 2019 surveys there is:

- No change in the area of two Annex I habitat types to be lost (*3180 and *7220); noting that the single area of *3180 will not be lost, as per the EIAR 2018 findings
- A reduction in the area of three Annex I habitat types to be lost (6210, 6410 and 4030)
- An increase in the area of three Annex I habitat types to be lost (*91E0, *8240 and 4010)
- The addition of a single area (c.0.01ha, 93m^2 in size) of *7130 which will be lost
- The addition of small areas of *6210 within *8240 mosaics above the Lackagh Tunnel which will be retained and will not be lost

The same mitigation and compensatory measures as proposed in the EIAR will be implemented to avoid, minimise and compensate habitat losses within the proposed development boundary, as well as to protect surface water quality and groundwater in the receiving environment, control dust emissions from the construction site, control and prevent the spread of non-native invasive plant species, and ensure that tunnelling and deep excavations do not affect the structural integrity of the surrounding rock mass. There is no need arising from the 2019 habitat survey results to change any of the mitigation or compensatory habitat strategies.

The permanent losses of the following habitats will result in significant residual effects on the habitats listed below in Table 4.1 at geographic scales ranging from local to international. As per the EIAR, the following Annex I habitats will have residual habitat losses:

- Residual alluvial forest habitat *91E0
- Limestone pavement habitat *8240
- Wet heath habitat 4010
- Dry heath habitat 4030
- Calcareous grassland habitat (non-priority) 6120

- *Molinia* meadow habitat 6410

There is one new Annex I habitat that will have a residual habitat loss, namely Blanket bog (active) *7130.

The areas of residual habitat losses differ in some cases compared to these presented in Chapter 8, Biodiversity of the EIAR and these are presented in **Table 4.1** below which is based on Table 8.40 of the EIAR. Compensatory habitat[11] will be provided as noted in **Table 4.1** below to replace the areas of Residual alluvial forest, Dry heath, Calcareous grassland and *Molinia* meadow by providing a greater area to that being permanently lost to the proposed road development.

Table 4.1: Summary of Residual Priority Annex I/Annex I habitat loss after compensation (update of Table 8.40 in Chapter 8, Biodiversity of the EIAR)

Annex I habitat type	Permanent Area of Habitat Loss (EIAR)	Area of Compensatory Habitat Created (EIAR)	Residual Habitat Loss (EIAR)	Residual Impact Significance Post-compensation	Permanent Area of Habitat Loss (2019) (Pre-Compensation)	Permanent Area of Habitat Loss (2019) (Post Compensation)
Petrifying springs [*7220]	One Petrifying spring feature	n/a	One Petrifying spring feature	Likely significant residual effect at the county geographic scale	One Petrifying spring feature	One Petrifying spring feature
Residual alluvial forest [*91E0]	c.0.1ha	c.0.18ha	None	No likely significant residual effect	c.0.14ha	None
Limestone pavement [*8240]	c.0.54ha	n/a	c.0.54ha	Likely significant residual effect at the international geographic scale	c.1.18ha	c.1.18ha
Wet heath [4010]	c.2.06ha	n/a	c.2.06ha	Likely significant residual effect at the national geographic scale	c.2.36ha	c.2.36ha
Dry heath [4030]	c.1.85ha	c.7.06ha	None	No likely significant residual effect	c.1.39ha	None

[11] "Compensation describes measures taken to make up for residual effects resulting in the loss of, or permanent damage to ecological features despite mitigation" (CIEEM, 2016). It is important to note that the reference to "compensatory habitat" areas are not compensatory measures in the context of the requirements of Article 6(4) of the Habitats Directive, as they are not compensating for an impact that would adversely affect the integrity of any European site. Rather, for the reasons set out in detail in the NIS, it is concluded that the proposed road development will not result in such an adverse effect on any European site.

Annex I habitat type	Permanent Area of Habitat Loss (EIAR)	Area of Compensatory Habitat Created (EIAR)	Residual Habitat Loss (EIAR)	Residual Impact Significance Post-compensation	Permanent Area of Habitat Loss (2019) (Pre-Compensation)	Permanent Area of Habitat Loss (2019) (Post Compensation)
Wet heath/Dry heath/*Molinia* mosaic [4010/4030/6410]	c.0.87ha	n/a	c.0.87ha[12]	Likely significant residual effect at the national geographic scale	None	None
Calcareous grassland [6210]	c.0.7ha	c.7.14ha	None	No likely significant residual effect	c.0.15ha	None
Molinia meadow [6410]	c.0.28ha	c.0.49ha	None	No likely significant residual effect	c.0.07ha	None
Blanket bog (active) [*7130]	n/a	n/a	n/a	n/a	c.0.01ha (93m^2)	c.0.01ha (93m^2) Likely significant residual effect at the international geographic scale

However, as was the case in the EIAR it remains the case that some of the Annex I habitat types that are being lost, **outside of European sites**, cannot be directly compensated. Therefore, there will be a significant residual effect at the international geographic scale for the permanent loss of c.1.18ha of Limestone pavement and c 0.01ha (93m^2) of Blanket bog (active) [*7130], at the national geographic scale for the permanent loss of c.2.36ha of Wet heath, at the county geographic scale for the loss of a Petrifying spring feature at Lackagh Quarry.

There are also a number of habitat types of a local biodiversity importance that will be permanently lost as a result of the proposed road development, and where significant residual negative effects are likely:

- Calcareous springs (FP1)
- Dry-humid acid grassland (GS3)
- Poor fen and flush (PF2)
- (Mixed) broadleaved woodland (WD1)
- Hedgerows (WL1)
- Treelines (WL2)

[12] Considered as Wet heath habitat for the purposes of the impact assessment, the loss of which cannot be directly compensated for.

Of these, the planting proposed in the landscape design will compensate for the loss of the areas of (mixed) broadleaved woodland (WD1), hedgerows (WL1) and treelines (WL2) by providing a greater area to that being permanently lost to the proposed road development, as follows:

- (Mixed) broadleaved woodland (WD1) - greater than 2.62ha being lost
- Hedgerows (WL1) - greater than 10.2km being lost
- Treelines (WL2) - greater than 5.4km being lost

In compensating for the losses of these habitat types, the proposed road development is not likely to result in a significant residual effect, at any geographic scale, on (mixed) broadleaved woodland (WD1), hedgerows (WL1) and treelines (WL2).

However, the proposed road development is likely to have a significant residual negative effect, at the local geographic scale, as a result of the permanent loss of fifteen Calcareous spring features (FP1), c.4.51ha of Dry-humid acid grassland (GS3) (reduced from c.7.81ha presented in the EIAR) and c.0.25ha of Poor fen and flush habitat (PF2) (increased from c.0.13ha presented in the EIAR).

While **Section 5.1** above deals with how the 2019 surveys relate to the NIS, it can also be confirmed that any habitat changes outside of the Lough Corrib cSAC will not result in any changes to the conclusions of the NIS. Any change in habitat areas or classification outside of the Lough Corrib cSAC do not introduce any supporting role to habitats within the Lough Corrib cSAC or any other European site.

6 Conclusion

The findings of the 2019 habitat surveys detailed above have no implications for any European sites or the assessment presented in the NIS in relation to Lough Corrib cSAC, Lough Corrib SPA, Galway Bay Complex cSAC or Inner Galway Bay SPA.

Therefore, regardless of the amendments to the habitats baseline, the revisions to the design of the proposed road development in respect of Access Road AR 10/01 and the mitigation strategy will ensure that the conclusions of the NIS submitted to ABP in October 2018, do not change and "…*the proposed road development does not pose a risk of adversely affecting (either directly or indirectly) the integrity any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion*".

The only change to the significant residual effects already documented in the EIAR, arising as a result of the 2019 habitat survey results, are the addition of an adverse significant residual effect at the international geographic scale for the permanent loss of c.0.01ha (93m^2) of Blanket bog (active) [*7130]. All other adverse significant residual effects on habitats remain as per the EIAR.

The results of the 2019 habitat surveys confirm that the impacts of the proposed road development in terms of habitat loss or degradation remain the same as presented in the EIAR with the exception of (i) one very small area of a new Annex I habitat type affected (a single area of *7130 of 93m^2 in size) and (ii) changes in the areas and precise locations of Annex I habitats to be lost.

Annex 1

Habitat survey Results - Species Lists and Relevés

A1

A1.1 Introduction

This annex presents the species lists and references to the associated supporting relevé data for the habitats recorded along, and adjacent to, the proposed road development.

The species lists and relevé references are presented in sections from west to east along the proposed road development with reference to locations that correspond with either:

- Ecological sites[13]
- Habitat areas between the ecological sites, or
- A larger habitat study area that lies between the River Corrib and Lackagh Quarry (including where the proposed road development passes through and adjacent to Lough Corrib cSAC)

Each of these descriptive sections includes a table of the overall species lists for the habitat recorded within that area, with reference to the corresponding relevés that support the habitat classifications. The relevé references are presented in the 'Key Species' column in red font (e.g. EC03 R1).

The relevés referred to in the tables below which describe each of the habitat areas are shown on **Figures 2.4.001 to 2.4.120** in **Annex 2** to this Appendix A.3.1 to the FRI Response.

The information presented in this **Annex 1** does not include species lists for the residential habitat category (see Section 8.3.4.34 of Chapter 8, Biodiversity of the EIAR) and it also does not include species lists for the aquatic habitats, which are described in full in Section 8.3.4 of Chapter 8, Biodiversity of the EIAR and in Appendix A.8.20 (Results of the 2014 N6 Galway City Transport Project Aquatic Habitat Surveys) of the EIAR, and in Appendix K of the NIS.

Plant nomenclature follows that of the National Vegetation Database[14]. The general habitat classifications as set out in *A Guide to Habitats in Ireland*[15] and for Annex I habitats, the *Interpretation manual of European Union Habitats EUR28*[16] was used with reference to the corresponding national and regional habitat survey reports, as applicable (see Section 3 of the main report). Where vegetation community codes are

[13] Ecological Sites are sites of potential ecological value for the habitats present: i.e. determined to be at least of a Local Importance (higher value) (refer to National Roads Authority, 2009 for more detail). The boundaries of the Ecological Sites were initially defined based on interpretation of orthophotography and collation of available existing habitat information, in conjunction with a ground truthing exercise to verify the orthophotography interpretation. These boundaries were then refined, where appropriate, based on the findings of the various habitat surveys undertaken.

[14] Weekes, L.C. & FitzPatrick, Ú. (2010) *The National Vegetation Database: Guidelines and Standards for the Collection and Storage of Vegetation Data in Ireland. Version 1.0.* Irish Wildlife Manuals, No. 49. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

[15] Fossitt, J.A. (2000) *A Guide to Habitats in Ireland.* Heritage Council, Kilkenny.

[16] CEC. (Commission of the European Communities) (2013) *Interpretation manual of European Union Habitats EUR28*. European Commission, DG Environment.

referred to in the sections below, they are also as per the relevant national and regional habitat survey reports.

A1.2 Guide to the Digital Datasets

For ease of reference in locating particular habitat areas, relevés, relevé data and the corresponding habitat photographs, the information presented in this Annex 1 to Appendix A.3.1 to the RFI Response is supplemented by the accompanying digital datasets included in **Annex 3** to Appendix A.3.1 to the RFI Response and listed in **Table A.1** below.

Table A.1: Guide to the digital datasets

Dataset Name	Type	Description
GIS Data Published in 2018		
N6GCRR_2018Habitat Map_Polygon.shp	ESRI Shapefile	Polygon shapefile of the habitat map published in October 2018
N6GCRR_2018HabitatMap_Polyline.shp	ESRI Shapefile	Polyline shapefile of the habitat map published in October 2018
N6GCRR_2018HabitatMap_Point.shp	ESRI Shapefile	Point shapefile of the habitat map published in October 2018
N6GCRR_2018RelevéLocations.shp	ESRI Shapefile	Point shapefile of the relevés recorded between 2013 and 2018
GIS Data from the 2019 Habitat Survey		
N6GCRR_2019HabitatMap_Polygons.shp	ESRI Shapefile	Polygon shapefile of the revised 2019 habitat map within the proposed development boundary.
N6GCRR_2019HabitatMap_Polyline.shp	ESRI Shapefile	Polyline shapefile of the revised 2019 habitat map along the proposed road development.
N6GCRR_ABPFI_HabitatDescriptionAreas .shp	ESRI Shapefile	Polygon shapefile of the habitat areas described in the tables in Annex 1 if the 'Habitat Survey Results 2019' report
N6GCRR_HabitatSurveyAreas_3a.shp	ESRI Shapefile	Polygon shapefile of the areas where the proposed development boundary overlaps with Lough Corrib cSAC.
N6GCRR_RelevéLocations_3a.shp	ESRI Shapefile	Point shapefile of the location of all relevés taken in areas where the proposed development boundary overlaps with Lough Corrib cSAC. Locations are approximate.
N6GCRR_RelevéExtents_3a.shp	ESRI Shapefile	Polygon shapefile of the approximate extent of relevés taken in areas where the proposed development boundary overlaps with Lough Corrib cSAC. Extents are approximate.
N6GCRR_RelevéSampleAreas_3b.shp	ESRI Shapefile	Polygon shapefile of the habitat areas outside of Lough Corrib cSAC where relevés were taken in 2019.
N6GCRR_RelevéLocations_3b.shp	ESRI Shapefile	Point shapefile of the location of all relevés taken within the proposed development boundary outside of Lough Corrib cSAC. Locations are approximate.

Dataset Name	Type	Description
N6GCRR_ABPFI_QIAnnexIHabitats_LoughCorribSAC.shp	ESRI Shapefile	Polygon shapefile of the qualifying interest habitats of Lough Corrib cSAC recorded in relation to the N6GCRRproject between 2014 and 2019.
N6GCRR_AnnexIHabitats_ProposedDevelopmentBoundary.shp	ESRI Shapefile	Polygon shapefile of the Annex I habitats within the proposed road development.
N6GCRR_RetainedHabitatAreas.shp	ESRI Shapefile	Polygon shapefile of the habitat areas being retained within the proposed road development as part of the mitigation strategy for the NIS and Chapter 8 of the EIAR.
Relevé Data		
N6GCRR_RelevéDatabase.xlsx	Microsoft Excel Workbook	The full relevé results for all relevés included in the relevé shapefiles: · N6GCRR_2018RelevéLocations.shp · N6GCRR_RelevéLocations_3a.shp · N6GCRR_RelevéLocations_3b.shp
Photographs – 2019 Habitat Survey		
Photographic record of the 2019 habitat surveys along the N6GCRR	.JPG files	Series of photos recorded during the 2019 habitat surveys along the N6GCRR
N6GCRR_HabitatPhotographs_ReadMe.pdf	PDF	A text document describing the habitat photographs database contained in the N6GCRR_HabitatPhotographs.zip
Other Supporting or Explanatory Documents		
N6GCRR_GISDatasets_Metedata.pdf	Microsoft Word Document	A text document describing the contents of each of the shapefiles that form part of this digital dataset

The reference codes for each habitat area included in the 2019 habitat map GIS dataset (N6GCRR_2019HabitatMap_Polygons.shp) and the reference codes for relevés included in the GIS relevé datasets (N6GCRR_RelevéLocations_3a.shp and N6GCRR_RelevéLocations_3b.shp) can be used to navigate the other digital datasets.

A1.2.1.1 Locating Relevé Data

If a relevé in either the N6GCRR_RelevéLocations_3a.shp or the N6GCRR_RelevéLocations_3b.shp has a "RefNo" of 1234_R1, the corresponding relevé dataset in the N6GCRR_RelevéDatabase.xlsx will have the same code in the "Relevé Ref No" row.

A1.2.2 Locating Photographs

If a given habitat area in the N6GCRR_2019HabitatMap_Polygons.shp has a "FeatureID" of 1234, any photographs available for that particular habitat area can be found in the photographic database and will begin with the same code, followed by a sequential reference number which corresponds with the number of

photographs that were recorded within a given habitat area (e.g. the photo will be labelled 1234_1 and, if there is a second photograph available, 1234_2, and so on).

If a given relevé in either the N6GCRR_RelevéLocations_3a.shp or the N6GCRR_RelevéLocations_3b.shp has a "RefNo" attribute of 1234_R1, any photographs available for that particular relevé can be found in the photographic database and will begin with the same code followed by a sequential reference number preceded by "R" (e.g. the photo will be labelled 1234_R1_1 and, if there is a second photograph available, 1234_R2_2, and so on).

A1.3 Habitats, Species Lists and Relevés Record along the Proposed Road Development

The tables below present the species lists and references to the associated supporting relevé data for the habitats recorded along, and adjacent to, the proposed road development and should be read in conjunction with **Figures 2.4.001** to **2.4.120** in **Annex 2** to Appendix A.3.1 to the RFI Resposne. The species lists and relevé references are presented in sections from west to east along the proposed road development

EC03

EC03 - Species Lists & Relevés		
Habitat code[17]	**Annex I habitat**[18]	**Key species**
CB1	1220	*Elytrigia repens*, *Senecio jacobaea*, *Leontodon autumnalis*, *Lotus corniculatus*, *Rumex crispus* and *Plantago lanceolata*.
CM2	1330	*Agrostis stolonifera*, *Festuca rubra*, *Eleocharis uniglumis*. *Triglochin maritima*, *Leontodon autumnalis*, *Potentilla anserina*, *Lotus corniculatus* and *Cochlearia officinalis*.
FS1	n/a	*Phragmites australis* and *Filipendula ulmaria*.
GA1	n/a	*Lolium perenne*, *Holcus lanatus*, *Trifolium repens*, *Ranunculus repens* and *Rumex* sp.
GS2	n/a	*Arrhenatherum elatius*, *Trifolium pratense*, *Holcus lanatus*, *Centaurea nigra*, *Trifolium repens*, *Agrostis capillaris*, *Poa pratensis*, *Trifolium repens*, *Senecio jacobaea* and *Cynosurus cristatus*.
GS3	n/a	*Anthoxanthum odoratum*, *Agrostis capillaris*, *Potentilla erecta*, *Trifolium repens* and *Poa pratensis*.
GS4	n/a	*Juncus effusus* and *Juncus acutiflorus*.
GM1	n/a	*Iris pseudacorus*, *Filipendula ulmaria*, *Lythrum salicaria*, *Mentha aquatica*, *Anagallis tenella*, *Carex nigra*, *Hydrocotyle vulgaris* and *Senecio aquaticus.*

[17] Fossitt (2000)

[18] Where applicable, vegetation community codes are given in parenthesis.
*8240 (LPE) = exposed limestone pavement; *8240 (LPW) = wooded limestone pavement

EC03 - Species Lists & Relevés		
Habitat code[17]	**Annex I habitat**[18]	**Key species**
HH1	4030 (DH1)	*Ulex gallii*, *Calluna vulgaris*, *Erica cinerea*, *Molinia caerulea*, *Anthoxanthum odoratum*, *Potentilla erecta*, *Succisa pratensis* and *Daboecia cantabrica* EC03 R1
WS1	n/a	*Ulex europaeus*, *Prunus spinosa* and *Rubus fruticosus*.

EC05

EC05 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
FW1/GM1	n/a	*Iris pseudacorus, Apium nodiflorum, Potentilla palustris, Filipendula ulmaria, Lythrum salicaria, Mentha aquatica Salix cinerea,*
GS3	n/a	*Agrostis capillaris, Anthoxanthum odoratum, Cynosurus cristatus, Lolium perenne, Hypochaeris radicata, Achillea millefolium, Trifolium pratense, Veronica officinalis, Prunella vulgaris, Trifolium repens, Rumex obtusifolius, R acetosella, Rhytidiadelphus squarrosus. Sedum anglicum, Dicranum* sp., *Succisa pratensis, Euphrasia* sp., *Hypnum cupressiforme*
GS4	n/a	*Juncus effusus, Juncus articulatus, Holcus lanatus, Agrostis stolonifera, Ranunculus repens, Hydrocotyle vulgaris, Lotus pedunculatus, Cirsium palustre, Lythrum salicaria, Rumex acetosa, Galium palustre, Potentilla erecta, Calliergonella cuspidata, Rhytidiadelphus squarrosus* 360_R1 and 352_R1
GS1	n/a	*Anthoxanthum odoratum, Plantago lanceolata, Poa trivialis, Dactylis glomerata, Festuca rubra agg., Trifolium pratense, Hypochaeris radicata, Prunella vulgaris, Centaurea nigra, Lotus corniculatus, Agrostis capillaris and Leucanthemum vulgare.* 363_R1
HD1	n/a	*Pteridium aquilinum, Salix cinerea, Rubus fruticosus* agg. *Calystegia sepium.*
HH1	4030 (DH1)	*Ulex gallii, Erica cinerea, Daboecia cantabrica, Molinia caerulea, Calluna vulgaris, Agrostis capillaris. Succisa pratensis, Teucrium scorodonia, Hylocomium splendens, Solidago virgaurea* and *Viola* sp. EC05 R1, 2394_R1, 2396_R1, 336_R1, 338_R1 and 361_R2
HH1/HD1	4030	Dry heath and dense bracken species as described in this table. 2391_R1
HH1/WS1	4030	Dry heath and scrub species as described in this table. 2397_R1
PF2	n/a	*Juncus articulatus, Juncus effusus, Hypericum elodes, Hydrocotyle vulgaris, Anagallis tenella, Carex echinata, Carex nigra, Ranunculus flammula* and *Sphagnum* sp. 341_R1
WS1	n/a	*Prunus spinosa, Salix cinerea, Crataegus monogyna, Ulex europaeus, Hedera helix, Pteridium aquilinum.* 361_R1

EC05 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WS1/HD1/ GS3	n/a	*Prunus spinosa, Salix cinerea, Crataegus monogyna, Ulex europaeus, Hedera helix, Pteridium aquilinum, Rubus fruticosus* agg., *Calystegia sepium, Agrostis capillaris, Anthoxanthum odoratum, Cynosurus cristatus, Lolium perenne, Hypochaeris radicata, Achillea millefolium, Trifolium pratense, Veronica officinalis, Prunella vulgaris, Trifolium repens, Rumex obtusifolius, R acetosella, Rhytidiadelphus squarrosus. Sedum anglicum, Dicranum* sp., *Succisa pratensis, Euphrasia* sp., *Hypnum cupressiforme.* Dense bracken tends to shade out much of the grassland species beneath

EC11

EC11 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Poa annua*, *Tussilago farfara*, *Ranunculus repens*, *Papaver rhoeas*, *Persicaria maculosa*, *Atriplex patula*, *Veronica chamaedrys*, *Agrostis stolonifera*, *Sonchus asper*, *Cerastium fontanum*, *Fallopia japonica* and *Fumaria muralis.*
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia*.
FS1	n/a	*Phragmites australis* and *Typha latifolia.*
FS2	n/a	*Apium nodiflorum*, *Sparganium erectum*, *Epilobium hirsutum*, *Juncus articulatus*, *Hydrocotyle vulgaris* and *Glyceria fluitans.*
GA1	n/a	*Rumex obtusifolius*, *Ranunculus repens*, *Senecio jacobaea*, *Persicaria maculosa*, *Urtica dioica* and *Plantago major.*
GS1	n/a	*Centaurea nigra*, *Festuca rubra*, *Linum catharticum*, *Festuca rubra*, *Dactylis glomerata*, *Arrhenatherum elatius*, *Lotus corniculatus*, *Plantago lanceolata*, *Potentilla anserina*, *Leucanthemum vulgare*, *Euphrasia officinalis*, *Holcus lanatus*, *Achillea millefolium* and *Trifolium pratensis.*
GS2	n/a	*Dactylis glomerata*, *Festuca rubra*, *Holcus lanata*, *Arrhenatherum elatius*, *Anthoxanthum odoratum* and *Agrostis stolonifera.*
GS3	n/a	*Anthoxanthum odoratum*, *Agrostis capillaris*, *Nardus stricta*, *Carex disticha*, *Succisa pratensis*, *Ranunculus repens*, *Prunella vulgaris*, *Hypochaeris radicata*, *Potentilla erecta*, *Hylocomium splendens*, *Juncus bulbosus*, *Galium saxatile*, *Danthonia decumbens*, *Plantago lanceolata* and *Rhytidiadelphus squarrosus.* Well-drained areas around rock outcrops also support *Lotus corniculatus*, *Euphrasia officinalis*, *Festuca rubra*, *Succisa pratensis*, *Carex panicea* and *Achillea millefolium.*
GS4	n/a	Species-poor *Juncus effusus* dominated vegetation. Typical species are *Juncus effusus*, *Juncus articulatus*, *Juncus conglomeratus*, *Filipendula ulmaria*, *Holcus lanatus*, *Lythrum salicaria*, *Lotus pedunculatus*, *Rubus fruticosus*, *Arrhenatherum elatius*, *Dryopteris dilatata*, *Dactylis glomerata*, *Anthoxanthum odoratum*, *Agrostis stolonifera* and *Carex echinata*.
GS4	n/a (GL1diii)	Tussocky *Molinia* species-poor type occurring between and grading to heath habitats. Not considered annex habitat but of higher value than species-poor *Juncus effusus* dominated vegetation. Typical species are *Molinia caerulea*, *Ranunculus repens*, *Ranunculus acris*, *Succisa pratensis*, *Potentilla erecta*, *Cirsium vulgare*, *Vicia sepium* and *Anthoxanthum odoratum.* EC11 R12 and 609_R1
	6410	Species include *Molinia caerulea*, *Angelica sylvestris*, *Juncus articulatus*, *Juncus conglomeratus*, *Lythrum salicaria*,

EC11 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
	(GL1c)	*Filipendula ulmaria*, *Carex echinata*, *Carex flacca*, *Potentilla erecta*, *Lotus pedunculatus*, *Centaurea nigra*, *Galium palustre* and *Mentha aquatica*. EC11 R1
GM1	n/a	*Typha latifolia*, *Osmunda regalis*, *Angelica sylvestris*, *Lythrum salicaria*, *Mentha aquatica*, *Hydrocotyle vulgare*, *Potentilla palustris*, *Galium palustre*, *Juncus effusus*, *Agrostis stolonifera* and *Equisetum fluviatile*. 628_R1
HD1	n/a	*Pteridium aquilinum*, with patches of *Rubus fruticosus* agg. *Calystegia sepium*, *Osmunda regalis*, *Epilobium hirsutum* and *Ulex europaeus*. Often grading into scrub.
HH1	4030 (DH1/DH3)	Generally occurs in small patches round rock outcrops within a peatland or grassland mosaic. Typical species are *Ulex gallii*, *Calluna vulgaris*, *Erica cinerea*, *Potentilla erecta*, *Carex binervis*, *Agrostis capillaris*, *Anthoxanthum odoratum*, *Carex demissa*, *Molinia caerulea*, *Agrostis viminalis*, *Nardus stricta*, *Succisa pratensis*, *Campylopus flexuosus*, *Pleurozium schreberi*, *Scleropodium purum* and *Hypnum jutlandicum*. EC11 R4, EC11 R7, EC11 R10, 2403_R1 and 2407_R1
HH1/HD1	4030	Heathland and dense bracken species as described in this table. 614_R1
HH3	4010 (WH4a, Wh4b, WH7)	The habitat is generally found in mosaic with blanket bog and dry heath. Typical species include *Trichophorum germanicum*, *Calluna vulgaris*, *Erica tetralix*, *Molinia caerulea*, *Carex binervis*, *Potentilla erecta*, *Eriophorum angustifolium*, *Sphagnum capillifolium* ssp. *rubellum*, *Sphagnum fallax*, *Hypnum jutlandicum*, *Campylopus atrovirens* and *Cladonia portentosa*. In flushed areas *Myrica gale*, *Molinia caerulea*, *Schoenus nigricans* and *Sphagnum tenellum*. Grasses and sedges are frequent in heavily poached areas. Some encroachment from *Ulex* spp. and *Salix* spp. EC11 R6, EC11 R8, EC11 R9, EC11 R11, 2406_R1 and 620_R1
PB3	*7130 (BB2, BB3)	Typical species include *Molinia caerulea*, *Calluna vulgaris*, *Schoenus nigricans*, *Rhynchospora alba*, *Erica tetralix*, *Carex panicea*, *Eriophorum angustifolium*, *Eriophorum vaginatum*, *Narthecium ossifragum*, *Trichophorum germanicum*, *Sphagnum capillifolium* ssp. *rubellum*, *Sphagnum papillosum*, *Sphagnum tenellum*, *Sphagnum cuspidatum*, *Aulacomnium palustre*, *Drosera rotundifolia*, *Odontoschisma sphagni* and *Potentilla erecta*. Recovering hollows mostly have 100% *Sphagnum* cover with *Eriophorum angustifolium*, some *Eriophorum vaginatum*, *Erica tetralix* and *Calluna vulgaris*. *Rhynchospora alba* is locally abundant. EC11 R3 and EC11 R5
PB3	7150 (HW3)	*Rhynchospora* lawns occur in natural hollows and some of the recovering cutover hollows. The habitat is mostly found in the

EC11 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		northern parts of the site but small patches present throughout. *Rhynchospora alba*, *Menyanthes trifoliata*, *Narthecium ossifragum*, *Molinia caerulea*, *Calluna vulgaris*, *Erica tetralix*, *Sphagnum papillosum*, *Sphagnum magellanicum*, *Sphagnum cuspidatum*, *Sphagnum denticulatum* and *Eriophorum angustifolium.* EC11 R2
PB4	n/a	A high cover of bare peat with occasional *Molinia caerulea*, *Juncus effusus*, *Juncus bulbosus* and *Carex panicea.*
PF2	n/a	Small linear drainage feature within acid grassland. *Juncus effusus*, *Juncus articulatus*, *Sphagnum denticulatum*, *Ranunculus flammula*, *Potamogeton polygonifolius*, *Juncus bulbosus*, *Philonotis fontana*, *Agrostis stolonifera*, *Lythrum salicaria* and *Calliergonella cuspidata*.
WL1	n/a	*Crataegus monogyna*, *Salix cinerea*, *Prunus spinosa*, *Hedera helix*, *Ilex aquifolium*, *Lonicera periclymenum* and *Rubus fruticosus* agg.
WL2	n/a	Variable habitat type. Species typically found include *Pinus contorta*, *Cupressus* sp., *Picea sitchensis*, *Salix cinerea*, *Fraxinus excelsior*, *Acer pseudoplatanus*, *Crataegus monogyna*, *Rubus fruticosus* agg. and *Hedera helix*
WS1	n/a	Mostly taller scrub. Typical species *Ulex europaeus*, *Prunus spinosa*, *Crataegus monogyna* and *Salix cinerea*. Low scrub is dominated by *Rubus fruticosus* agg. Usually where it has encroached upon grassland.

R336 to the Foraí Maola Road (Ch. 0+000 – Ch. 1+150) – Habitats between EC03, EC05 and EC11 as far as the Foraí Maola Road

R336 to the Foraí Maola Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	*Calliergonella cuspidata*, *Geranium robertianum*, *Daucus carota*, *Trifolium repens*, *Crepis capillaris*, *Anagallis arvensis*, *Leontodon autumnalis*, *Epilobium obscurum* and *Epilobium ciliatum*. 2398_R1
ED3	n/a	*Agrostis capillaris*, *Agrostis stolonifera*, *Anagallis tenella*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Bellis perennis*, *Campylopus introflexus* (A/F), *Centaurea erythraea*, *Erica cinerea*, *Hieracium* agg., *Holcus lanatus*, *Leucanthemum vulgare*, *Lotus corniculatus*, *Nardus stricta*, *Potentilla erecta*, *Potentilla reptans*, *Senecio jacobaea*, *Succisa pratensis* and *Ulex gallii*
ED3a	n/a	*Agrostis stolonifera*, *Calluna vulgaris*, *Carex panicea*, *Holcus lanatus*, *Juncus effusus* and *Molinia caerulea*
GA1	n/a	*Agrostis stolonifera*, *Cirsium vulgare*, *Dactylis glomerata*, *Holcus lanatus*, *Lolium perenne*, *Plantago major*, *Poa annua*, *Prunella vulgaris*, *Ranunculus repens*, *Rumex obtusifolius*, *Senecio jacobaea*, *Sonchus asper*, *Taraxacum officinale* agg. and *Trifolium repens*
GM1	n/a	*Angelica sylvestris*, *Cirsium palustre*, *Filipendula ulmaria* (A), *Galium palustre*, *Holcus lanatus*, *Juncus effusus* (*F*), *Lotus pedunculatus*, *Lythrum salicaria* (F), *Mentha aquatica*, *Potentilla anserina*, *Ranunculus acris*, *Scrophularia auriculata* and *Typha latifolia* 2629_R1
GS2	n/a	*Agrostis stolonifera*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Centaurea nigra*, *Cerastium fontanum*, *Festuca rubra*, *Holcus lanatus*, *Leontodon autumnalis*, *Lotus corniculatus*, *Plantago lanceolata*, *Ranunculus acris*, *Ranunculus repens*, *Rumex acetosa* and *Trifolium pratensis*
GS3	n/a	*Achillea millefolium*, *Agrostis* sp., *Lolium* sp., *Ranunculus repens*, *Rumex* spp., *Senecio jacobaea* and *Urtica dioica*
GS4	n/a	*Angelica sylvestris*, *Calystegia sepium*, *Cirsium palustre*, *Festuca rubra/ovina*, *Filipendula ulmaria*, *Holcus lanatus*, *Iris pseudacorus*, *Juncus effusus*, *Lolium perenne*, *Lythrum salicaria*, *Molinia caerulea*, *Plantago lanceolata*, *Plantago major*, *Pteridium aquilinum*, *Ranunculus acris*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex obtusifolius*, *Rumex* spp., *Senecio jacobaea* and *Trifolium pretense* 2634_R1
HD1	n/a	*Pteridium aquilinum* and *Rubus fruticosus* agg.
HH1	4030 (DH1)	*Ulex gallii*, *Erica cinerea*, *Hypnum jutlandicum*, *Agrostis stolonifera*, *Calluna vulgaris*, *Pteridium aquilinum*, *Daboecia cantabrica*, *Hylocomium splendens*, *Holcus lanatus*, *Campylopus introflexus*, *Deschampsia flexuosa*, *Molinia caerulea*, *Rubus fruticosus* agg. *Cladonia* sp. *Danthonia*

R336 to the Foraí Maola Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		decumbens, *Hypnum jutlandicum*, *Scleropodium purum*, *Campylopus flexuosus*, *Carex binervis*, *Hylocomium splendens*, *Juncus squarrosus*, *Nardus stricta*, *Potentilla erecta*, *Racomitrium lanuginosum*, *Sedum anglicum*, *Succisa pratensis* and *Teucrium scorodonia* R336-NFMR R1, R336-NFMR R2 and 2638_R1
WD1	n/a	*Acer pseudoplatanus*, *Alnus cordata*, *Alnus glutinosa*, *Blechnum spicant*, *Corylus avellana*, *Crataegus monogyna*, *Dryopteris felix-mas*, *Fagus sylvatica*, *Fraxinus excelsior*, *Hedera helix*, *Phyllitis scolopendrium*, *Prunus* sp., *Quercus robur*, *Rubus fruticosus* agg., *Salix* sp., *Sorbus aria* and *Urtica dioica*
WD2	n/a	*Acer pseudoplatanus*, *Alnus cordata*, *Alnus glutinosa*, *Betula pubescens*, *Fagus sylvatic*, *Fraxinus excelsior*, *Picea sitchensis*, *Pinus spp.* and *Quercus robur*
WL1	n/a	*Cotoneaster* sp., *Crocosmia x crocosmiiflora*, *Griselinia* sp. and *Lonicera nitida*
WL1a	n/a	*Calystegia sepium*, *Epilobium hirsutum*, *Filipendula ulmaria*, *Geranium robertianum*, *Hedera helix*, *Lonicera periclymenum*, *Phyllitis scolopendrium*, *Prunus spinosa* and *Pteridium aquilinum*
WL2	n/a	*Acer pseudoplatanus*, *Alnus glutinosa*, *Cupressus* sp., *Fagus sylvatica*, *Fraxinus excelsior*, *Pinus contorta*, *Pinus radiata*, *Prunus* sp. and *Sorbus aucuparia*
WS1	n/a	*Acer pseudoplatanus*, *Arrhenatherum elatius*, *Calystegia sepium*, *Dactylis glomerata*, *Epilobium* sp., *Lythrum salicaria*, *Rubus fruticosus* agg. and *Vicia cracca*
WS1/WN6	n/a	*Salix cinerea*, *Rubus fruticosus* agg., *Angelica sylvestris* and *Arrhenatherum elatius*

The Foraí Maola Road to Troscaigh Thiar (Ch. 1+150 – Ch. 1+650) – Habitats between EC12, EC13, EC14 and the Foraí Maola Road

The Foraí Maola Road to Troscaigh Thiar - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BL1	n/a	*Cladonia* spp., *Dicranum scoparium*, *Hedera helix*, *Homalothecium sericeum*, *Hypnum cupressiforme*, *Isothecium myosuroides*, *Mnium hornum*, *Polypodium vulgare* and *Racomitrium aciculare*
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia* 2698_R1
FS2	n/a	*Apium nodiflorum*, *Equisetum fluviatile*, *Glyceria fluitans*, *Iris pseudacorus*, *Mentha aquatica* and *Veronica beccabunga*
FW4	n/a	*Apium nodiflorum (often dominant)*, *Agrostis stolonifera*, *Juncus effusus*, *Arrhenatherum elatius*, *Holcus lanatus*, *Galium palustre*, *Stachys palustris*, *Filipendula ulmaria*, *Lythrum salicaria and Equisetum fluviatile.* 2583_R1
GA1	n/a	*Agrostis stolonifera*, *Lolium perenne*, *Ranunculus repens*, *Rumex obtusifolius* and *Urtica dioica* 2580_R1and 2584_R2
GS1	n/a	*Anthoxanthum odoratum*, *Plantago lanceolata*, *Cynosurus cristatus*, *Phleum pratense*, *Poa trivialis*, *Dactylis glomerata*, *Festuca rubra agg.*, *Trifolium pratense*, *Hypochaeris radicata*, *Prunella vulgaris*, *Centaurea nigra*, *Lotus corniculatus*, *Agrostis capillaris* and *Leucanthemum vulgare.* 2577_R2 and 2584_R1
GS2	n/a	*Agrostis stolonifera*, *Angelica sylvestris*, *Arrhenatherum elatius*, *Calystegia sepium*, *Cirsium palustre*, *Hieracium* agg., *Holcus lanatus*, *Leucanthemum vulgare*, *Plantago lanceolata*, *Potentilla anserina*, *Ranunculus repens*, *Rumex crispus*, *Scrophularia auriculata*, *Sonchus asper* and *Trifolium dubium* 2582_R2 and 2583_R2
GS3	n/a	*Agrostis capillaris*, *Agrostis stolonifera*, *Calliergonella cuspidatum*, *Cerastium fontanum*, *Festuca rubra*, *Holcus lanatus*, *Lotus corniculatus*, *Pilosella officinarum*, *Plantago lanceolata*, *Prunella vulgaris*, *Ranunculus repens*, *Rhytidiadelphus squarrosus*, *Rumex acetosa*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium pratensis*, *Trifolium repens*, *Veronica chamaedrys*, *Veronica serpyllifolia* and *Viola riviniana* 2581_R2, 2582_R1 and 2582_R3
GS4	n/a	*Agrostis stolonifera*, *Anthoxanthum odoratum*, *Centaurea nigra*, *Cirsium palustre*, *Dactylis glomerata*, *Filipendula ulmaria*, *Holcus lanatus*, *Iris pseudacorus*, *Juncus effusus*, *Lythrum salicaria*, *Ranunculus acris*, *Ranunculus repens*, *Rumex* spp. and *Succisa pratensis*

The Foraí Maola Road to Troscaigh Thiar - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		2577_R1, 2581_R1 and 2583_R3
HD1	n/a	*Pteridium aquilinum*
HH1	4030 (DH1)	*Calluna vulgaris*, *Cladonia* sp., *Daboecia cantabrica*, *Danthonia decumbens*, *Deschampsia flexuosa*, *Erica cinerea*, *Hypnum jutlandicum*, *Molinia caerulea*, *Scleropodium purum* and *Ulex gallii* 2700_R1
Residential	n/a	*Fagus sylvatica*, *Acer pseudoplatanus*, *Festuca rubra agg.* and *Geranium robertianum* 2607_R1
WD2	n/a	*Acer pseudoplatanus*, *Betula pubescens*, *Cupressus* sp., *Fraxinus excelsior*, *Pinus* spp., *Prunus* sp. and *Rhododendron ponticum*
WD4	n/a	*Picea sitchensis*, *Cupressus spp. Acer pseudoplatanus*, *Hedera helix*, *Pteridium aquilinum*, *Urtica dioica*, *Kindbergia praelonga*, *Metzgeria furcata*, *Isothecium myosuroides and Hypnum species.* 2575_R1
WL1	n/a	*Crataegus monogyna*, *Cupressus* x *leylandii*, *Hedera helix*, *Prunus spinosa*, *Pteridium aquilinum*, *Rosa rugosa* and *Rubus fruticosus* agg.
WL2	n/a	*Cupressus* sp.
WS1	n/a	*Calystegia sepium*, *Crataegus monogyna*, *Dryopteris felix-mas*, *Fraxinus excelsior*, *Hedera helix*, *Lonicera periclymenum*, *Phyllitis scolopendrium*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Ulex europaeus*, *Umbilicus rupestris*, *Veronica chamaedrys* and *Vicia sepium* 2581_R3 and 2582_R3

EC12

EC12 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GA1	n/a	*Lolium perenne*, *Senecio jacobaea*, *Odontites verna*, *Rumex obtusifolius*, *Cerastium fontanum*, *Agrostis stolonifera*, *Ranunculus repens*, *Prunella vulgaris* and *Plantago lanceolata*
GS3	n/a	*Agrostis capillaris*, *Cynosurus cristatus*, *Achillea millefolium*, *Plantago lanceolata*, *Anthoxanthum odoratum*, *Potentilla erecta*, *Ranunculus repens* and *Leontodon autumnalis* 736_R1, 767_R4, 770_R1, 771_R1, 2419_R1 and 2417_R2
GS4	n/a	*Juncus effusus*, *Lythrum salicaria*, *Agrostis stolonifera*, *Juncus articulatus*, *Holcus lanatus*, *Arrhenatherum elatius*, *Ranunculus repens*, *Stachys palustris*, *Angelica sylvestris*, *Succisa pratensis* and *Filipendula ulmaria*. 735_R2, 740_R1, 764_R1, 767_R3, 769_R2, 770_R2 and 771_R2
GS4/FW4	n/a	Grassland species as described above under GS4. *Anthoxanthum odoratum*, *Holcus lanatus*, *Juncus effusus*, *Arrhenatherum elatius*, *Glyceria fluitans*, *Stachys palustris*, *Filipendula ulmaria*, *Lythrum salicaria*, *Ranunculus repens*, *Galium palustre* and *Equisetum fluviatile* 734_R1
GS4/PF2	n/a	GS4 areas are dominated by such species as *Agrostis stolonifera*, *Juncus effusus*, *Arrhenatherum elatius*, *Potentilla erecta*, *Anthoxanthum odoratum*, *Holcus lanatus*, *Lythrum salicaria* and *Scleropodium purum*, whilst the PF2 areas are more dominated by *Agrostis canina*, *Hydrocotyle vulgaris*, *Juncus acutiflorus*, *Anagallis tenella*, *Viola palustris*, *Festuca rubra agg.*, *Polytrichum commune* and *Hylocomium splendens.* 740_R3
HD1	n/a	*Pteridium aquilinum*, *Rubus fruticosus* 736_R3, 739_R2 and 742_R1
HH1	4030 (DH1)	*Ulex gallii*, *Calluna vulgaris*, *Daboecia cantabrica*, *Erica cinerea*, *Agrostis capillaris*, *Molinia caerulea*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Epilobium hirsutum* and *Ulex europaeus*. EC12 R1, EC12 R3, 734_R3, 739_R1, 764_R2, 2418_R1, 736_R4, 2414_R1, 2417_R1, 767_R2 and 2414_R2
HH3	4010 (WH3)	*Molinia caerulea*, *Calluna vulgaris*, *Narthecium ossifragum*, *Succisa pratensis*, *Potentilla erecta*, *Juncus articulatus*, *Drosera rotundifolia*, *Sphagnum capillifolium*, *S. denticulatum* and *Polygala serpyllifolia*. EC12 R2 and 735_R1
PB3	*7130	*Sphagnum* species such as *S. papillosum, S. cuspidatum and S. capillifolium, as well as Eleocharis multicaulis, Carex panicea, Succisa pratensis, Carex echinata, Molinia caerulea, Narthecium ossifragum, Aulacomnium palustre, Erica tetralix* and *Eriophorum vaginatum.*

EC12 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		743_R1
PF2	n/a	*Agrostis canina, Agrostis stolonifera, Hydrocotyle vulgaris, Juncus acutiflorus, Juncus bulbosus, Carex nigra, Viola palustris, Anagallis tenella, Festuca rubra agg., Polytrichum commune, Hylocomium splendens* and *Sphagnum species, including S. palustre and S. capillifolium.* 736_R2, 734_R2, 767_R1 and 742_R2
WS1	n/a	*Rubus fruticosus* agg., *Ulex europaeus* and *Salix cinerea*. 739_R3, 740_R2, 769_R1 and 771_R3

EC13

EC13 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Ulex europaeus*, *Salix cinerea*, *Rubus fruticosus* agg. *Molinia caerulea*, *Rumex acetosa*, *Succisa pratensis*, *Erica cinerea*, *Centaurea nigra* and *Anthoxanthum odoratum.*
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia*.
FS1	n/a	*Phragmites australis.*
GA1	n/a	*Rumex obtusifolius*, *Ranunculus repens*, *Cirsium arvense*, *Senecio jacobaea*, *Urtica dioica*, *Plantago major*, *Holcus lanatus*, *Dactylis glomerata* and *Poa annua*.
GM1	n/a	*Angelica sylvestris*, *Lythrum salicaria*, *Mentha aquatica*, *Hydrocotyle vulgare*, *Galium palustre*, *Juncus effusus*, *Agrostis stolonifera*, *Potentilla palustris Equisetum fluviatile*, *Plantago lanceolata*, *Succisa pratensis* and *Juncus articulatus.*
GS2	n/a	*Dactylis glomerata*, *Festuca rubra*, *Holcus lanata*, *Arrhenatherum elatius*, *Anthoxanthum odoratum*, *Agrostis stolonifera*, *Rumex crispus* and *Rubus fruticosus* agg.
GS3	n/a	Relatively species-rich dry acid grasslands in mosaic with dry heath. *Anthoxanthum odoratum*, *Agrostis capillaris*, *Agrostis stolonifera*, *Carex panicea*, *Succisa pratensis*, *Euphrasia officinalis*, *Pedicularis sylvatica*, *Hypochaeris radicata*, *Potentilla erecta*, *Hylocomium splendens*, *Centaurea nigra*, *Galium saxatile*, *Festuca rubra*, *Cynosurus cristatus*, *Prunella vulgaris*, *Trifolium pratense*, *Leontodon autumnalis*, *Achillea millefolium*, *Nardus stricta* and *Lotus corniculatus.*
GS4	n/a	Typical soft rush wet agricultural grasslands and patches of higher value (but non-Annex I) *Molinia* grassland. Merges to mosaic with *Molinia* meadow, marsh and poor flush. Species include *Juncus effusus*, *Molinia caerulea*, *Angelica sylvestris*, *Juncus articulatus*, *Holcus lanatus*, *Juncus conglomeratus*, *Lythrum salicaria*, *Filipendula ulmaria*, *Carex echinata*, *Carex flacca*, *Potentilla erecta*, *Galium palustre*, *Mentha aquatica* and *Arrhenatherum elatius.*
	6410 (GL1c)	*Juncus effusus*, *Juncus articulatus*, *Juncus conglomeratus*, *Filipendula ulmaria*, *Holcus lanatus*, *Lythrum salicaria*, *Anthoxanthum odoratum*, *Agrostis stolonifera*, *Carex echinata*, *Potentilla erecta*, *Carex flacca*, *Eriophorum angustifolium*, *Galium palustre*, *Angelica sylvestris*, *Carex panicea* and *Dactylorhiza maculata*. EC13 R1
HD1	n/a	*Pteridium aquilinum*, with patches of *Rubus fruticosus* agg. and *Ulex europaeus*.
HH1	4030 (DH1)	Two variants occur at the site. DH1 variant is found around rock outcrops in the peatland areas. It also generally occurs in isolated patches. Dominated by a combination of *Ulex gallii*

EC13 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		and *Calluna vulgaris. Campylopus introflexus* is common on peat that has been burned in the past. EC13 R5
	4030 (DH3)	The DH3 variant occurs in mosaic with relatively species-rich GS3 grassland. Typical species are *Ulex gallii, Calluna vulgaris, Erica cinerea, Potentilla erecta, Agrostis capillaris, Anthoxanthum odoratum, Carex demissa, Carex panicea, Succisa pratensis, Lotus corniculatus, Hylocomium splendens, Scleropodium purum, Hypnum jutlandicum, Festuca rubra* and *Trifolium pratense.* EC13 R2
HH3	4010 (WH4a, WH3)	Vegetation variable across the site but the shallow peat of the rocky areas mainly supports *Trichophorum* WH4 wet heath while the deeper peats in sections are more typical of WH3. Typical species are *Trichophorum germanicum, Calluna vulgaris, Erica tetralix, Molinia caerulea, Potentilla erecta, Eriophorum angustifolium, Sphagnum capillifolium* ssp. *rubellum, Hypnum jutlandicum, Campylopus atrovirens, Schoenus nigricans, Aulacomnium palustre, Narthecium ossifragum, Sphagnum compactum, Sphagnum subnitens, Cladonia portentosa* and *Sphagnum tenellum. Juncus effusus, Juncus articulatus* and grasses frequent in degraded areas. *Salix repens.* EC13 R3 and EC13 R8
PB3	*7130 (BB2, BB3)	Restricted to small patches in deeper hollows between rock outcrops in an area mostly covered by wet heath. *Molinia caerulea, Calluna vulgaris, Schoenus nigricans, Rhynchospora alba, Erica tetralix, Eriophorum angustifolium, Eriophorum vaginatum, Narthecium ossifragum, Sphagnum capillifolium* ssp. *rubellum, Sphagnum papillosum, Sphagnum magellanicum, Sphagnum cuspidatum, Drosera rotundifolia, Odontoschisma sphagni, Potentilla erecta* and *Eleocharis multicaulis.* EC13 R4 and EC13 R7
PB3	7150 (HW3)	*Rhynchospora* lawns are scattered throughout the wetter parts of the bog, in natural hollow. *Rhynchospora alba, Narthecium ossifragum, Molinia caerulea, Calluna vulgaris, Erica tetralix, Sphagnum papillosum, Sphagnum cuspidatum* and *Eriophorum angustifolium.* EC13 R6
PF2	n/a	*Juncus articulatus, Sphagnum denticulatum, Sphagnum palustre, Ranunculus flammula, Agrostis stolonifera, Lythrum salicaria*.
WS1	n/a	Taller scrub dominated by *Ulex europaeus* or *Prunus spinosa.* The low scrub, dominated by *Rubus fruticosus* agg., has colonized areas of neglected/abandoned land.

EC14

EC14 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Rubus fruticosus* agg. *Ulex europaeus*, *Chamerion angustifolium*, *Persicaria maculosa*, *Lythrum salicaria*, *Pteridium aquilinum* and *Calystegia sepium*.
ER1	n/a	*Anthoxanthum odoratum*, *Holcus lanatus*, *Lolium perenne*, *Trifolium repens*, *Agrostis capillaris*, *Sedum anglicum*, *Rumex acetosella*, *Festuca rubra agg. and Hypnum species.* 825_R1 and 827_R4
HD1	n/a	*Pteridium aquilinum*, *Rubus fruticosus* and *Dactylis glomerata*. 827_R1
GS1	n/a	*Lolium perenna*, *Anthoxanthum odoratum*, *Plantago lanceolata*, *Cynosurus cristatus*, *Phleum pratense*, *Poa trivialis*, *Dactylis glomerata*, *Festuca rubra agg.*, *Trifolium repens*, *Hypochaeris radicata*, *Prunella vulgaris*, *Centaurea nigra*, *Agrostis capillaris and Leucanthemum vulgare.* 825_R2, 825_R3 and 828_R1
GS2	n/a	*Dactylis glomerata*, *Centaurea nigra*, *Lolium perenne*, *Plantago lanceolata*, *Lathyrus pratensis*, *Odontites verna*, *Anthoxanthum odoratum*, *Senecio jacobaea* and *Rumex crispus.*
GS3	n/a	*Agrostis capillaris*, *Nardus stricta*, *Potentilla erecta*, *Succisa pratensis*, *Hylocomium splendens* and *Juncus articulatus.* 827_R3
GS4	n/a	*Lythrum salicaria*, *Juncus articulatus*, *Filipendula ulmaria*, *Agrostis stolonifera*, *Potentilla anserine*, *Holcus lanatus*, *Juncus effusus* and *Cardamine pratensis.* EC14 R5 and 827_R2
HH1	4030 (DH1)	*Ulex gallii*, *Calluna vulgaris*, *Erica cinerea*, *Daboecia cantabrica*, *Molinia caerulea*, *Potentilla erecta* and *Hypnum jutlandicum.* EC14 R1, 2611_R1, 2618_R2, 2622_R1, 2612_R1, 2617_R1 and 2623_R1
HH3	4010 (WH3/WH7)	*Trichophorum germanicum*, *Calluna vulgaris*, *Erica tetralix*, *Ulex gallii*, *Eriophorum angustifolium*, *Molinia caerulea*, *Sphagnum capillifolium*, *Schoenus nigricans* and *Carex binervis.* EC14 R2, EC14 R4, 848_R1, 2615_R1, 875_R1, 2613_R1, 2621_R1, 2614_R1 and 2616_R1
PB3	*7130 (BB1b/BB1a)	*Schoenus nigricans*, *Rhynchospora alba*, *R. fusca*, *Trichophorum germanicum*, *Molina caerulea*, *Calluna vulgaris*, *Drosera rotundifolia*, *Erica tetralix*, *Sphagnum papillosum*, *Sphagnum denticulatum* and *Cladonia portentosa.* EC14 R3
PF2	n/a	There are a couple of small flushes within an area of wet grassland.

EC14 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Menyanthes trifoliata, *Juncus articulatus*, *Potentilla anserine*, *Sphagnum palustre*, *Ranunculus flammula*, *Juncus effusus*, *Succisa pratensis*, *Polytrichum formosum*, *Agrostis stolonifera* and *Persicaria maculosa*.
PF2/HH3	4010	Flush species as described HH3 species include *Molinia caerulea*, *Succisa pratensis*, *Hylocomium splendens*, *Calluna vulgaris*, *Juncus acutiflorus*, *Erica tetralix*, *Erica cinerea* and *Pleurozium schreberi*. 875_R1
WS1	n/a	*Ulex europaeus*, *Rubus fruticosus* agg., *Salix cinerea*, *Betula pubescens*, *Sorbus aucuparia* and *Ilex aquifolium*. 2618_R1 and 861_R1

Ann Gibbons Road (L13215) (Ch. 2+400 – Ch. 2+500) – Habitats between EC14 and EC09

Ann Gibbons Road (L13215) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Plantago major*, *Poa annua*, *Potentilla anserina*
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia*
GA1	n/a	*Agrostis stolonifera*, *Lolium perenne*, *Ranunculus repens*, *Rumex obtusifolius* and *Urtica dioica* 2649_R2
GS3	n/a	*Agrostis capillaris*, *Cynosurus cristatus*, *Holcus lanatus*, *Leontodon autumnalis*, *Plantago lanceolata*, *Potentilla erecta* and *Ranunculus repens*
GS4	n/a	*Agrostis stolonifera*, *Filipendula ulmaria*, *Holcus lanatus*, *Juncus effusus*, *Lythrum salicaria* and *Potentilla anserine* 2648_R3 and 2649_R1
WS1	n/a	*Prunus spinosa*, *Rubus fruticosus* agg. and *Ulex europaeus* 2648_R1 and 2648_R2

EC09

EC09 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia*.
ED2	n/a	*Holcus lanatus, Pteridium aquilinum, Juncus effusus, Ulex europaeus, Epilobium ciliatum, Funaria hygrometrica, Polytrichum commune, Chamerion angustifolium, Pohlia wahlenbergii* and *Conocephalum conicum* 496_R2, 498_R1, 500_R1 and 506_R1
ED3	n/a	*Tussilago farfara, Ulex europaeus, Ulex gallii, Centaurea nigra, Hypochaeris radiata, Daucus carota, Lotus corniculatus, Carex disticha, Hypericum pulchellum, Achillea millefolium, Carex panacea, Potentilla anserina, Juncus effusus, Salix cinerea.* 500_R2 and 501_R2
ER1	n/a	*Anthoxanthum odoratum, Holcus lanatus, Agrostis capillaris, Sedum anglicum, Rumex acetosella, Juncus effusus, Festuca rubra agg.* and *Hypnum species.* 499_R4
FS1	n/a	*Phragmites australis, Agrostis stolonifera, Filipendula ulmaria, Juncus articulatus* and *Potentilla palustris.*
GA1	n/a	*Lolium perenne, Urtica dioica, Dactylis glomerata, Rumex obtusifolius, Ranunculus repens, Agrostis stolonifera, Cirsium arvense, Polygonum aviculare, Epilobium montanum, Plantago lanceolata, Holcus lanatus, Calystegia sepium, Rubus fruticosus* agg., *Persicaria maculosa, Sonchus asper, Brassica napus, Trifolium repens* and *Poa annua.*
GS2	n/a	*Dactylis glomerata, Arrhenatherum elatius, Rumex acetosa, Festuca rubra, Lotus corniculatus, Anthoxanthum odoratum, Agrostis stolonifera, Succisa pratensis, Centaurea nigra* and *Veronica chamaedrys.* Some *Thymus polytrichus* on ant hills only. Recolonized ground has some nutrient enrichment indicators such as *Cirsium arvense* and *Rumex obtusifolius*. 501_R3
GS3	n/a	Typical species are *Agrostis capillaris, Dactylis glomerata, Festuca rubra, Plantago lanceolata, Anthoxanthum odoratum, Nardus stricta, Rumex acetosa, Succisa pratensis, Lotus corniculatus, Ranunculus repens, Leontodon autumnalis, Centaurea nigra, Potentilla erecta* and *Centaurium erythraea.*
	n/a	Highly species-rich variant recorded with abundant *Succisa pratensis*, on infertile ground.
	n/a	Slightly calcareous variant also recorded with *Lotus corniculatus, Prunella vulgaris, Carex disticha* and *Linum catharticum*.

EC09 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS4	n/a	More species poor variant containing species such as *Juncus effusus*, *Holcus lanatus*, *Lythrum salicaria*, *Ranunculus repens*, *Ranunculus acris*, *Filipendula ulmaria*, *Potentilla anserina Agrostis stolonifera*, *Juncus articulatus*, *Galium palustre*, *Lolium perenne*, *Dactylis glomerata*, *Lotus pedunculatus* and *Cirsium palustre*. 496_R1, 498_R3, 499_R1 and 468_R1
	6410 (GL1c)	*Molinia* meadow in mosaic with acid grassland. A high-quality habitat with high species-richness (38 spp per $2m^2$). Typical species include *Cirsium dissectum*, *Rhinanthus minor*, *Ranunculus flammula*, *Prunella vulgaris*, *Carex nigra*, *Carex demissa*, *Pedicularis sylvatica*, *Lophocolea bidentata*, *Riccardia* cf. *multifida* and *Calliergonella cuspidata.* EC09 R1
	6410 (GL1d)	*Molinia* meadow in mosaic with wet heath and has a low species-richness and forb cover. Typical species include *Molinia caerulea*, *Juncus conglomeratus*, *Juncus articulatus*, *Anthoxanthum odoratum*, *Succisa pratensis*, *Carex echinata*, *Carex panacea*, *Potentilla erecta* and *Pleurozium schreberi.* EC09 R4
GM1	n/a	*Lythrum salicaria*, *Mentha aquatica*, *angelica sylvestris*, *Filipendula ulmaria*, *Arrhenatherum elatius*, *Agrostis stolonifera*, *Lathyrus pratensis*, *Stellaria graminea*, *Equisetum fluviatile*, *Hydrocotyle vulgaris*, *Juncus effusus* and *Juncus articulatus.* 501_R1
HD1	n/a	*Pteridium aquilinum* with patches of *Rubus fruticosus* agg. *Epilobium hirsutum*. Often grading into *Ulex europaeus* scrub. 496_R3, 498_R2, 499_R2 and 506_R2
HH1	4030 (DH3, DH1)	*Calluna vulgaris*, *Erica cinerea*, *Cladonia portentosa*, *Carex binervis*, *Potentilla erecta*, *Cladonia uncialis*, *Carex panicea*, *Danthonia decumbens*, *Anthoxanthum odoratum*, *Succisa pratensis*, *Polygala serpyllifolia* and *Molinia caerulea*. Small patches of poor-quality *Ulex gallii* HH1 with *Erica cinerea* and *Rubus fruticosus* agg. in parts. EC09 R2
HH3	4010 (WH3)	*Calluna vulgaris*, *Erica tetralix*, *Molinia caerulea*, *Succisa pratensis*, *Carex echinata*, *Potentilla erecta*, *Juncus effusus*, *Juncus articulates*, *Sphagnum capillifolium* ssp. *rubellum*, *Pleurozium schreberi*, *Eriophorum angustifolium*, *Hylocomium* splendens and *Narthecium ossifragum*. EC09 R3
WL2	n/a	*Fraxinus excelsior*, *Crataegus monogyna*, *Pteridium aquilinum* and *Rubus fruticosus* agg.
WS1	n/a	*Ulex europaeus*, *Prunus spinosa*, *Crataegus monogyna*, *Salix cinerea*, *Rubus fruticosus*, *Pteridium aquilinum*, *Ulex gallii* and *Erica cinerea*. 499_R3, and 500_R3

Ballard West to Ballard East (An Chloch Scoilte Junction, Ch. 3+050 – Ch. 3+450) – Habitats between EC09 and EC18

Ballard West to Ballard East - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	*Daucus carota*, *Trifolium repens*, *Crepis capillaris*, *Anagallis arvensis*, *Leontodon autumnalis*, *Epilobium obscurum* and *Epilobium ciliatum*. 2680_R2
ER1	n/a	The exposed rock is mostly bare. It has few crevices or clefts to harbour significant bryophyte or pteridophyte communities. Where rock outcrops occur in grassland habitats, they are often surrounded by species that prefer good drainage such as *Sedum anglica*, *Pilosella officinarum* and *Veronica serpyllifolia*
FS2	n/a	*Apium nodiflorum*, *Epilobium hirsutum* and *Iris pseudacorus*
GA1	n/a	*Agrostis stolonifera*, *Calystegia sepium*, *Cirsium arvense*, *Galium aparine*, *Holcus lanatus*, *Juncus effusus*, *Lolium perenne*, *Plantago lanceolata*, *Plantago major*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex obtusifolius*, *Taraxacum officinale* agg., *Trifolium repens* and *Urtica dioica* 2680_R1
GM1	n/a	*Carex panicea*, *Hydrocotyle vulgare*, *Hypericum perforatum*, *Juncus articulatus*, *Leontodon autumnalis*, *Lythrum salicaria*, *Mentha aquatica*, *Myosotis scorpioides*, *Potentilla palustris*, *Ranunculus acris* and *Solidago virgaurea*
GS4	n/a	*Agrostis stolonifera*, *Arrhenatherum odoratum*, *Cirsium arvensis*, *Cynosurus cristatus*, *Dactylis glomerata*, *Filipendula ulmaria*, *Geranium robertianum*, *Holcus lanatus*, *Iris pseudacorus*, *Juncus effusus*, *Lolium perenne*, *Lythrum salicaria*, *Plantago lanceolata*, *Poa annua*, *Potentilla anserina*, *Ranunculus acris*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex acetosa*, *Rumex obtusifolius*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Urtica dioica* and *Veronica persica* 2667_R1, 2676_R1 and 2679_R1
GS4/ER1	n/a	Wet grassland and exposed siliceous rock species as described above. 2658_R1
PF2	n/a	*Agrostis canina*, *Agrostis stolonifera*, *Hydrocotyle vulgaris*, *Juncus acutiflorus*, *Juncus bulbosus*, *Carex nigra*, *Viola palustris*, *Anagallis tenella*, *Festuca rubra agg.*, *Polytrichum commune*, *Hylocomium splendens* and *Sphagnum* species, including *S. palustre and S. capillifolium*. 2662_R1
WD1	n/a	*Acer pseudoplatanus*, *Cotoneaster* sp., *Crataegus monogyna*, *Dryopteris felix-mas*, *Fraxinus excelsior*, *Hedera helix*, *Heracleum sphondylium*, *Phyllitis scolopendrium*, *Rubus fruticosus* agg., *Symphoricarpos alba* and *Urtica dioica* 2670_R1

Ballard West to Ballard East - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WS1	n/a	*Prunus spinosa*, *Ulex europaeus*, *Crataegus monogyna*, *Rubus fruticosus* agg. A small area scrub associated with an abandoned residential property has several non-native garden shrubs including *Cotoneaster* sp. and *Symphoricarpos alba*.

EC18

EC18 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	Cleared vegetation with pockets of wet grassland (GS4) and scrub (WS1) remaining. *Arrhenatherum elatius*, *Juncus articulatus*, *Iris pseudacorus*, *Epilobium hirsutum*, *Filipendula ulmaria*, *Rubus fruticosus* agg. and *Ulex europaeus.*
ED3	n/a	*Calliergonella cuspidata, Rhytidiadelphus squarrosus, Poa annua, Dactylis glomerata, Plantago lanceolata, Trifolium repens, Lolium perenne and Senecio jacobaea.* 5899_R1
GS1	n/a	*Anthoxanthum odoratum, Plantago lanceolata, Cynosurus cristatus, Phleum pratense, Poa trivialis, Dactylis glomerata, Festuca rubra agg., Trifolium repens, Cerastium fontanum, Hypochaeris radicata, Prunella vulgaris, Centaurea nigra, Lotus corniculatus, Ranunculus acris, Odontites vernus, Agrostis capillaris* and *Leucanthemum vulgare.* 1106_R1
GS3	n/a	*Agrostis capillaris*, *Anthoxanthum odoratum*, *Dactylis glomerata*, *Holcus lanatus*, *Prunella vulgaris*, *Plantago lanceolata*, *Rumex acetosa*, *Trifolium pratense*, *T. Repens*, *Hypochaeris radicata*, *Centaurea nigra*, *Festuca rubra/ovina* and *Rhytidiadelphus squarrosus*. Other species if near dry heath include *Succisa pratensis*, *Galium saxatile*, *Potentilla erecta* and *Pleurozium schreberi*. 1065_R2 and 2437_R2
GS3a	n/a (UG2a)	*Nardus stricta*, *Agrostis capillaris*, *Anthoxanthum odoratum*, *Cynosurus cristatus*, *Juncus effusus*, *J. articulatus*, *Festuca rubra/ovina*, *Galium saxatile*, *Trifolium repens*, *Rumex acetosa*, *Pedicularis sylvatica*, *Plantago lanceolata*, *Potentilla erecta*, *Prunella vulgaris*, *Rhytidiadelphus squarrosus*, *Hylocomium splendens* and *Pleurozium schreberi*. EC18 R6
GS4	n/a	*Arrhenatherum elatius*, *Molinia caerulea*, *Juncus effusus*, *Filipendula ulmaria*, *Lythrum salicaria*, *Juncus articulatus*, *Mentha aquatica*, *Potentilla erecta*, *Galium palustre*, *Rubus fruticosus* agg., *Cirsium palustre*, *Salix cinerea* and *Betula pubescens.* 1106_R2, 2554_R1, 2437_R1, 2438_R1 and 2440_R1
GS4	6410 (GL1c)	Localised areas of Molinia dominated grasslands on peaty ground and often associated with wet grassland or near heath. *Molinia caerulea*, *Agrostis stolonifera*, *Holcus lanatus*, *Anthoxanthum odoratum*, *Agrostis capillaris*, *Danthonia decumbens*, *Nardus stricta*, *Juncus articulatus*, *Succisa pratensis*, *Luzula multiflora*, *Potentilla erecta*, *Carex panacea*, *Carex echinata*, *Dactylorhiza* sp., *Filipendula ulmaria*, *Mentha aquatic*, *Pleurozium schreberi*, *Rhytidiadelphus squarrosus*, *Sphagnum* sp., *Hylocomium splendens* and *Calliergonella cuspidata.* EC18 R2 and EC18 R5

EC18 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GM1	n/a	*Glyceria fluitans*, *Agrostis stolonifera*, *Equisetum fluviatile*, *Holcus lanatus*, *Filipendula ulmaria*, *Mentha aquatic*, *Apium nodiflorum*, *Lythrum salicaria* and *Iris pseudacorus.* No bryophytes.
HD1	n/a	*Pteridium aquilinum* 1091_R1 and 2566_R1
HD1/WS1	n/a	Dense bracken and scrub species as described in this table. 1131_R1
HH1	4030 (DH1)	*Ulex gallii*, *Calluna vulgaris*, *Erica cinerea*, *Daboecia cantabrica*, *Succisa pratensis*, *Arctostaphylos uva-ursi*, *Agrostis capillaris*, *Hylocomium splendens*, *Solidago virgaurea*, *Potentilla erecta*, *Molinia caerulea* and *Succisa pratensis.* EC18 R3, EC18 R7, 1098_R1, 2433_R1, 2435_R1, 2432_R1, 2431_R1 and 1065_R1
HH1/WS1	n/a	Dry heath and scrub species as described in this table. 2434_R1 and 2436_R1
HH3	4010 (WH3)	*Calluna vulgaris*, *Molinia caerulea*, *Erica tetralix*, *Narthecium ossifragum*, *Juncus articulates*, *Potentilla erecta*, *Succisa pratensis*, *Dactylorhiza* sp., *Carex echinata*, *C. panacea*, *Rhytidiadelphus squarrosus*, *Aulacomnium palustre*, *Hylocomium splendens*, *Sphagnum papillosum*, *Sphagnum capillifolium*, *Thuidium tamariscinum* and *Cladonia portentosa.* Localised areas at south with *Schoenus nigricans*, *Trichophorum germanicum*, *Eleocharis multicaulis* and *Myrica gale* EC18 R1, EC18 R4, EC18 R4, 1131_R2 and 1094_R1
WD1/WN5	n/a	*Alnus glutinosa*, *Fraxinus excelsior*, *Betula pubescens*, *Prunus spinosa*, *Rubus fruticosus* agg., *Hedera helix*, *Ranunculus repens*, *Veronica chamaedrys*, *Phyllitis scolopendrium*, *Solidago virgaurea*, *Plagiomnium undulatum*, *Lophocolea bidentata*, *Fagus sylvatica*, *Quercus robur*, *Sanicula* sp., *Brachypodium sylvaticum*, *Geum urbanum*, *Circaea lutetiana* and *Rhododendron ponticum*.
WS1	n/a	*Prunus spinosa*, *Ulex europaeus*, *Crataegus monogyna*, *Acer pseudoplatanus*, *Sorbus aucuparia*, *Rubus fruticosus* agg. and *Pteridium aquilinum. Salix cinerea* in hollows. 2442_R1, 2440_R2, 1094_R3 and 1094_R2
WS1/GS3	n/a	*Prunus spinosa* (F-A), *Crataegus monogyna*, *Rubus fruticosus* agg. and *Pteridium aquilinum*. Grassland species as described above under GS3.
WS1/GS4/ HH3	4010	Scrub, grassland and heathland species as described above. 2424_R1

Cappagh (Ch. 3+900 – Ch. 4+650) – Habitats between EC18 and EC20

Cappagh - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BL1	n/a	Few epiphytes for the most part. Significant bryophyte communities in some places but few higher plant species. *Brachythecium rutabulum*, *Cladonia* spp., *Dicranum scoparium*, *Frullania dilatata*, *Hedera helix*, *Homalothecium*, *Hypnum cupressiforme*, *Isothecium myosuroides*, *Mnium hornum* and *Racomitrium aciculare*
GA1	n/a	*Agrostis stolonifera*, *Cirsium arvense*, *Cynosurus cristatus*, *Holcus lanatus*, *Lolium perenne*, *Plantago major*, *Ranunculus repens*, *Rumex crispus*, *Rumex obtusifolius*, *Taraxacum officinale* agg., *Trifolium repens* and *Urtica dioica* 2525_R1
GS1	n/a	*Anthoxanthum odoratum*, *Plantago lanceolata*, *Cynosurus cristatus*, *Phleum pratense*, *Poa trivialis*, *Dactylis glomerata*, *Festuca rubra agg Trifolium repens*, *Cerastium fontanum*, *Ranunculus acris*, *Hypochaeris radicata*, *Prunella vulgaris*, *Centaurea nigra*, *Lotus corniculatus*, *Agrostis capillaris* and *Leucanthemum vulgare.* 2513_R2, 2527_R2 and 2542_R1
GS2	n/a	*Arrhenatherum elatius*, *Dactylis glomerata*, *Festuca rubra*, *Holcus lanatus*, *Ranunculus repens* and *Rumex crispus*
GS4	n/a	*Agrostis stolonifera*, *Filipendula ulmaria*, *Holcus lanatus*, *Juncus effusus*, *Lythrum salicaria*, *Potentilla anserina* and *Ranunculus acris* 2511_R1, 2513_R1, 2527_R1, 2533_R1 and 2554_R1
PF2	n/a	*Calliergonella cuspidata*, *Carex echinata*, *Carex panicea*, *Hypericum elodes*, *Juncus articulatus*, *Juncus bulbosus*, *Ranunculus flammula* and *Sphagnum palustre*
WL1	n/a	*Crataegus monogyna*, *Hedera helix*, *Prunus spinosa*, *Rubus fruticosus* agg. and *Urtica dioica*
WL2	n/a	Varying species compositions across the site. *Pinus* sp. and *Alnus cordata* are dominant in some treelines but the majority are composed of *Fraxinus excelsior*, *Alnus glutinosa* and *Acer pseudoplatanus*
WN2	n/a	Canopy species include *Fraxinus excelsior, Corylus avellana* and *Acer pseudoplatanus, scrub species include Crataegus monogyna, Prunus spinosa and Rubus fruticosus agg. Ground layer species include Pteridium aquilinum, Hedera helix, Brachypodium sylvaticum, Geranium robertianum, Eurhynchium striatum, Thamnobryum alopecurum, Hypnum species.* 1208_R1
WS1	n/a	*Crataegus monogyna*, *Prunus spinosa*, *Rubus fruticosus* agg. and *Ulex europaeus* (D)

EC20

EC20 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Senecio jacobaea*, *Tussilago farfara*, *Bellis perennis*, *Ulex europaeus*, *Holcus lanatus*, *Taraxacum officinale*, *Centaurea nigra* and *Rumex obtusifolius*. 5888_R1
ER1	n/a	Although the rock outcrops are generally devoid of vegetation some occasional clumps of *Calluna vulgaris* and *Blechnum spicant* were recorded growing in narrow fissures. 5890_R2
HD1	n/a	*Pteridium aquilinum* overwhelmingly dominant. Few other species apart from *Rubus fruticosus* agg. 1194_R1, 1188_R3 and 5890_R1
HH1	4030 (DH1 & DH3)	*Ulex gallii*, *Calluna vulgaris*, *Erica cinerea*, *Molinia caerulea*, *Potentilla erecta*, *Carex binervis*, *Carex panicea*, *Hypnum jutlandicum* and *Daboecia cantabrica*. 5890_R3, 5073_R1, 1187_R2, 1203_R1 and 1198_R1
HH3	4010 (WH4a)	Confined to shallow peat. Typical/dominant species are *Molinia caerulea*, *Trichophorum germanicum*, *Calluna vulgaris*, *Erica tetralix*, *Sphagnum capillifolium*, *Narthecium ossifragum* and *Racomitrium lanuginosum*. EC20 R1, EC20 R4, EC20 R5, 1188_R1, 1199_R1, 5884_R1 and 5890_R6
FS1	n/a	A small lake completely infilled with dense *Phragmites australis* reed swamp. *Phragmites* cover is generally >75%. Other flora includes *Equisetum fluviatile*, *Cammarum palustre*, *Galium palustre* and *Calystegia sepium*.
FW1	n/a	Very little associated submerged vegetation occurs apart from some sparse *Juncus bulbosus*, *Callitriche stagnalis* and *Glyceria fluitans*.
GA1	n/a	*Dactylis glomerata, Holcus lanatus, Plantago lanceolata, Trifolium pratense, Centaurea nigra, Lolium perenne, Agrostis stolonifera, Ranunculus repens, Alopecurus pratensis* 2984_R1
GS1	n/a	*Anthoxanthum odoratum, Holcus lanatus, Plantago lanceolata, Cynosurus cristatus, Carex flacca, Alopecurus pratensis, Hypnum species, Agrostis canina, Rhytidiadelphus species, Dactylis glomerata, Trifolium pratense, Trifolium repens, Cerastium fontanum, Pteridium aquilinum, Agrostis stolonifera, Ranunculus repens, Alopecurus pratensis* 2451_R1, 2450_R1 and 1182_R1
GS2	n/a	*Holcus lanatus*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Centaurea nigra*, *Trifolium repens*, *Cynosurus cristatus* and *Dactylis glomerata*. 5888_R2
GS3	n/a	In place vegetation grades in GS2 dry meadow. Typical species are *Agrostis capillaris, Anthoxanthum odoratum,*

EC20 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Potentilla erecta, *Succisa pratensis*, *Galium saxatile*, *Lotus corniculatus*, *Plantago lanceolata* and *Rhytidiadelphus squarrosus*.
GS4	n/a	Species-poor *Juncus effusus* dominated grasslands. Typical species are *Juncus effusus*, *Juncus acutiflorus*, *Holcus lanatus*, *Anthoxanthum odoratum*, *Cirsium palustre*, *Agrostis stolonifera*, *Ranunculus repens*, *Ranunculus flammula*, *Trifolium repens*, *Galium palustre* and the wetland moss *Calliergonella cuspidata*. 1176_R1, 1187_R1, 1200_R1, 2448_R1, 2447_R1 and 2447_R2
	6410	*Molinia caerulea* dominated wet grassland type the dominant species generally however in some areas a more open, species-rich wetland vegetation occurs. Associated species include *Juncus acutiflorus*, *Agrostis stolonifera*, *Lythrum salicaria*, *Potentilla erecta* and *Succisa pratensis*. EC20 R3
PB3	7130* (Active blanket bog) (BB2 and BB3)	*Schoenus nigricans*, *Molinia caerulea*, *Erica tetralix*, *Calluna vulgaris*, *Narthecium ossifragum*, *Rhynchospora alba*, *Eriophorum vaginatum*, *Eriophorum angustifolium* and *Trichophorum germanicum*, *Sphagnum papillosum*, *Sphagnum capillifolium*, *Sphagnum cuspidatum* and *Racomitrium lanuginosum*. EC20 R2
PF3	7140 (PFLU5)	*Schoenus nigricans*, *Sphagnum papillosum*, *Molinia caerulea*, *Rhynchospora alba*, *Menyanthes trifoliate*, *Carex limosa*, *Carex rostrata*, *Eleocharis multicaulis*, *Potamogeton polygonifolius* and *Aulacomnium palustris.*
WD1	n/a	*Fraxinus excelsior*, *Fagus sylvatica*, *Acer pseudoplatanus* and *Ilex aquifolium* are the main tree species.
WN2	n/a	*Fraxinus excelsior*, *Hedera helix*, *Geranium robertianum*, *Holcus lanatus*, *Prunella vulgaris*, *Rhytidiadelphus squarrosus*, *Dryopteris filix-mas*, *Pteridium aquilinum*, *Agrostis stolonifera*, *Acer pseudoplatanus*, *Rubus fruticosus agg.*, *Hypnum jutlandicum* 1208_R1
WS1	n/a	*Ulex europaeus* is the dominant species with *Rubus fruticosus*, *Pteridium aquilinum* and *Molinia caerulea* along the margins of scrub. There is also an area of scrub vegetation dominated by *Salix cinerea*. 2446_R1, 1201_R1, 5072_R1, 5890_R4, 5890_R5, 1199_R2, 5890_R7, and 1203_R2

Ballymoneen Road (Ballymoneen Road Junction, Ch. 5+550 – Ch. 5+700) – Habitats between EC20 and EC21

Ballymoneen Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Poa trivialis, Trifolium repens, Cerastium fontanum, Lolium perenne, Potentilla anserina, Ranunculus repens, Rumex crispus, Plantago major, Matricaria discoidea, Poa annua, Taraxacum sp., Stellaria media, Sisymbrium officinale* 2476_R1
GA1	n/a	*Agrostis stolonifera*, *Cirsium arvense*, *Lolium perenne*, *Plantago major*, *Ranunculus repens*, *Rumex obtusifolius*, *Trifolium repens* and *Urtica dioica* 2458_R2 and 2458_R3
GS1	n/a	*Holcus lanatus, Plantago lanceolata, Trifolium repens, Cerastium fontanum, Cynosurus cristatus, Crepis capillaris, Agrostis canina* 2450_R2
GS2	n/a	*Arrhenatherum elatius*, *Dactylis glomerata*, *Festuca rubra*, *Prunella vulgaris* and *Succisa pratensis*
GS4	n/a	*Agrostis stolonifera*, *Holcus lanatus*, *Juncus effusus*, *Lythrum salicaria* and *Ranunculus acris*
HD1	n/a	*Pteridium aquilium*
WL1	n/a	*Crataegus monogyna*, *Hedera helix*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg. and *Urtica dioica*
WL2	n/a	*Cupressus* sp., *Fraxinus excelsior*, *Picea sitchensis* and *Pinus* sp.
WS1	n/a	*Crataegus monogyna*, *Prunus spinosa* and *Ulex europaeus* 2458_R1

EC21

EC21 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ER1	n/a	Although the rock outcrops are generally devoid of some occasional plants of *Sedum anglicum*, *Calluna vulgaris* and *Aira praecox* were recorded growing in small rock cracks. 1300_R1
ED2	n/a	*Rubus fruticosus agg., Holcus lanatus, Cerastium fontanum, Rumex acetosa, Cirsium arvense, Agrostis capillaris, Sagina procumbens* 1303_R2
ED3	n/a	Mineral soil dominates these areas with a sparse, weedy, recolonizing flora which *includes Senecio jacobaea, Holcus lanatus, Ulex europaeus, Cirsium arvense, Plantago major, Centaurea nigra, Rumex crispus* and *Leucanthemum vulgare*. 2970_R1
FW4	n/a	*Juncus effusus, Glyceria fluitans, Apium nodiflorum, Callitriche obtusangula* 2971_R1
HD1	n/a	*Pteridium aquilinum* is overwhelmingly dominant and there are few associated species apart from *Rubus fruticosus* and *Arrhenatherum elatius*.
HH1	4030 (DH1 & DH3)	*Ulex gallii*, *Calluna vulgaris* and *Erica cinerea*, *Potentilla erecta, Carex binervis, Agrostis canina, Hypnum jutlandicum, Scleropodium purum*, *Nardus stricta* and *Daboecia cantabrica*. EC21 R1
HH3	4010 (WH4a)	Areas of wet heath occur on shallow peat. Typical species are *Trichophorum germanicum, Calluna vulgaris, Erica tetralix, Molinia caerulea, Sphagnum capillifolium, Narthecium ossifragum, Eriophorum angustifolium, Potentilla erecta, Succisa pratensis* and *Racomitrium lanuginosum*. EC21 R2 and EC21 R3
GA1	n/a	The dominant plant species tend to be the agricultural grasses *Lolium perenne* and *Holcus lanatus*, *Senecio jacobaea*, *Cirsium arvense*, *Cynosurus cristatus*, *Trifolium repens* and *Taraxacum officinale*. 1300_R2, 1299_R1, 1301_R1, 2480_R1 and 4926_R1
GA2	n/a	*Plantago lanceolata, Festuca rubra, Brachythecium rutabulum, Arrhenatherum elatius, Lolium perenne, Senecio jacobaea, Agrostis capillaris, Taraxacum sp.* 1302_R1
GS2	n/a	*Arrhenatherum elatius* tends to dominate the grassy vegetation with *Centaurea nigra, Dactylis glomerata, Holcus lanatus, Trifolium repens* and *Anthoxanthum odoratum*.
GS3	n/a	Generally species-poor. *Agrostis capillaris, Potentilla erecta, Anthoxanthum odoratum, Holcus lanatus, Cynosurus cristatus* and *Rhytidiadelphus squarrosus*.

EC21 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS4	n/a	*Juncus effusus* species-poor grassland. Typical species are *Juncus effusus*, *Juncus acutiflorus*, *Holcus lanatus*, *Cirsium palustre*, *Ranunculus repens*, *Ranunculus flammula*, *Galium palustre*, *Lythrum salicaria*, *Potentilla erecta* and the wetland moss *Calliergonella cuspidata*. 1299_R2, 1303_R3, 2972_R1, 2969_R1 and 2972_R2
WS1	n/a	*Ulex europaeus* is the dominant species with *Rubus fruticosus*, *Pteridium aquilinum* and *Molinia caerulea* along the margins. 1303_R1 and 1304_R1,

Keeraun Bóithrín to Knocknafroska and the N59 Link Road (Ch. 5+850 – Ch. 7+550 and the N59 Link Road Site) – Habitats between EC21, EC23, EC25 and EC63, and between EC25 and EC29 along the N59 Link Road

Keeraun Bóithrín to Knocknafroska and the N59 Link Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BC4	n/a	*Hedera helix, Ilex aquifolium, Prunus laurocerasus, Epilobium sp., Acer sp., Buddleja sp., Campylopus sp.* 5446_R1
BL1	n/a	*Asplenium trichomanes, Dactylis glomerata, Festuca rubra, Hedera helix* and *Rubus fruticosus* agg.
ED2	n/a	Beginning to recolonise but vegetation cover is considered less than 50%. Species present include early colonisers – *Epilobium* spp., *Fallopia japonica, Matricaria discoidea, Plantago major, Senecio jacobaea, Taraxacum officinale* agg. and *Tussilago farfara* 4753_R1
ED2/ED3	n/a	Spoil and bare ground and recolonising bare ground species as described in this table. 2962_R1 and 2965_R3
ED3	n/a	*Arrhenatherum elatius, Bellis perennis, Centaurea nigra, Dactylis glomerata, Leucanthemum vulgare, Plantago lanceolata, Ranunculus repens, Rubus fruticosus* agg., *Rumex* spp., *Senecio jacobaea, Tussilago farfara* and *Ulex europaeus* 2900_R1, 2950_R1 and 2951_R1
ED3/GS1	n/a	Recolonising bare ground and grassland species as described in this table. 2965_R2
FW4	n/a	*Angelica sylvestris, Potamogeton polygonifolius, Ranunculus flammula* and *Ranunculus repens*
GA1	n/a	*Agrostis stolonifera, Cirsium arvense, Dactylis glomerata, Holcus lanatus., Lolium perenne, Persicaria maculosa, Plantago lanceolata, Poa annua, Polygonum aviculare, Ranunculus repens, Rumex obtusifolius, Trifolium repens* and *Urtica dioica* 4715_R1, 2933_R1, 2931_R1, 2898_R1, 2855_R1, 2821_R1, 2821_R2, 2818_R1, 2762_R2, 2757_R1, 4753_R2, 2832_R2 and 2764_R2
GA1/GS4	n/a	*Agrostis stolonifera, Cirsium* sp., *Cynosurus cristatus, Dactylis glomerata, Juncus effusus, Lolium perenne, Plantago lanceolata, Prunella vulgaris, Ranunculus repens, Rumex obtusifolius, Senecio jacobaea, Trifolium pratense* and *Urtica dioica*
GA2	n/a	*Arrhenatherum elatius, Bellis perennis, Dactylis glomerata, Lolium perenne, Plantago lanceolata, Ranunculus repens* and *Trifolium repens* 5318_R1
GS1	n/a	*Achillea millefolium, Agrostis capillaris, Agrostis stolonifera, Anthoxanthum odoratum, Centaurea nigra, Cynosurus*

Keeraun Bóithrín to Knocknafroska and the N59 Link Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		cristatus, *Holcus lanatus*, *Lotus corniculatus*, *Prunella vulgaris*, *Trifolium pratense* and *Trifolium repens* 5500_R1, 5496_R1, 2965_R1, 2944_R1, 2925_R1, 2869_R3, 2869_R2, 2869_R1, 2868_R1, 2867_R2, 2866_R3, 2866_R2, 2841_R1, 2831_R2, 2808_R1, 2801_R1, 2771_R1 and 2769_R1
GS1/GA1	n/a	Grassland species as described above. 2867_R1
GS2	n/a	*Agrostis stolonifera*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Centaurea nigra*, *Cirsium arvense*, *Dactylis glomerata*, *Festuca rubra*, *Lolium perenne*, *Lotus corniculatus*, *Rumex acetosa*, *Rumex obtusifolius*, *Trifolium pratensis*, *Trifolium repens* and *Veronica chamaedrys* 2952_R2
GS3	n/a	*Anthoxanthum odoratum*, *Holcus lanatus*, *Hypochaeris radicata*, *Arrhenatherum elatius*, *Rhytidiadelphus squarrosus*, *Agrostis capillaris*, *Juncus acutiflorus*, *Ulex europaeus*, *Festuca species*, *Cerastium fontanum*, *Luzula multiflora* 2768_R1, 2785_R1 and 2916_R1
GS4	n/a	*Agrostis stolonifera*, *Centaurea nigra*, *Cirsium palustre*, *Filipendula ulmaria*, *Galium palustre*, *Holcus lanatus*, *Juncus articulatus*, *Juncus effusus*, *Lotus pedunculatus*, *Lythrum salicaria*, *Plantago lanceolata*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus acris*, *Ranunculus repens*, *Rumex obtusifolius* and *Senecio jacobaea* 5501_R1, 2815_R1, 2831_R1, 2866_R4, 2915_R2, 2941_R1, 4754_R1, 2944_R2, 2907_R1, 2841_R2, 2816_R1, 2785_R2, 2769_R2 and 2762_R1
HD1	n/a	*Rubus fruticosus agg.*, *Kindbergia praelonga*, *Holcus lanatus*, *Pteridium aquilinum*, *Brachythecium sp.* 5456_R1
HD1/WS1	n/a	Dense bracken and scrub species as described in this table. 2907_R2, 2912_R1 and 2917_R1
WD1	n/a	*Acer pseudoplatanus*, *Aesculus pseudoplatanus*, *Fagus sylvatica*, *Fraxinus excelsior* and *Hedera helix* 2830_R1
WL1	n/a	Dominated by *Rubus fruticosus* agg. *Hedera helix* also common. *Crataegus monogyna* is present and has matured to form small shrubs/trees along the hedgerow. Occasional *Fraxinus excelsior*.
WL2	n/a	*Acer pseudoplatanus*, *Fraxinus excelsior* and *Populus* spp. 5318_R2
WS1	n/a	*Acer pseudoplatanus*, *Crataegus monogyna*, *Dactylis glomerata*, *Fraxinus excelsior*, *Fuchsia magellanica*, *Hedera helix*, *Prunus spinosa*, *Pteridium aquilinum*, *Rhododendron ponticum*, *Rubus fruticosus* agg., *Salix cinerea*, *Sorbus* sp., *Ulex europaeus* (D and *Urtica dioica*

Keeraun Bóithrín to Knocknafroska and the N59 Link Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		2763_R1, 2837_R1, 4740_R1, 2764_R1, 2832_R1, 2915_R1, 2952_R1, 2956_R1, 4732_R1 and 4751_R1
WS1/GS1	n/a	Scrub and grassland species as described above. 4940_R1
WS1/GA2	n/a	Scrub and grassland species as described above. 4757_R1
WS3	n/a	*Corylus avellana, Hedera helix, Acer pseudoplatanus, Symphoricarpos albus, Rubus fruticosus agg., Prunus laurocerasus, Fuchsia species* 4853_R1

EC23

EC23 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
HD1	n/a	*Pteridium aquilinum*, *Rubus fruticosus* agg.
GM1	n/a	*Juncus effusus*, *Juncus acutiflorus*, *Agrostis stolonifera*, *Epilobium hirsutum*, *Typha latifolia*, *Epilobium palustre*, *Hydrocotyle vulgaris*, *Lotus pedunculatus*, *Filipendula ulmaria* and *Calliergonella* sp.
GS3	n/a	*Agrostis capillaris*, *Anthoxanthum odoratum*, *Cynosurus cristatus*, *Festuca rubra/ovina*, *Hypochaeris radicata*, *Trifolium repens*, *Lotus corniculatus*, *Plantago lanceolata*, *Trifolium repens*, *Rumex acetosa* and *Rhytidiadelphus squarrosus.* EC23 R1
GS4	n/a	*Juncus effusus*, *Ranunculus repens*, *Rumex acetosa*, *Calystegia soldanella*, *Cirsium palustre*, *Filipendula ulmaria*, *Stachys palustris*, *Holcus lanatus*, *Agrostis stolonifera*, *Lotus pedunculatus*, *Lythrum salicaria*, *Calliergonella cuspidata* and *Rhytidiadelphus squarrosus*.
WN2	n/a	*Crataegus monogyna*, *Fraxinus excelsior*, *Hedera helix*, *Rubus fruticosus agg.*, *Rumex obtusifolius*, *Geranium robertianum*, *Poa trivialis*, *Galium aparine*, *Urtica dioica*, *Dryopteris dilatata* 2834_R1

EC63

EC63 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	Variable but includes species such as *Holcus lanatus*, *Fumaria officinalis*, *Trifolium pratensis*, *T. repens*, *Plantago lanceolata* and *Sisymbrium officinale*. 5806_R1
HD1	n/a	*Pteridium aquilinum*, *Rubus fruticosus* agg. and *Chamerion angustifolium*.
GA2	n/a	*Lolium perenne*, *Bellis perennis* and *Trifolium repens*.
GS2	n/a	*Holcus lanatus*, *Plantago lanceolata*, *Trifolium repens*, *Senecio jacobaea*, *Dactylis glomerata*, *Arrhenatherum elatius*, *Cirsium arvensis* and occasional *Leucanthemum vulgare*.
GS4	n/a	*Juncus effusus*, *Filipendula ulmaria*, *Rumex obtusifolius*, *Chamerion angustifolium*, *Arrhenatherum elatius*, *Holcus lanatus* and *Ranunculus repens*.
WL1	n/a	*Cupressus x leylandii*, *Griselinia* sp., *Fuchsia magellanica*, *Fagus sylvatica F. purpurea*., *Crataegus monogyna*, *Hedera helix*, *Ilex aquifolium*, *Fraxinus excelsior*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Viburnum opulus*, *Buddleja davidii*, *Alnus glutinosa*, *Ulex europaeus*, *Betula pubescens*, *Cornus* sp. *Ulex europaeus*, *Alnus incana*, *Salix caprea* and *Calystegia sepium*.
WS1	n/a	*Ulex europaeus*, *Rubus fruticosus* agg., *Urtica dioica* and some *Salix cinerea* on damp ground. 255_R1, 255_R2 and 5806_R2

EC25

EC25 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Hypochaeris radicata*, *Senecio jacobaea*, *Agrostis capillaris*, *Achillea millefolium*, *Trifolium pratensis*, *Centaurium erythraea*, *Anthoxanthum odoratum*, *Trifolium dubium*, *Anagallis arvensis*, *Plantago lanceolata*, *Cirsium arvensis*, *Ulex europaeus*, *Juncus effusus*, *Potentilla anserine*, *Rubus fruticosus*, *Leontodon autumnalis*, *Linum catharticum* and *Hypericum tetrapterum*. 2786_R2
FL1	3160	Two small ponds, both surrounded by reed swamp with adjacent blanket bog and scrub. Typical species are *Phragmites australis*, *Potamogeton polygonifolius*, *Hypericum elodes* and *Menyanthes trifoliata*.
FL4	n/a	*Carex lasiocarpa*, *Hypericum elodes*, *Menyanthes trifoliata*, *Schoenoplectus lacustris* and *Potamogeton polygonifolius*
FS1	n/a	*Phragmites australis*, *Mentha aquatica* and *Myrica gale*.
FW4	n/a	*Holcus lanatus*, *Agrostis stolonifera*, *Galium palustre*, *Juncus effusus*, *Glyceria fluitans*, *Iris pseudacorus* 2809_R1
GA1	n/a	*Lolium perenne*, *Rumex crispus*, *Plantago major*, *Senecio jacobaea*, *Trifolium repens*, *Bellis perennis*, *Cerastium fontanum*, *Cirsium arvensis* and *Achillea millefolium*.
GS1	n/a	*Achillea millefolium*, *Agrostis capillaris*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Brachythecium rutabulum*, *Brachythecium species*, *Carex viridula*, *Centaurea nigra*, *Cynosurus cristatus*, *Euphrasia arctica*, *Festuca rubra*, *Holcus lanatus*, *Hypochaeris radicata*, *Kindbergia praelonga*, *Leontodon autumnalis*, *Lolium perenne*, *Lotus corniculatus*, *Plagiomnium undulatum*, *Plantago lanceolata*, *Poa trivialis*, *Pteridium aquilinum*, *Ranunculus acris*, *Ranunculus repens*, *Rhytidiadelphus squarrosus*, *Rumex obtusifolius*, *Trifolium dubium*, *Trifolium pratense*, *Trifolium repens* 2777_R1, 2786_R1, 2795_R1, 2794_R3, 2795_R2, 1636_R1, 1635_R1, 2776_R2 and 1652_R3
GS1/GS4	n/a	Grassland species as described in this table. 1679_R1
GS1/WS1	n/a	Grassland and scrub species as described in this table. 1633_R1
GS2	6150 (GL3e)	*Arrhenatherum elatius*, *Dactylis glomerata*, *Epilobium hirsutum*, *Galium saxatile*, *Cirsium arvensis*, *Urtica dioica*, *Rumex obtusifolius*, *Euphrasia* spp., *Plantago lanceolata*, *Cynosurus cristatus*, *Prunus vulgaris*, *Lathyrus pratensis*, *Anthoxanthum odoratum*, *Helictotrichon pubescens*, *Ranunculus acris*, *Heracleum sphondylium* and *Pimpinella major*. EC25 R6

EC25 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS3	n/a	*Leontodon autumnalis*, *Succisa pratensis*, *Achillea millefolium*, *Festuca rubra*, *Prunus vulgaris*, *Plantago lanceolata*, *Senecio jacobaea*, *Rumex acetosella*, *Potentilla erecta*, *Euphrasia spp.*, *Trifolium pratensis*, *Agrostis capillaris* and *Anthoxanthum odoratum*, *Holcus lanatus*, *Agrostis canina*, *Pteridium aquilinum*, *Centaurea nigra*, *Lolium perenne*, *Leontodon hispidus*, *Plantago major*, *Hylocomium splendens*, *Dactylis glomerata* and *Solidago virgaurea* EC25 R7, 1634_R2, 5810_R1, 5811_R1 and 1650_R2
GS3/ED2/ED3	n/a	Disturbed area with mosaic of GS3/ED2 (*i.e.* bare soil) and ED3. *Agrostis canina*, *Arrhenatherum elatius*, *Dactylis glomerata*, *Festuca spp.*, *Leontodon autumnalis*, *Odontites vernus*, *Potentilla reptans*, *Prunella vulgaris*, *Pteridium aquilinum*, *Ranunculus repens*, *Rubus fruticosus*, *Rumex obtusifolius*, *Senecio jacobaea*, *Succisa pratensis*, *Tussilago farfara* and *Ulex europaeus*.
GS4	n/a	*Juncus effusus*, *Rumex acetosa*, *Stachys palustris*, *Rumex acetosella*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Rumex crispus*, *Juncus acutiflorus*, *Lythrum salicaria*, *Rubus fruticosus* agg., *Arrhenatherum elatius*, *Rumex obtusifolius* and *Galium palustre*. EC25 R8, 2774_R1, 1642_R1, 1633_R2, 1653_R3, 1679_R2, 1651_R2, 1632_R2 and 2810_R1
HD1	n/a	*Pteridium aquilinum*, *Ulex europaeus*, *Ulex gallii* and *Erica cinerea*. 2786_R3, 1632_R1 and 1632_R3
HH1	4030 (DH1)	*Ulex gallii*, *Daboecia cantabrica*, *Calluna vulgaris*, *Molinia caerulea* and *Cladonia portentosa*.
HH3	4010 (WH1b)	*Molinia caerulea*, *Narthecium ossifragum*, *Succisa pratensis*, *Calluna vulgaris*, *Erica tetralix*, *Drosera rotundifolia*, *Pedicularis sylvatica*, *Potentilla erecta*, *Dactylis maculate*, *Sphagnum capillifolium*, *Carex panicea*, *Agrostis stolonifera* and *Schoenus nigricans*. EC25 R1, EC25 R3, 1655_R1 and 1653_R1
PB3	*7130 (BB1b)	*Molinia caerulea*, *Erica tetralix*, *Narthecium ossifragum*, *Rhynchospora alba*, *Sphagnum papillosum*, *Sphagnum capillifolium*, *Eriophorum angustifolium*, *Potentilla erecta*, *Drosera rotundifolia* and *Sphagnum cuspidatum*. EC25 R2
PB3	7150 (HW3)	*Rhynchospora* hollows are abundant within the extensive area of blanket bog. *Rhynchospora alba*, *Sphagnum papillosum*, *Narthecium ossifragum*, *Drosera rotundifolia*, *Eriophorum angustifolium*, *Sphagnum cuspidatum* and *Erica tetralix.* EC25 R4
PF2	n/a	There are several small flushes throughout the site in association with blanket bog, wet heath, transition mire and wet grassland. *Hypericum elodes*, *Menyanthes trifoliata*, *Ranunculus flammula*, *Potamogeton polygonifolius*, *Sphagnum*

EC25 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		denticulatum, *Molinia caerulea*, *Carex echinata*, *Schoenus nigricans* and *Anagallis arvensis.* 5807_R1, 5808_R1, 2776_R1, 5259_R1, 1653_R2, 5810_R3, 1655_R2 and 1650_R1
PF3	7140 (PFLU5)	*Phragmites australis*, *Schoenus nigricans*, *Menyanthes trifoliata*, *Narthecium ossifragum*, *Equisetum hyemale*, *Myrica gale*, *Hypericum elodes*, *Potamogeton polygonifolius*, *Eriophorum angustifolium*, *Potentilla palustris*, *Erica tetralix*, *Sphagnum palustre*, *Carex rostrata*, *Campylium stellatum* and *Vaccinium oxycoccos.* EC25 R5
WS1	n/a	*Ulex europaeus*, *Crataegus monogyna*, *Prunus spinosa*, *Rubus fruticosus* agg., *Pteridium aquilinum*, *Urtica dioica* and *Salix cinerea*. 1655_R3, 1652_R1, 1651_R1, 1650_R3, 1652_R2, 1659_R1, 1657_R1, 1642_R2, 1634_R1, 5810_R2 and 2794_R2

Upper Dangan/NUIG (Ch. 8+150 – Ch. 9+300) – Habitats between EC25 and the west bank of River Corrib (excluding EC30)

Upper Dangan/NUIG - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BL1	n/a	*Crataegus monogyna*, *Fraxinus excelsior*, *Hedera helix* and *Rubus fruticosus* agg.
ED2	n/a	*Bellis perennis*, *Lolium perenne* and *Taraxacum officinale* agg.
ED3	n/a	*Trifolium repens*, *Lolium perenne*, *Galium aparine*, *Agrostis stolonifera*, *Urtica dioica*, *Stachys sylvatica*, *Bryum species*, *Arctium minus*, *Geranium lucidum*, *Persicaria lapathifolia* 5088_R3
ED3/WS1	n/a	Recolonising bare ground and scrub species as described in this table. 3003_b_R1
GA1	n/a	*Agrostis stolonifera*, *Bellis perennis*, *Cirsium* sp., *Holcus lanatus*, *Lathyrus pratensis*, *Lolium perenne*, *Plantago major*, *Ranunculus repens*, *Rumex crispus*, *Rumex obtusifolius*, *Senecio jacobaea*, *Taraxacum officinale* agg. and *Urtica dioica* 2992_R2 and 2986_R2
GA2	n/a	*Bellis perennis*, *Cirsium arvense*, *Festuca rubra*, *Holcus lanatus*, *Lolium perenne*, *Lolium* spp., *Plantago lanceolata*, *Plantago major*, *Ranunculus repens*, *Rumex obtusifolius*, *Senecio vulgaris*, *Taraxacum officinale* agg., *Trifolium repens* and *Vicia cracca* 3031_R1, 4299_R1, 4299_R2, 5510_R1 and 5880_R1
GS1	n/a	A more species poor variant of calcareous/neutral grassland supported the following species: *Centaurea nigra*, *Dactylis glomerata*, *Leontodon hispidus*, *Lolium perenne*, *Prunella vulgaris*, *Ranunculus repens*, *Rumex* spp., *Senecio jacobaea* and *Urtica dioica* 2994_R3, 2995_R1, 2992_R1, 2986_R1, 2996_R1, 4302_R1, 5088_R1, 5880_R4, 5880_R3 and 5880_R2
	n/a	Species-rich variant of calcareous grassland which did not meet criteria for EU Annex I habitat. Species recorded include *Anthoxanthum odoratum*, *Calliergonella cuspidata*, *Holcus lanatus*, *Briza media*, *Festuca ovina*, *Linum catharticum*, *Trifolium pratense*, *Homalothecium lutescens*, *Lathyrus pratensis*, *Lolium perenne*, *Prunella vulgaris*, *Ranunculus repens*, *Carex flacca*, *Cerastium fontanum*, *Euphrasia* spp., *Plantago lanceolata*, *Ranunculus acris*, *Agrostis stolonifera*, *Alchemilla mollis*, *Carex panacea*, *Centaurea nigra*, *Cirsium arvense*, *Cynosurus cristatus*, *Dactylis glomerata*, *Festuca* spp., *Leontodon autumnalis*, *Leontodon hispidus*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Rumex crispus*, *Taraxacum officinale agg.* and *Trifolium repens* UD-NUIG R1
GS2	n/a	*Arrhenatherum elatius*, *Calystegia sepium*, *Centaurea nigra*, *Cirsium arvense*, *Crataegus monogyna*, *Cynosurus cristatus*, *Dactylis glomerata*, *Heracleum sphondylium*, *Holcus lanatus*,

Upper Dangan/NUIG - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Lathyrus pratensis, *Plantago lanceolata*, *Prunella vulgaris*, *Prunus spinosa*, *Pteridium aquilinum*, *Ranunculus acris*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex crispus*, *Rumex obtusifolius*, *Rumex* spp., *Salix cinerea*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium pratense* and *Urtica dioica* 3003_R2, 4198_R1, 4198_R2, 4198_R3 and 3005_R1
GS4	n/a	Species-poor *Juncus effusus* wet grassland with *Agrostis stolonifera*, *Cirsium palustre*, *Galium palustre*, *Holcus lanatus*, *Potentilla anserina*, *Ranunculus acris* and *Ranunculus repens*
GS4	n/a	A more species rich wet grassland variant included *Agrostis stolonifera*, *Arrhenatherum elatius*, *Centaurea nigra*, *Cirsium arvense*, *Cynosurus cristatus*, *Dactylis glomerata*, *Epilobium montanum*, *Festuca rubra*, *Filipendula ulmaria*, *Holcus lanatus*, *Iris pseudacorus*, *Juncus articulatus*, *Juncus effusus*, *Lolium perenne*, *Lythrum salicaria*, *Phragmites australis*, *Plantago lanceolata*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus repens*, *Rhinanthus minor*, *Rubus fruticosus* agg., *Rumex acetosa*, *Rumex* spp., *Succisa pratensis*, *Taraxacum officinale* agg., *Trifolium pratense*, *Urtica dioica* and *Vicia cracca.*
HD1	n/a	*Rubus fruticosus agg.*, *Kindbergia praelonga*, *Pteridium aquilinum* 2994_R2
HD1/WS1	n/a	Dense bracken and scrub species as described in this table. 3003_R3
WD1	n/a	*Acer pseudoplatanus*, *Aesculus hippocastanum*, *Anthriscus sylvestris*, *Arrhenatherum elatius*, *Brachypodium sylvaticum.*, *Crataegus monogyna*, *Fagus sylvatica*, *Fraxinus excelsior*, *Geranium robertianum*, *Geum urbanum*, *Hedera helix*, *Heracleum sphondylium*, *Pinus* spp., *Rubus fruticosus* agg., *Salix cinerea*, *Tilia cordata*, *Torilis japonica*, *Ulmus glabra* and *Vicia sepium* 3382_R1, 4304_R1, 4308_R1, 4547_R1, 4550_R1, 4551_R1, 4555_R1, 5556_R1, 5577_R1 and 5776_R1
WL1	n/a	*Acer pseudoplatanus*, *Crataegus monogyna*, *Cupressus x leylandii*, *Epilobium ciliatum*, *Escallonia* spp., *Fagus purpurea*, *Fagus sylvatica*, *Fraxinus excelsior*, *Fuchsia magellanica*, *Geranium robertianum*, *Griselinia* sp., *Hedera helix*, *Ilex aquifolium*, *Plantago lanceolata*, *Prunus laurocerasus*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Rumex obtusifolius*, *Ulmus glabra*, *Urtica dioica* and *Vicia* sp.
WL2	n/a	*Acer pseudoplatanus*, *Aesculus hippocastanum*, *Alnus glutinosa*, *Betula* sp., *Cornus* sp., *Crataegus monogyna*, *Cupressus x Leylandii*, *Fagus sylvatica*, *Fallopia japonica*, *Fraxinus excelsior*, *Hedera helix*, *Prunus lusitanica*, *Prunus spinosa*, *Rubus fruticosus* agg., *Salix caprea*, *Salix cinerea*,

Upper Dangan/NUIG - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Sorbus sp., *Symphoricarpos albus*, *Tilia cordata* and *Urtica dioica*
WN2	n/a	*Hedera helix*, *Fraxinus excelsior*, *Rubus fruticosus* agg. *Acer pseudoplatanus*, *Crataegus monogyna*, *Ilex aquifolium*, *Phyllitis scolopendrium* and *Thuidium* sp. UD-NUIG R3, 4309_R1 and 5579_R1
WN5/WS1	n/a	Scrub species as described in this table. *Fraxinus excelsior*, *Salix cinerea s. oleifolia*, *Hedera helix*, *Phalaris arundinacea*, *Athyrium filix-femina* 3815_R1
WS1	n/a	*Betula pubescens*, *Crataegus monogyna*, *Dactylis glomerata*, *Epilobium hirsutum*, *Fraxinus excelsior*, *Galium aparine*, *Hedera helix*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Salix cinerea*, *Salix cinerea* subsp. *oleifolia*, *Ulex europaeus* and *Urtica dioica* 5506_R1, 4077_R1, 4078_R1, 2988_R1, 2994_R1, 2995_R2, 5088_R2 and 3005_R2
WS1/GS2	n/a	Scrub and grassland species as described in this table. 4733_R1
WN6	*91E0	*Ranunculus repens*, *Hedera helix*, *Salix cinerea*, *Scrophularia auriculata*, *Alnus glutinosa*, *Urtica dioica*, *Crataegus monogyna*, *Filipendula ulmaria*, *Circaea lutetiana*, *Geranium robertianum*, *Heracleum sphondylium*, *Phyllitis scolopendrium*, *Taraxacum officinale* agg. and *Holcus lanatus* UD-NUIG R5 and 3381_R1

EC29

EC29 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
FS1	n/a	Species-poor, tall reed swamp vegetation dominates wide, wet drains which occur intermittently on both sides of the railway embankment. *Phragmites australis*, *Epilobium hirsutum*, *Urtica dioica*, *Menyanthes trifoliata* and *Equisetum fluviatile*.
GA1	n/a	*Holcus lanatus*, *Ranunculus repens*, *Lolium perenne*, *Cynosurus cristatus*, *Bellis perennis* and *Plantago lanceolata*.
GS1	6210 (GL1b)	Relatively species-rich calcareous grassland is frequent on shallow soil which overlies the limestone of the old railway embankment. Parts correspond to annex habitat, while other areas do not meet criteria. Typical species are *Centaurea nigra*, *Trifolium pratense*, *Festuca rubra*, *Plantago lanceolata*, *Lotus corniculatus*, *Briza media*, *Anthoxanthum odoratum*, *Leontodon hispidus*, *Rhinanthus minor*, *Linum catharticum*, *Vicia cracca* and *Prunella vulgaris*. EC29 R1
GS2	n/a	*Arrhenatherum elatius*, *Dactylis glomerata*, *Holcus lanatus*, *Agrostis capillaris*, *Trifolium repens*, *Ranunculus repens*, *Trifolium pratense* and *Anthoxanthum odoratum*.
GS4	n/a	*Anthoxanthum odoratum*, *Holcus lanatus*, *Centaurea nigra*, *Filipendula ulmaria*, *Juncus effusus*, *Juncus inflexus* 1720_R1
GS4/GM1	n/a	*Juncus effusus*, *Iris pseudacorus*, *Holcus lanatus*, *Lythrum salicaria*, *Cirsium palustre*, *Ranunculus acris*, *Juncus articulatus*, *Agrostis stolonifera* and *Filipendula ulmaria*.
PF1	7230	*Succisa pratensis*, *Juncus acutiflorus*, *Potentilla erecta*, *Prunus vulgaris*, *Anagallis tenella*, *Equisetum* sp., *Anthoxanthum odoratum*, *Cirsium palustre*, *Carex panicea*, *Call cusp*, *Lythrum salicaria*, *Mentha aquatica*, *Schoenus nigricans* and *Hydrocotyle vulgaris*.

EC30

EC30 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WD1	n/a	*Fraxinus excelsior*, *Acer pseudoplatanus*, *Alnus cordata* and *Populus* sp, *Hedera helix*, *Urtica dioica*, *Rubus fruticosus*, *Galium aparine*, *Dactylis glomerata*, *Ranunculus repens*, *Cirsium vulgare* and *Geranium robertianum.* 3035_R1, 3029_R1 and 3028_R1
WN2	n/a	*Fraxinus excelsior*, *Salix cinerea*, *Salix caprea*, *Rubus fruticosus*, *Fagus sylvatica*, *Hedera helix*, *Urtica dioica*, *Acer pseudoplatanus*, *Calystegia sepium*, *Fallopia japonica*, *Crataegus monogyna*, *Betula pubescens*, *Geranium robertianum*, *Arum maculatum*, *Polystichum setiferum*, *Thuidium tamariscinum* and *Eurhynchium spp.* 5581_R1

EC31

EC31 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS1	6210* (GL3a)	Species-rich calcareous grassland occurs in mosaic with lowland hay meadow. Orchids are abundant in places. *Briza media*, *Dactylorhiza fuchsii*, *Lotus corniculatus*, *Anthyllis vulneraria*, *Blackstonia perfoliata*, *Carex flacca*, *Linum catharticum*, *Listera ovata* and *Pilosella officinarum*. EC31 R2
GS2	n/a	Species-poor meadow and verge. Typical species include *Dactylis glomerata*, *Helictotrichon pubescens*, *Centaurea nigra*, *Trifolium repens*, *Rumex crispus*, *Cirsium arvensis* and *Plantago lanceolata*.
	6510 (GL3e)	Occurs on the site in mosaic with calcareous grassland (6210). *Plantago lanceolata*, *Trifolium pratense*, *Heracleum sphondylium*, *Helictotrichon pubescens*, *Lathyrus pratensis*, *Holcus lanatus*, *Centaurea nigra*, *Anthoxanthum odoratum*, *Dactylis glomerata* and *Agrostis capillaris*, *Dactylorhiza fuchsia* and *Dactylorhiza incarnata.* EC31 R1
GS4	n/a	*Filipendula ulmaria*, *Urtica dioica*, *Juncus effusus*, *Iris pseudacorus*, *Convolvulus arvensis*, *Galium aparine*, *Festuca arundinacea*, *Juncus conglomeratus*, *Epilobium hirsutum* and *Valeriana officinalis.*
WD1	n/a	*Fagus sylvatica*, *Fraxinus excelsior*, *Hedera helix*, *Rubus fruticosus*, *Ilex aquifolium*, *Primula vulgaris*, *Acer pseudoplatanus* and *Conopodium majus.*
WN2	n/a	*Fraxinus excelsior*, *Acer pseudoplatanus*, *Hedera helix*, *Crataegus monogyna*, *Circaea lutetiana*, *Geranium robertianum*, *Rubus fruticosus* agg. *Urtica dioica*, *Geum urbanum*, *Rumex sanguineus* and *Ranunculus ficaria*.
WN6	*91EO	Typical species include *Alnus glutinosa*, *Salix cinerea*, *Crataegus monogyna*, *Listera ovata*, *Holcus mollis*, *Carex remota* and *Agrostis stolonifera*. EC31 R3
WS1	n/a	Scrub composition varies but dominant species include *Crataegus monogyna*, *Prunus spinosa* and *Rubus fruticosus* agg.

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) (Ch. 9+400 – Ch. 11+400) – Habitats between the River Corrib and Lackagh Quarry

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BL1	n/a	*Crataegus monogyna*, *Fraxinus excelsior*, *Hedera helix*, *Prunus spinosa* and *Rubus fruticosus* agg.
ED2	n/a	*Lolium perenne* and *Potentilla anserina*
ED3	n/a	*Agrostis stolonifera*, *Lolium perenne*, *Plantago major*, *Potentilla anserina*, *Ranunculus repens*, *Rumex* spp., *Senecio jacobaea*, *Stellaria media*, *Trifolium pratense* and *Veronica persica*
ER2	*8240 LPE	The most frequently recorded species across these 39 relevés were: *Anthoxanthum odoratum*, *Asperula cynanchica*, *Asplenium ruta-muraria*, *Brachythecium rutabulum*, *Briza media*, *Bryum capillare*, *Calliergonella cuspidata*, *Carex flacca*, *Carlina vulgaris*, *Centaurea nigra*, *Ceterach officinarum*, *Corylus avellana*, *Crataegus monogyna*, *Ctenidium molluscum*, *Dicranum scoparium*, *Encalypta streptocarpa*, *Epilobium montanum*, *Epilobium parviflorum*, *Euphrasia salisburgensis*, *Festuca ovina*, *Festuca rubra*, *Fissidens dubius*, *Fragaria vesca*, *Fraxinus excelsior*, *Galium verum*, *Geranium robertianum*, *Grimmia pulvinata*, *Hedera helix*, *Homalothecium lutescens*, *Homalothecium sericeum*, *Hypericum pulchrum*, *Hypochaeris radicata*, *Ilex aquifolium*, *Koeleria macrantha*, *Lapsana communis*, *Leontodon hispidus*, *Leucanthemum vulgare*, *Linum catharticum*, *Lotus corniculatus*, *Mycelis muralis*, *Neckera complanata*, *Neckera crispa*, *Phyllitis scolopendrium*, *Pilosella officinarum*, *Plantago lanceolata*, *Plantago maritima*, *Polygala vulgaris*, *Potentilla erecta*, *Prunus spinosa*, *Ranunculus acris*, *Rosa spinosissima*, *Rubus fruticosus* agg., *Rubus idaeus*, *Scleropodium purum*, *Senecio jacobaea*, *Sesleria caerulea*, *Solidago virgaurea*, *Sonchus asper*, *Sorbus aria*, *Succisa pratensis*, *Taraxacum officinale* agg., *Teucrium scorodonia*, *Thymus polytrichus*, *Tortella nitida*, *Tortella tortuosa*, *Trifolium pratense* and *Veronica chamaedrys*. Relevés BEC 115, BEC 118, BEC 343 and BEC 345, 3087_R1, 3087_R2, 3087_R3, 3087_R4, 3087_R5, 3130_R1, 3130_R2, 3169_R1, 3618_R2, 3089_R1, 3494_R3, 3494_R4, 3494_R5 and 3322_R3
ER2/WS1	*8240	Exposed calcareous rock and scrub species as described in this table. 3618_R1
FL6	*3180 *Potentilla anserina-Carex nigra* vegetation community	Typical FL6/ GM1 vegetation with *Agrostis stolonifera*, *Apium inundatum*, *Caltha palustris*, *Cinclidotus fontinaloides*, *Eleocharis palustris*, *Equisetum palustre*, *Filipendula ulmaria*, *Glyceria fluitans*, *Mentha aquatica*, *Myosotis aquatica* , *Persicaria amphibia*, *Persicaria maculata*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus*

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
	(Waldren, 2015, Ed.).	*repens*, *Rumex crispus*, *Rumex obtusifolius*, *Senecio aquaticus*, *Urtica dioica* and *Veronica catenata*
FS2	6430	*Epilobium palustre*, *Epilobium hirsutum*, *Galium palustre*, *Valeriana dioica*, *Menyanthes trifoliata*, *Phragmites australis*, *Calliergonella cuspidata*, *Equisetum fluviatile*, *Carex rostrata*, *Ranunculus acris*, *Prunus spinosa*, *Iris pseudacorus*, *Holcus lanatus* and *Agrostis stolonifera*. EC36 R4
FW4	n/a	*Calliergonella cuspidata*, *Kindbergia praelonga*, *Filipendula ulmaria*, *Glyceria fluitans*, *Salix caprea*, *Salix cinerea s. oleifolia* and *Fontinalis antipyretica* 4267_R1
GA1	n/a	*Agrostis stolonifera*, *Arrhenatherum elatius*, *Centaurea nigra*, *Cirsium arvense*, *Crepis* sp., *Cynosurus cristatus*, *Dactylis glomerata*, *Holcus lanatus*, *Lolium perenne*, *Odontites vernus*, *Plantago lanceolata*, *Plantago major*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus acris*, *Ranunculus repens*, *Rumex obtusifolius*, *Rumex* spp., *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium pratense*, *Trifolium repens* and *Veronica* sp.
GA2	n/a	*Bellis perennis*, *Festuca rubra*, *Holcus lanatus*, *Lolium perenne*, *Plantago lanceolata*, *Rumex acetosa*, *Rumex obtusifolius*, *Taraxacum officinale* agg. and *Trifolium repens*
GS1	n/a (GL2C, GL3B, GL3C, and GL3E)	The following species were commonly encountered in non-Annex I calcareous grassland: *Agrostis capillaris*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Brachythecium rutabulum*, *Calliergonella cuspidata*, *Carex flacca*, *Centaurea nigra*, *Cerastium fontanum*, *Cirsium arvense*, *Cynosurus cristatus*, *Dactylis glomerata*, *Daucus carota*, *Festuca rubra*, *Holcus lanatus*, *Hypochaeris radicata*, *Leontodon autumnalis*, *Lolium perenne*, *Lotus corniculatus*, *Odontites vernus*, *Plagiomnium undulatum*, *Plantago lanceolata*, *Plantago major*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus acris*, *Ranunculus repens*, *Rhinanthus minor*, *Rubus fruticosus agg.*, *Rumex acetosa*, *Taraxacum officinale* agg., *Trifolium pratense*, *Trifolium repens* and *Veronica chamaedrys* Relevés BEC 175, BEC 258, BEC 363, RC-LQ R1, RC-LQ R6, RC-LQ R7, RC-LQ R8, 3999_R1, 4270_R1, 4399_R1, 4399_R2, 4400_R1, 4400_R2, 4400_R3, 4400_R4, 4400_R5, 4401_R1, 4401_R2, 4401_R3, 4401_R4, 4401_R5, 4402_R1, 4402_R2, 4415_R1 and 5853_R1, 4259_R1, 4259_R2, 4268_R1, 4243_R1, 4245_R1, 4245_R2, 4246_R1, 4248_R1 and 4149_R3
GS1	6210	The following species were commonly encountered in calcareous grassland which corresponded with the Annex I Calcareous grassland [6210] habitat: *Achillea millefolium*, *Agrostis capillaris*, *Anthoxanthum odoratum*, *Brachythecium rutabulum* , *Briza media*, *Calliergonella cuspidata*, *Campanula rotundifolia*, *Carex*

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		caryophyllea, *Carex flacca*, *Centaurea nigra*, *Ctenidium molluscum*, *Cynosurus cristatus*, *Dactylis glomerata*, *Daucus carota*, *Festuca ovina*, *Festuca rubra*, *Galium verum*, *Helictotrichon pubescens*, *Hypericum pulchrum*, *Hypochaeris radicata*, *Leontodon autumnalis*, *Leontodon hispidus*, *Leucanthemum vulgare*, *Linum catharticum*, *Lotus corniculatus*, *Pilosella officinarum*, *Plantago lanceolata*, *Plantago maritima*, *Polygala vulgaris*, *Potentilla erecta*, *Prunella vulgaris*, *Ranunculus acris*, *Rosa spinosissima*, *Rubus fruticosus* agg., *Scleropodium purum*, *Sesleria caerulea*, *Solidago virgaurea*, *Succisa pratensis*, *Taraxacum officinale* agg., *Thymus polytrichus*, *Trifolium pratense* and *Trifolium repens* Relevé BEC 7
GS1	*6210	The following species were commonly encountered in calcareous grassland which corresponded with the priority Annex I calcareous grassland [*6210] habitat: *Agrostis capillaris*, *Anthoxanthum odoratum*, *Anthyllis vulneraria*, *Asperula cynanchica*, *Briza media*, *Calliergonella cuspidata*, *Campanula rotundifolia*, *Carex caryophyllea*, *Carex flacca*, *Carex panicea*, *Centaurea nigra*, *Ctenidium molluscum*, *Cynosurus cristatus*, *Dactylis glomerata*, *Dactylorhiza fuchsii*, *Danthonia decumbens*, *Daucus carota*, *Euphrasia officinalis ag.*, *Festuca rubra*, *Galium verum*, *Gymnadenia conopsea*, *Helictotrichon pubescens*, *Holcus lanatus*, *Hypericum pulchrum*, *Koeleria macrantha*, *Leontodon hispidus*, *Leucanthemum vulgare*, *Linum catharticum*, *Listera ovata*, *Lotus corniculatus*, *Pilosella officinarum*, *Plantago lanceolata*, *Plantago maritima*, *Polygala vulgaris*, *Potentilla erecta*, *Prunella vulgaris*, *Rhinanthus minor*, *Rhytidiadelphus squarrosus*, *Rosa spinosissima*, *Scleropodium purum*, *Sesleria caerulea*, *Solidago virgaurea*, *Succisa pratensis*, *Thymus polytrichus*, *Trifolium pratense* and *Trifolium repens* Relevés BEC 15, BEC 17 and BEC 102.
GS1	*8240	Grassland species as described in this table. 3322_R1 and 3322_R5
GS1/ED2	n/a	Grassland and spoil and bare ground species as described in this table. 3729_R1, 3729_R2, 3729_R3, 3729_R4 and 4266_R1
GS1/GS4	n/a	Grassland species as described in this table. 4270_R2
GS2	n/a	*Agrostis stolonifera*, *Arrhenatherum elatius*, *Briza media*, *Calystegia sepium*, *Carex flacca*, *Carex hirta*, *Centaurea nigra*, *Chamerion angustifolium*, *Cirsium arvense*, *Cirsium vulgare*, *Crepis* sp., *Cynosurus cristatus*, *Dactylis glomerata*, *Epilobium ciliatum*, *Epilobium hirsutum*, *Equisetum fluviatile*, *Festuca rubra*, *Filipendula ulmaria*, *Galium aparine*, *Heracleum sphondylium*, *Holcus lanatus*, *Juncus inflexus*, *Lathyrus pratensis*, *Leontodon hispidus*, *Lolium perenne*,

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Plantago lanceolata, *Poa annua*, *Prunella vulgaris*, *Pteridium aquilinum*, *Ranunculus acris*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex acetosa*, *Rumex obtusifolius*, *Sonchus asper*, *Stellaria media*, *Succisa pratensis*, *Taraxacum officinale* agg., *Trifolium pratense*, *Trifolium repens*, *Urtica dioica* and *Vicia sepium* 4199_R1
GS4	n/a	*Agrostis stolonifera*, *Anthoxanthum odoratum*, *Calliergonella cuspidata*, *Cirsium arvense*, *Cirsium palustre*, *Cynosurus cristatus Epilobium montanum*, *Filipendula ulmaria*, *Galium palustre*, *Juncus articulatus*, *Mentha aquatica*, *Molinia caerulea*, *Juncus effusus*, *Arrhenatherum elatius*, *Holcus lanatus*, *Lychnis flos-cuculi*, *Lythrum salicaria*, *Plantago lanceolata*, *Potentilla anserina*, *Potentilla erecta*, *Trifolium repens*, *Ranunculus flammula*, *Ranunculus repens*, *Ranunculus acris*, *Rumex obtusifolius*, *Senecio jacobaea*, *Trifolium pratense* and *Valeriana officinalis* Relevé: RC-LQ R3, 3962_R1, 3962_R2, 3962_R3, 3962_R4, 4275_R1, 4275_R2, 4275_R3, 4275_R4, 4275_R5 and 4275_R6
WD1	n/a	The most frequently recorded species within this habitat were: *Acer pseudoplatanus*, *Arum maculatum*, *Circaea lutetiana*, *Corylus avellana*, *Crataegus monogyna*, *Eurhynchium striatum*, *Fagus sylvatica*, *Fraxinus excelsior*, *Hedera helix*, *Ilex aquifolium*, *Isothecium alopecuroides*, *Isothecium myosuroides*, *Kindbergia praelonga*, *Lejeunea cavifolia*, *Metzgeria furcata*, *Neckera complanata*, *Phyllitis scolopendrium*, *Radula complanata*, *Rhynchostegiella tenella*, *Rubus fruticosus* agg., *Thamnobryum alopecurum*, *Thuidium tamariscinum*, *Tortella tortuosa* and *Urtica dioica*, Relevés: BEC 174, RC-LQ R2, 3734_R1, 3734_R2, 3734_R3, 3734_R4, 3734_R5, 4255_R1 and 4256_R1
WL1	n/a	*Calystegia sepium*, *Circaea lutetiana*, *Corylus avellana*, *Crataegus monogyna*, *Euonymus europaeus*, *Fraxinus excelsior*, *Hedera helix*, *Heracleum sphondylium*, *Ilex aquifolium*, *Lathyrus pratensis*, *Lonicera periclymenum*, *Prunus spinosa*, *Pteridium aquilinum*, *Quercus robur*, *Rubus fruticosus* agg., *Sambucus nigra*, *Sorbus aria*, *Sorbus aucuparia*, *Urtica dioica* and *Viburnum opulus*
WL2	n/a	*Acer pseudoplatanus*, *Alnus glutinosa*, *Corylus avellana*, *Crataegus monogyna*, *Fraxinus excelsior*, *Hedera helix*, *Ilex aquifolium*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Salix cinerea* and *Sambucus nigra* 4149_R2, 4619_R1 and 4619_R2
WN2	n/a (WL2A WL2E)	Oak-ash-hazel woodland in this area was typically either *Corylus avellana* or *Fraxinus excelsior* woodlands. The following species were recorded in areas that did not conform to any Annex I habitat type: *Acer pseudoplatanus*, *Arum maculatum*, *Brachypodium sylvaticum*, *Circaea lutetiana*, *Corylus avellana*, *Crataegus*

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		monogyna, *Eurhynchium hians*, *Eurhynchium striatum*, *Fissidens taxifolius*, *Fraxinus excelsior*, *Frullania dilatata*, *Geranium robertianum*, *Geum urbanum*, *Hedera helix*, *Homalothecium sericeum*, *Hypnum resupinatum*, *Ilex aquifolium*, *Isothecium alopecuroides*, *Isothecium myosuroides*, *Kindbergia praelonga*, *Lonicera periclymenum*, *Metzgeria furcata*, *Neckera complanata*, *Phyllitis scolopendrium*, *Plagiomnium undulatum*, *Potentilla sterilis*, *Primula vulgaris*, *Prunus spinosa*, *Quercus robur*, *Radula complanata*, *Rhytidiadelphus triquetrus*, *Rubus fruticosus* agg., *Rumex sanguineus*, *Thamnobryum alopecurum*, *Thuidium tamariscinum*, *Ulota bruchii*, *Veronica chamaedrys* and *Viola* spp. Relevés: BEC 139, BEC 336, BEC 340, BEC 366, BEC 404, RC-LQ R9, RC-LQ R10, 3297_R2, 3754_R1, 3754_R2, 3754_R4, 3768_R2, 4541_R1, 4541_R2, 4541_R5, 5505_R1, 5505_R2, 4422_R1, 4422_R3, 4422_R4, 3857_R1, 3936_R1, 3936_R2, 3936_R3, 3941_R1, 4414_R1, 4473_R1, 3790b_R1, 3790b_R2 and 4538_R2
WN2	*8240 (LPW)	Woodland which corresponded with the Annex I Limestone pavement [*8240] habitat included the following species: *Asplenium trichomanes* , *Brachypodium sylvaticum*, *Carex flacca*, *Corylus avellana*, *Crataegus monogyna*, *Ctenidium molluscum*, *Euonymus europaeus*, *Eurhynchium striatum*, *Fissidens dubius*, *Fragaria vesca*, *Fraxinus excelsior*, *Frullania dilatata*, *Geranium robertianum*, *Hedera helix*, *Homalothecium sericeum*, *Ilex aquifolium*, *Isothecium alopecuroides*, *Kindbergia praelonga*, *Lonicera periclymenum*, *Metzgeria furcata*, *Neckera complanata*, *Neckera crispa*, *Phyllitis scolopendrium*, *Plagiomnium undulatum*, *Potentilla sterilis*, *Prunus spinosa*, *Pteridium aquilinum*, *Radula complanata*, *Rhytidiadelphus triquetrus*, *Rosa spinosissima*, *Rubus fruticosus* agg., *Scapania aspera*, *Scleropodium purum*, *Sesleria caerulea*, *Solidago virgaurea*, *Thamnobryum alopecurum*, *Thuidium tamariscinum*, *Tortella tortuosa*, *Ulota bruchii*, *Ulota crispa*, *Veronica chamaedrys* and *Viola* spp. Relevés BEC 9, BEC 42, BEC 120, BEC 121, BEC 144, BEC 145, BEC 240, BEC 246, BEC 333, BEC 335, RC-LQ R4, 3155_R1, 3494_R1, 4413_R1, 4413_R2, 5508_R1, 3619_R1, 3638_R1, 3177_R2 and 3790_R3
WN2/ER2	*8240	Woodland and exposed calcareous rock species as described in this table. 3790a_R1
WN2/WS1	n/a	Woodland and scrub species as described in this table. 3768_R1
WN6	*91E0 (WN6_3c)	*Agrostis stolonifera*, *Calliergonella cuspidatum*, *Corylus avellana*, *Crataegus monogyna*, *Epilobium hirsutum*, *Equisetum fluviatile*, *Eurhynchium striatum*, *Filipendula ulmaria*, *Fraxinus excelsior*, *Galium aparine*, *Galium palustre*, *Geranium robertianum*, *Hedera helix*, *Juncus effusus*,

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Kindbergia praelonga, *Lythrum salicaria*, *Prunus spinosa*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex sanguineus*, *Salix cinerea* subsp. *oleifolia* and *Thamnobryum alopecurum* 3297_R1 and 3297a_R2
WS1	n/a	The following species were recorded within scrub habitat that does not meet the criteria for the Annex I Limestone pavement [*8240] habitat: *Agrostis capillaris*, *Agrostis stolonifera*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Brachypodium sylvaticum*, *Calliergonella cuspidata*, *Centaurea nigra*, *Circaea lutetiana*, *Corylus avellana*, *Crataegus monogyna*, *Dactylis glomerata*, *Festuca rubra*, *Filipendula ulmaria*, *Fragaria vesca*, *Fraxinus excelsior*, *Geum urbanum*, *Hedera helix*, *Holcus lanatus*, *Ilex aquifolium*, *Juncus conglomeratus*, *Kindbergia praelonga*, *Molinia caerulea*, *Myrica gale*, *Odontites vernus*, *Oxyrrhynchium hians*, *Plagiomnium undulatum*, *Plantago lanceolata*, *Potentilla erecta*, *Potentilla palustris*, *Primula vulgaris*, *Prunus spinosa*, *Pteridium aquilinum*, *Radula complanata*, *Ranunculus repens*, *Rhytidiadelphus squarrosus*, *Rosa canina*, *Rubus fruticosus* agg., *Rumex sanguineus*, *Salix cinerea*, *Symphoricarpos albus*, *Thamnobryum alopecurum*, *Thuidium tamariscinum*, *Trifolium pratense*, *Trifolium repens*, *Ulex europaeus*, *Urtica dioica*, *Veronica montana* and *Vicia sepium* 3938_R1, 3938_R2, 3938_R3, 4142_R1, 4155_R1, 4155_R2, 4155_R3, 4156_R1, 4156_R2, 4156_R3, 4156_R4, 4156_R5, 4270_R3, 4422_R2, 4517_R4, 4538_R1, 4541_R3, 4541_R4, 3754_R3 and 5505_R3
WS1	*8240 (LPE)	The following species were typical of areas of scrub that corresponded with the Annex I Limestone pavement [*8240] habitat: *Agrimonia eupatoria*, *Asplenium adiantum-nigrum*, *Brachythecium rutabulum*, *Calliergonella cuspidata*, *Campylium stellatum v. protensum*, *Cladonia pocillum*, *Didymodon insulanus*, *Dryopteris filix-mas*, *Epipactis atrorubens*, *Euphrasia salisburgensis*, *Euphrasia species*, *Fissidens taxifolius*, *Galium sterneri*, *Galium verum*, *Holcus lanatus*, *Homalothecium sericeum*, *Hylocomium brevirostre*, *Hypnum lacunosum*, *Hypochaeris radicata*, *Isothecium myosuroides*, *Lathyrus pratensis*, *Leontodon hispidus*, *Leontodon saxatilis*, *Plagiomnium species*, *Ranunculus acris*, *Schistidium apocarpum*, *Schistidium crassipilum*, *Trichostomum brachydontium*, *Trifolium pratense*, *Ulota bruchii*, *Veronica chamaedrys* and *Veronica montana* Relevés BEC 8, BEC 18, BEC 35, BEC 148, BEC 242, 3088_R1, 3088_R2, 3088_R3, 3088_R4, 3705_R1, 3705_R2, 3494_R2, 5507_R1 and 3322_R2
WS1	6210	Scrub species as described in this table. 3513_R1, 3513_R2 and 3322_R4

River Corrib to Lackagh Quarry and Surrounding areas (which includes part of Lough Corrib cSAC) - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WS1/ER2	*8240	Scrub and exposed calcareous rock species as described in this table. 3156_R1 and 3177_R1
WS2	n/a	*Anthriscus sylvestris*, *Corylus avellana*, *Crataegus monogyna*, *Fraxinus excelsior*, *Geranium robertianum*, *Hedera helix*, *Rubus fruticosus* agg. and *Salix* spp.

EC33

EC33 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Sonchus oleraceus*, *Arrhenatherum elatius*, *Rubus fruticosus*, *Senecio jacobaea*, *Potentilla sterilis*, *Epilobium montana*, *Chamerion angustifolium*, *Hedera helix*, *Lonicera periclymenum* and *Cirsium arvensis.*
ER2	*8240 (LPE_3a)	*Hedera helix*, *Rosa spinosissima*, *Asplenium ruta-muraria*, *Ctenidium molluscum*, *Geranium robertianum*, *Sesleria caerulea*, *Ilex aquilinum*, *Prunus spinosa*, *Sorbus hibernica*, *Corylus avellana*, *Teucrium scorodonia*, *A. Trichomanes*, *Thymus polytrichus*, *Fragaria vesca* and *Viburnum opulus.* EC33 R3
FS1	n/a	*Phragmites australis*, *Lythrum salicaria* and *Filipendula ulmaria.*
HD1	n/a	*Pteridium aquilinum*, *Arrhenatherum elatius*, *Sonchus oleraceus*, *Holcus lanatus* and *Galium aparine*.
GS1	6210 (GL3a)	*Briza media*, *Galium verum*, *Prunella vulgaris*, *Succisa pratensis*, *Dactylis fuchsia*, *Thymus polytrichus*, *Trifolium pratensis*, *Sesleria albicans*, *Anthoxanthum odoratum* and *Lotus corniculatus.* Also some wet elements in grassland adjacent to wetland e.g. *Schoenus nigricans*, *Molinia caerulea* and *Galium boreale.* EC33 R2 and EC33 R4
GS2	n/a	Species-poor variant. Typical species include *Lolium perenne*, *Odontites verna*, *Ranunculus repens*, *Cirsium arvensis*, *Centaurea nigra*, *Holcus lanatus* and *Agrostis capillaris.*
	6510 (GL3e)	Typical species include *Plantago lanceolata*, *Odontites verna*, *Ranunculus acris*, *Prunus vulgaris*, *Senecio jacobaea*, *Lolium perenne*, *Cerastium fontanum*, *R. repens*, *Centaurea nigra*, *Leucanthemum vulgare* and *Trifolium repens.* EC33 R1
WN2	n/a	*Corylus avellana*, *Hedera helix*, *Fraxinus excelsior*, *Veronica chamaedrys*, *Rubus fruticosus*, *Primula vulgaris*, *Rhytidiadelphus triquetrus*, *Geranium robertianum* and *Brachythecium rutabulum.*

EC33 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WN6	*91E0	Occurs in mosaic with scrub and reed swamp (FS1). *Salix cinerea*, *Fraxinus excelsior*, *Iris pseudacorus*, *Phragmites australis* and *Filipendula ulmaria*.
WS1	n/a	*Prunus spinosa*, *Crataegus monogyna*, *Rubus fruticosus*, *Arrhenatherum elatius*, *Euonymus europaeus*, *Lonicera periclymenum* and *Calystegia sepium*.

EC36

EC36 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ER2	*8240 (LPE_1b/1c)	*Acer pseudoplatanus*, *Asplenium ruta-muraria*, *Buddleja davidii.*, *Calluna vulgaris*, *Carex flacca*, *Carlina vulgaris*, *Centranthus ruber*, *Ceterach officinalis*, *Corylus avellana*, *Cotoneaster* sp., *Festuca ovina*, *Fissidens dubius*, *Fraxinus excelsior*, *Geranium robertianum*, *Hedera helix*, *Ilex aquifolium*, *Linum catharticum*, *Lotus corniculatus*, *Mycelis muralis*, *Potentilla erecta*, *Prunus spinosa*, *Rosa spinosissima*, *Rubus fruticosus* agg., *Sesleria albicans*, *Sorbus Hibernica*, *Succisa pratensis*, *Teucrium scorodonia*, *Thalictrum minus*, *Thymus praecox*, *Tortella tortuosa* and *Trichostomum crispulum*. EC36 R6
GA1	n/a	*Holcus lanatus*, *Trifolium repens*, *Ranunculus repens*, *Cirsium arvense*, *Ranunculus acris*, *Rumex crispus*, *Agrostis stolonifera*, *Heracleum sphondylium* with *Plantago major*, *Ononis repens*, *Rumex obtusifolius*. Occasional GS4 species *e.g. Juncus effusus*, *Potentilla anserina* and *Carex hirta*. 1875_R1
GS1	n/a	Non-annex variant. Typical species include *Ranunculus acris*, *Holcus lanatus*, *Dactylis glomerata*, *Centaurea nigra*, *Plantago lanceolata*, *Cirsium arvense*, *Senecio jacobaea*, *Cynosurus cristatus*, *Prunella vulgaris*, *Festuca rubra*, *Trifolium repens*, *Lolium perenne*, *Agrostis stolonifera*, *Trifolium pratense*, *Taraxacum officinale* agg. Some *Daucus carota*, *Lotus corniculatus*, *Galium verum*, *Linum catharticum*. Some GS4 species locally e.g. *Filipendula ulmaria* and *Carex hirta*. 1841_R1, 1843_R1, 1858_R1, 1862_R1, 1890_R1, 1890_R2, 1897_R1, 1897_R2, 4608_R1, 4610_R1, 4611_R1, 4612_R1 and 4613_R1
	6210/6210* (GL3a)	Annex Habitat sometimes with orchids. Typical species include *Briza media*, *Sesleria caerulea*, *Anthyllis vulneraria*, *Succisa pratensis*, *Lotus corniculatus*, *Leontodon hispidus*, *Carex flacca*, *Centaurea nigra*, *Linum catharticum*, *Ctenidium molluscum*, *Pilosella officinarum*, *Primula veris*, *Galium verum*, *Carlina vulgaris*, *Rhinanthus minor*, *Solidago virgaurea*, with orchids *Gymnadenia conopsea* and *Dactylorhiza fuchsii* and *Neottia ovata*, *Primula veris*, *Leucanthemum vulgare*, *Daucus carota*, *Crepis capillaris*, *Avenula pubescens* and *Homalothecium lutescens*. Some encroaching scrub of *Pteridium aquilinum*, *Prunus spinosa* and *Crataegus monogyna*. EC36 R1 and EC36 R3
GS1/ GS2b	n/a	Species-poor GS2b *Arrhenatherum elatius*, *Ranunculus repens*, *Cirsium arvense*, *Rumex obtusifolius*, *Rumex crispus*, *Potentilla anserina*, *Heracleum sphondylium*, *Cerastium fontanum*, *Juncus effusus*, *Lolium perenne*, *Agrostis stolonifera*, *Holcus lanatus*, *Alopecurus pratensis*, *Urtica dioica*, *Potentilla anserina*, with occasional GS1 species *e.g. Prunella vulgaris*, *Centaurea nigra*, *Trifolium pratensis*,

EC36 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Achillea millefolium, *Leontodon hispidus*, *Rosa spinosissima*, *Centaurea nigra*, *Anthyllis vulneraria*, *Linum catharticum*, *Prunella vulgaris*, *Lotus corniculatus* and *Euphrasia officinalis* agg.
GS1/ HD1	n/a	Typical GS1 species with *Pteridium aquilinum*. Some areas highly grazed, others with low grazing.
GS2	n/a	Low species-diversity variant. Typical species: *Arrhenatherum elatius*, *Ranunculus repens*, *Cirsium arvense*, *Rumex obtusifolius*, *Rumex crispus*, *Potentilla anserina*, *Heracleum sphondylium*, *Cerastium fontanum*, *Juncus effusus*, *Lolium perenne*, *Agrostis stolonifera*, *Holcus lanatus*, *Alopecurus pratensis* and *Urtica dioica*. Occasional GS1 species e.g. *Prunella vulgaris*, *Centaurea nigra*, *Trifolium pratensis*, *Achillea millefolium*, in shorter vegetation.
GS2	n/a	More species-rich variant. Typical species are *Heracleum sphondylium* (LD), *Stachys sylvatica*, *Phleum pratense*, *Calystegia sepium*, *Lolium perenne*, *Rumex obtusifolius*, *Lathyrus pratensis*, *Tussilago farfara*, *Arrhenatherum elatius* (LA), *Cirsium arvense* (LA), *Dactylis glomerata* and *Lapsana communis*. Occasional GS1/ 6210 indicators e.g. *Knautia arvensis*, *Galium verum*, *Centaurea nigra* (LA), *Rhinanthus minor*, *Rosa spinosissima*, *Leucanthemum vulgare*, *Daucus carota*, *Pimpinella saxifraga*, *Dactylorhiza fuchsii*, *Succisa pratense* (LA), *Carex flacca*, *Thymus polytrichus*, *Lotus corniculatus*. Scattered scrub frequent e.g. *Rubus fruticosus* agg. *Prunus spinosa*, *Pteridium aquilinum*, *Corylus avellana*, *Sorbus* sp.
GS2	6510	Typical species are (but not limited to) *Cynosurus cristatus*, *Festuca rubra/ovina*, *Dactylis glomerata*, *Phleum pratense*, *Agrostis capillaris*, *Briza media*, *Holcus lanatus*, *Anthoxanthum odoratum*, *Rhinanthus minor*, *Centaurea nigra*, *Plantago lanceolata*, *Lotus corniculatus*, *Achillea millefolium*, *Daucus carota*, *Agrimonia eupatoria*, *Thymus praecox*, *Hypochaeris radicata*, *Prunella vulgaris*, *Ranunculus acris*, *Cerastium fontanum*, *Prunus spinosus* and *Filipendula ulmaria*. EC36 R7
GS2/ WS1	n/a	GS2 species: *Centaurea nigra*, *Leucanthemum vulgare*, *Arrhenatherum elatius*, *Centranthus ruber*, *Plantago lanceolata*, *Polygala vulgaris*, *Calliergonella cuspidata*, *Agrostis stolonifera*, *Potentilla erecta*, *Hypochaeris radicata*, *Brachypodium sylvaticum*, with frequent WS1 species: *Rubus fruticosus* agg., *Fraxinus excelsior*, *Acer pseudoplatanus*, *Chamerion angustifolium*, *Salix caprea* and *Corylus avellana*. 6210 species in shorter vegetation e.g. *Briza media*, *Lotus corniculatus*, *Carex flacca*, *Galium verum*, *Carlina vulgaris* and *Tortella tortuosa*. 1881_R1
GS4	n/a	High species-diversity wet grassland. Typical species include *Juncus conglomeratus*, *Agrostis stolonifera*, *Potentilla erecta*, *Dactylorhiza fuchsii*, *Prunella vulgaris*, *Juncus bufonius*,

EC36 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Filipendula ulmaria (LD), *Lotus corniculatus*, *Lathyrus linifolius*, *Juncus effusus*, *Holcus lanatus*, *Carex flacca*, *Succisa pratensis* (LA), *Anthoxanthum odoratum*, *Molinia caerulea*, *Hypochaeris radicata*, *Vicia cracca*, *Centaurea nigra*, *Carex panicea*, *Plantago lanceolata*, *Potentilla anserina*, *Vicia sepium*, *Cirsium arvense* (LD), *Lathyrus pratensis*, *Persicaria amphibia* and *Alopecurus pratensis*. Occasional 6210 species e.g. *Lotus corniculatus*, *Rhinanthus minor*, *Euphrasia officinalis* agg. and *Gymnadenia conopsea*.
GS4/ FS2	n/a	Central wet channel supports tall-herb swamp FS2 (with local areas of reed and large sedge swamp FS1): *Juncus effusus*, *Nasturtium aquaticum* (LD), *Glyceria fluitans*, *Juncus articulatus*, *Typha latifolia*, *Eleocharis palustris*, *Potamogeton natans*, *Iris pseudacorus*, *Lemna minor* and *Lemna minuta*. Vegetation cover decreases in channel to southeast. Wet grassland with typical GS4 species (above) with additions such as *Trifolium pratense*, *Ranunculus acris*, *Hypericum pulchrum*, *Equisetum palustre*, *Epilobium hirsutum*, *Cirsium palustre*, *Mentha aquatica*, *Carex nigra*, *Carex disticha*, *Galium palustre*, *Epilobium palustre*, *Dactylorhiza fuchsii*, *Lythrum salicaria*, *Daucus carota* and *Senecio aquatica.*
HD1	n/a	*Pteridium aquilinum* (D), *Cirsium arvense* and *Rumex crispus*.
WL1	n/a	*Crataegus monogyna*, *Prunus spinosa*, *Fraxinus excelsior*, *Rubus fruticosus* agg. *Pteridium aquilinum* (at edges), *Corylus avellana*, *Calystegia sepium*, *Urtica dioica*, Hedera *helix* and *Ilex aquifolium*.
WL2	n/a	*Fraxinus excelsior* dominant (mature and young trees) with *Prunus spinosa*, *Hedera helix*, *Asplenium scolopendrium*, *Rubus fruticosus* agg. *Thamnobryum alopecurum*, *Crataegus monogyna*, *Calystegia sepium*, *Urtica dioica*, *Corylus avellana* and *Populus tremula*.
WN2	n/a	*Fraxinus excelsior* with *Crataegus monogyna*, *Hedera helix*, *Acer pseudoplatanus*, *Populus tremula*, *Ilex aquifolium*, *Lonicera periclymenum*, *Dryopteris dilatata*, *Carex remota*, *Eurhynchium striatum* and *Neckera complanata*, *Prunus spinosa*, *Ilex aquilinum*, *Corylus avellana*, *Fragaria vesca*, *Hedera helix*, *Rubus fruticosus*, *Viola* spp., *Geranium robertianum*, *Rosa canina*, *Circaea lutetiana* and *Brachypodium sylvaticum*. 1885_R1, 4473_R2 and 1893_R1
WN2	*8240 (LPW_2a)	*Corylus avellana*, *Ilex aquifolium*, *Euonymus europaeus*, *Fraxinus excelsior*, *Crataegus monogyna* and *Rubus fruticosus* agg. Ground flora includes *Thamnobryum alopecurum*, *Eurhynchium striatum*, *Neckera crispa Dryopteris filix-mas*, *Asplenium scolopendrium*, *Melica uniflora*, *Circaea lutetiana*, *Potentilla sterilis*, *Primula vulgaris* and *Geranium robertianum.* EC36 R2, 1889_R1 and 1883_R1

EC36 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WS1	n/a	*Corylus avellana*, *Prunus spinosa*, *Crataegus monogyna*, *Rubus fruticosus* agg. *Pteridium aquilinum* and *Hedera helix*. Occasional mature *Fraxinus excelsior* trees. 4612_R2

EC37

EC37 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Cirsium arvense*, *Tripleurospermum inodorum*, *Persicaria maculata*, *Rumex crispus*, *Stellaria media*, *Euphorbia helioscopia*, *Plantago major*, *Rumex obtusifolius*, *Sonchus oleraceus*, *Sisymbrium officinale*, *Cirsium vulgare*, *Centaurea nigra*, *Potentilla anserina* with scattered *Rubus fruticosus* agg. scrub.
ER2	*8240 (LPE_1b)	Typical species include *Teucrium scorodonia*, *Geranium robertianum*, *Asplenium ruta-muraria*, *Asplenium scolopendrium*, *Tortella tortuosa*, *Fissidens dubius*, *Fragaria vesca*, *Sesleria caerulea*, *Mycelia muralis*, *Hedera helix*, *Ctenidium molluscum*, *Erica cinerea*, *Asperula cynanchica*, *Plantago maritima*, *Thymus polytrichus*, *Briza media*, *Calluna vulgaris* and *Hedera helix*. Invading scrub comprises *Corylus avellana*, *Prunus spinosa*, *Crataegus monogyna*, *Euonymus europaeus* and *Rubus fruticosus* agg. EC37 R3
GS1	n/a	Low species-diversity variant. Typical species include *Trifolium repens*, *Cirsium arvense*, *Calliergonella cuspidata*, *Ranunculus repens*, *Dactylis glomerata*, *Lolium perenne*, *Cynosurus cristatus*, *Odontites verna*, *Cerastium fontanum*, *Trifolium pratense*, *Prunella vulgaris*, *Pteridium aquilinum*, *Plantago lanceolata*, *Brachythecium rutabulum*, *Holcus lanatus*, *Festuca rubra*, *Filipendula ulmaria* and *Bellis perennis*.
	n/a	Higher species-diversity variant. Typical species include *Cynosurus cristatus*, *Alopecurus pratensis*, *Trifolium repens*, *Cirsium palustre*, *Ranunculus repens*, *Ranunculus acris*, *Festuca rubra*, *Cerastium fontanum*, *Lolium perenne*, *Taraxacum officinale*, *Rumex acetosa*, *Trifolium pratense*, *Holcus lanatus* and *Plantago lanceolata*. *Leucanthemum vulgare*, *Trisetum flavescens*, *Thymus polytrichus*, *Lotus corniculatus Briza media* and *Cirsium arvense*. EC37 R5, EC37 R7 and 4956_R1
GS1	6210 and *6210 (GL3a)	Typical GS1 species (mentioned above) with calcareous indicator species frequent e.g. *Lotus corniculatus*, *Centaurea nigra*, *Briza media*, *Carex flacca*, *Daucus carota*, *Sesleria caerulea*, *Anthyllis vulneraria* and *Thymus polytrichus;* and frequent orchids *Anacamptis pyramidalis* and *Dactylorhiza fuchsia*. EC37 R1, EC37 R4, EC37 R6 and EC37 R8
GS1/ ER2	6210 (GL3A LPE_4B)	Species include *Sesleria albicans*, *Anacamptis pyramidalis*, *Briza media*, *Carex flacca*, *Thymus polytrichus*, *Teucrium scorodonia*, *Linum catharticum*, *Pilosella officinarum*, *Carlina vulgaris*, *Lotus corniculatus*, *Blackstonia perfoliata*, *Plantago maritima*, *Tortella tortuosa*, *Fissidens dubius* and *Ctenidium molluscum*.
GS2	n/a	*Arrhenatherum elatius* generally dominant with *Vicia cracca*, *Plantago lanceolata*, *Taraxacum officinale*, *Potentilla anserina*, *Potentilla reptans*, *Dactylis glomerata*, *Trifolium*

EC37 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		repens, *Rhytidiadelphus squarrosus*, *Rubus fruticosus* agg., *Ranunculus acris*, *Festuca rubra*, *Agrostis stolonifera*, *Holcus lanatus*, *Calystegia sepium*, *Cirsium arvense*, *Lathyrus pratensis*, *Heracleum sphondylium.* Where it occurs in a mosaic with *8240, there are some calcareous indicators (e.g. *Carex flacca*, *Briza media*, *Galium verum*, *Sesleria albicans*, *Leucanthemum vulgare*, *Dactylorhiza fuchsii*) but not enough for 6210 and *A. elatius* still abundant in tall vegetation.
WN2	n/a	*Corylus avellana* (D), *Crataegus monogyna*, *Hedera helix* (LD), *Primula veris*, *Ilex aquifolium*, *Rubus fruticosus* agg., *Arum maculatum*, *Primula vulgaris*, *Prunus spinosa*, *Kindbergia praelonga*, *Thamnobryum alopecurum* and *Eurhynchium striatum.* Grades to WS1 at edges. 1973_R1 and 1979_R1
WN2/ WS1	*8240 (LPW_2a in mosaic with WS1)	*Corylus avellana* dominant (mostly <3m in height) with typical *8240 (LPW) species in understorey e.g. *Prunus spinosa*, *Rubus fruticosus* agg., *Sorbus aria*, *Sorbus hibernica*, *Fragaria vesca*, *Neckera crispa*, *Rosa spinosissima*, *Thuidium tamariscinum*, *Ilex aquifolium*, *Brachypodium sylvaticum* and *Hedera helix*. EC37 R2
WS1	n/a	Scrub with occasional mature *Fraxinus excelsior*. *Pteridium aquilinum* often abundant at edges. Additional species: *Rubus fruticosus*, *Prunus spinosa*, *Corylus avellana* (particularly on limestone pavement), *Epilobium hirsutum*, *Chamerion angustifolium*, *Ulex europaeus* and *Hedera helix.* 1949_R1, 1974_R1 and 1982_R1

Lackagh Quarry to the N84 Headford Road (Ch. 11+250 – Ch. 12+100) – Habitats between EC36, EC37 and EC39, including Lackagh Quarry

Lackagh Quarry to the N84 Headford Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	*Festuca rubra*, *Centaurea nigra*, *Plantago maritima*, *Didymodon insulanus*, *Rubus fruticosus agg.*, *Carex flacca*, *Potentilla sterilis*, *Teucrium scorodonia*, *Agrostis capillaris* and *Calliergonella cuspidata* 4560_R1, 5379_R1 and 5413_R1
ED3	n/a	*Achillea millefolium*, *Agrostis canina*, *Arrhenatherum elatius*, *Bellis perennis*, *Blackstonia perfoliata*, *Briza media*, *Carex panicea*, *Centaurea nigra*, *Centaurium erythraea*, *Dactylis glomerata*, *Festuca rubra*, *Festuca* spp., *Galium verum*, *Gymnadenia conopsea*, *Hypericum pulchrum*, *Leontodon autumnalis*, *Leucanthemum vulgare*, *Lolium perenne*, *Lotus corniculatus*, *Odontites verna*, *Pilosella officinarum*, *Pimpinella major*, *Potentilla reptans*, *Prunus vulgaris*, *Pteridium aquilinum*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex* spp., *Salix cinerea*, *Senecio jacobaea*, *Solidago virgaurea*, *Succisa pratensis*, *Tussilago farfara*, *Ulex europaeus* and *Vicia cracca* 5412_R1 and 5381_R1
GA1	n/a	*Agrostis* spp., *Bellis perennis*, *Centaurea nigra*, *Cirsium arvense*, *Cirsium* spp., *Cynosurus cristatus*, *Dactylis glomerata*, *Epilobium montanum*, *Holcus lanatus*, *Lolium perenne*, *Odontites vernus*, *Pimpinella major*, *Plantago lanceolata*, *Plantago major*, *Polypodium* spp., *Prunella vulgaris*, *Prunus spinosa*, *Pteridium aquilinum*, *Ranunculus repens*, *Rumex* spp., *Trifolium repens* and *Urtica dioica*
GS1	n/a	Calcareous grassland that does not meet EU Annex I habitat criteria. Species include *Agrostis canina*, *Arrhenatherum elatius*, *Bellis perennis*, *Briza media*, *Carex* spp., *Centaurea nigra*, *Cirsium arvense*, *Cirsium vulgare*, *Ctenidium molluscum*, *Cynosurus cristatus*, *Dactylis glomerata*, *Holcus lanatus*, *Leontodon hispidus*, *Leontodon saxatilis*, *Leucanthemum vulgare*, *Lolium perenne*, *Lolium* spp., *Lotus corniculatus*, *Pimpinella major*, *Plantago lanceolata*, *Polygonum* sp., *Potentilla reptans*, *Prunella vulgaris*, *Ranunculus repens*, *Rumex obtusifolius*, *Rumex* spp., *Senecio jacobaea*, *Solidago virgaurea*, *Trifolium dubium*, *Trifolium pratense* and *Trifolium repens* 1970_R1, 4561_R1, 4563_R1, 4563_R2, 5391_R1, 5403_R1, 5407_R1, 5408_R1, 5411_R1 and 5629_R1
	6210	Annex I habitat with the following species: *Briza media*, *Calliergonella cuspidata*, *Centaurea nigra*, *Festuca rubra*, *Anthoxanthum odoratum*, *Anthyllis vulneraria*, *Carex panicea*, *Pimpinella major*, *Plantago lanceolata*, *Achillea millefolium*, *Blackstonia perfoliata*, *Leucanthemum vulgare*, *Lotus corniculatus*, *Rubus fruticosus* agg., *Centaurium erythraea*, *Tussilago farfara*, *Carex flacca*, *Hypericum pulchrum*, *Leontodon hispidus*, *Linum catharticum*, *Potentilla anserina*, *Prunella vulgaris*, *Taraxacum officinale* agg., *Trifolium pratense*, *odoratum*, *Agrostis capillaris*, *Knautia arvensis*,

Lackagh Quarry to the N84 Headford Road - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Pimpinella major, *Cotoneaster* sp., *Daucus carota*, *Helictotrichon pubescens*, *Hypericum pulchrum*, *Lathyrus pratensis*, *Plantago lanceolata*, *Potentilla anglica*, *Ranunculus repens*, *Solidago virgaurea*, *Alchemilla vulgaris*, *Calystegia sepium*, *Cirsium dissectum*, *Teucrium scorodonia*, *Agrostis canina*, *Alchemilla mollis*, *Campanula rotundifolia*, *Dactylorhiza fuchsii*, *Lolium perenne*, *Odontites vernus*, *Plantago major*, *Plantago maritima*, *Potentilla reptans*, *Rumex* spp., *Salix cinerea*, *Trifolium dubium* and *Vicia cracca* LQ-N84 R1 and LQ-N84 R2
GS1/GS2	n/a	Small area of grassland on rocky mound, waste land that is becoming encroached by bramble and scrub; Small patch of *Fallopia japonica*. *Angelica sylvestris*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Calystegia sepium*, *Crataegus monogyna*, *Dactylis glomerata*, *Epipactis helleborine*, *Festuca rubra*, *Festuca vivipara*, *Homalothecium sericeum*, *Hylocomium splendens*, *Lathyrus pratensis*, *Leontodon hispidus*, *Leucanthemum vulgare*, *Linum catharticum*, *Lotus corniculatus*, *Lythrum salicaria*, *Petasites fragrans*, *Pimpinella major*, *Pimpinella saxifraga*, *Plantago lanceolata*, *Potentilla anserina*, *Potentilla reptans*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Salix caprea*, *Salix cinerea*, *Senecio jacobaea*, *Trifolium dubium*, *Trifolium pratense* and *Vicia cracca*
GS2	n/a	*Arrhenatherum elatius*, *Calystegia sepium*, *Centaurea nigra*, *Dactylis glomerata*, *Epilobium montanum*, *Filipendula ulmaria*, *Fraxinus excelsior*, *Lathyrus pratensis*, *Leucanthemum vulgare*, *Plantago lanceolata*, *Prunus spinosa*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex crispus*, *Salix cinerea*, *Senecio jacobaea*, *Tussilago farfara* and *Ulex europaeus* 5410_R1
HD1	n/a	*Dactylis glomerata*, *Prunus spinosa*, *Pteridium aquilinum* and *Rubus fruticosus* agg.
WL1	n/a	*Calystegia sepium*, *Cirsium arvense*, *Corylus avellana*, *Crataegus monogyna*, *Euonymus europaeus*, *Fraxinus excelsior*, *Hedera helix*, *Ilex aquifolium*, *Lathyrus pratensis*, *Lonicera periclymenum*, *Prunus spinosa*, *Pteridium aquilinum*, *Quercus robur*, *Rosa canina*, *Rubus fruticosus* agg., *Salix caprea*, *Salix cinerea*, *Sorbus aria*, *Urtica dioica* and *Viburnum opulus*
WN2	n/a	*Fraxinus excelsior*, *Crataegus monogyna*, *Hedera helix*, *Ilex aquifolium* 4033_R1
WS1	n/a	*Prunus spinosa*, *Crataegus monogyna*, *Urtica dioica*, *Rubus fruticosus agg.*, *Calliergonella cuspidata*, *Salix aurita*, *Fragaria vesca*, *Galium odoratum*, *Veronica chamaedrys* and *Salix caprea.* 4563_R2

EC39

EC39 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Cirsium arvense*, *Tripleurospermum inodorum*, *Polygonum aviculare*, *Plantago major*, *officinale*, *Cirsium arvensis*, *Plantago major*, *Potentilla anserina* with scattered *Rubus fruticosus* agg. scrub.
ER2	*8240 (LPE_1b)	Exposed limestone pavement: *Hedera helix*, *Corylus avellana*, *Prunus spinosa*, *Geranium robertianum*, *Sesleria albicans*, *Asplenium ruta-muraria*, *Teucrium scorodonia*, *Mycelis muralis*, *Epipactis helleborine*, *Fissidens dubius*, *Ctenidium molluscum*, *Tortella tortuosa* and *Scapania asper* in grykes. EC39 R1 and EC39 R2
FL5	n/a	*Nymphaea alba*, *Elodea Canadensis*, *Lemna* sp. The smallest water body near the eastern edge had *Potamogeton natans*, *Hippuris vulgaris*, *Elodea canadensis*, *Alisma plantago-aquatica* and *Ranunculus trichophyllus* on exposed mud at edge.
FS1	n/a	*Phragmites australis*, *Schoenoplectus lacustris* and *Cladium mariscus* are the main species. EC39 R12 and 2073_R2
	*7210	*Cladium mariscus* and *Phragmites australis.*
FW4	n/a	Mostly no emergent vegetation. Some drains with *Sparganium natans*, *Utricularia vulgaris* and *Myriophyllum* sp.
GS4	6410 (GL1d and GL1c)	*Molinia caerulea*, *Carex panacea*, *Carex nigra*, *Carex elata*, *Carex echinata*, *Carex pulicaris*, *Carex disticha*, *Carex ovalis*, *Juncus articulatus*, *Filipendula ulmaria*, *Potentilla erecta*, *Cirsium dissectum* and *Achillea ptarmica*. *Calliergonella cuspidata* is the main bryophyte, but *Climacium dendroides* and *Rhytidiadelphus squarrosus* occur towards grazed edges. At the edges of the wet meadows, where *Molinia caerulea* is very sparse or absent, other species occurring more frequently include *Potentilla anserina*, *Carex nigra*, *Holcus lanatus*, *Ranunculus repens*, *Galium palustre*, *Festuca arundinacea* and *Eleocharis palustris*. EC39 R6, EC39 R7, EC39 R8, EC39 R10, EC39 R14 and EC39 R15
GS4	n/a	*Potentilla anserina*, *Agrostis stolonifera*, *Ranunculus flammula*, *Glyceria fluitans*, *Juncus articulates*, *Filipendula ulmariam*, *Molinia caerulea*, *Carex binervis*, *Alopecurus geniculatus*, *Phragmites australis*, *Calliergonella cuspidata* 2091_R1 and 2073_R1
GA1	n/a	*Lolium perenne* and *Trifolium repens sward. Cirsium arvense* and *Rumex obtusifolius*. Also *Poa Pratensis*, *Odontites verna* and *Polygonum persicaria*. 2374_R2
GS1	n/a	*Trifolium repens*, *Cirsium arvense*, *Calliergonella cuspidata*, *Ranunculus repens*, *Dactylis glomerata*, *Lolium perenne*,

EC39 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Cynosurus cristatus, *Anthoxanthum odoratum*, *Cerastium fontanum*, *Trifolium repens*, *Prunella vulgaris*, *Pteridium aquilinum*, *Plantago lanceolata*, *Brachythecium rutabulum*, *Holcus lanatus*, *Festuca rubra*, *Filipendula ulmaria* and *Bellis perennis*.
	n/a	High-diversity calcareous grassland. Aforementioned species with calcareous indicator species frequent e.g. *Lotus corniculatus*, *Centaurea nigra*, *Briza media*, *Carex flacca*, *Daucus carota*, *Sesleria caerulea*, *Anthyllis vulneraria* and *Thymus polytrichus;* and frequent orchids *Anacamptis pyramidalis*, *Dactylorhiza fuchsii*. EC39 R5 and 2374_R1
GS1	6210 (GL3a)	Aforementioned species and *Agrostis capillaris*, *Trifolium pratense*, *Odontites verna*, *Ranunculus acris*, *Festuca rubra*, *Leucanthemum vulgare*, *Centaurea nigra*, *Hypochaeris radicata*, *Prunella vulgaris*, *Plantago lanceolata*, *Blackstonia perfoliata* and *Galium verum*. EC39 R11 and 2096_R1
GS2	n/a	*Arrhenatherum elatius*, *Vicia cracca*, *Plantago lanceolata*, *Taraxacum officinale*, *Potentilla anserina*, *Dactylis glomerata*, *Trifolium repens*, *Rubus fruticosus* agg., *Ranunculus acris*, *Festuca rubra*, *Agrostis stolonifera*, *Holcus lanatus*, *Calystegia sepium*, *Cirsium arvense*, *Lathyrus pratensis*, *Heracleum sphondylium.* and *Rhytidiadelphus squarrosus*. 2080_R2 and 2375_R1
	6510	Typical species: *Leucanthemum vulgare*, *Trifolium pratense*, *Potentilla anglica*, *Plantago lanceolata*, *Helictotrichon pubescens*, *Odontites verna*, *Calliergonella cuspidata*, *Trifolium dubium*, *Trisetum flavescens*, *Festuca rubra*, *Holcus lanatus*, *Leontodon hispidus*, *Cerastium fontanum*, *Pimpinella major*, *Carex flacca* and *Daucus carota*. EC39 R13
PF1	n/a	Non-annex habitat as the vegetation does not contain brown mosses. Typical species are *Phragmites australis*, *Schoenus nigricans*, *Myrica gale*, *Carex panicea*, *Carex nigra*, *Carex elata*, *Molinia caerulea*, *Hydrocotyle vulgaris*, *Menyanthes trifoliata*, *Filipendula ulmaria*, *Juncus acutiflorus*, *Agrostis stolonifera*, *Epilobium palustre* and *Ranunculus flammula*. EC39 R3 and 2076_R1
	7230 (RFLU4)	*Schoenus nigricans*, *Juncus subnodulosus*, *Molinia caerulea*, *Hydrocotyle vulgaris*, *Carex panacea*, *C. peliocarpa*, *Juncus articulatus*, *Ranunculus flammula*, *Cirsium dissectum*, *Parnassia palustris*, *Drosera anglica*, *Calliergonella cuspidata*, *Scorpidium scorpioides*, *S. cossonii*, *Campylium stellatum*, *Myrica gale* EC39 R9
WN2/ER2	*8240 (LPE_2a)	Wooded limestone pavement: dominated by *Corylus avellana* with *Crataegus monogyna* and *Prunus spinosa* scrub. Bryophytes include *Neckera complanata*, *Rhytidiadelphus triquetrus*, *Eurhynchium striatum*, *Neckera complanata* and

EC39 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Thuidium tamariscinum as well as *Ctenidium molluscum* and *Thamnobryum alopecurum*.
WN2	n/a	*Corylus avellana* dominated canopy with scrub (*Prunus spinosa* & *Crataegus monogyna.* Understorey with typical WN2 woodland flora such as *Circaea lutetiana*, *Phyllitis scolopendrium*, *Viola* sp., *Primula vulgaris, Hedera helix, Geum urbanum, Rumex sanguineus, Arum maculatum, Fragaria vesca*, *Brachypodium sylvaticum* and *Thamnobryum alopecurum.* 2086_R1 and 2086_R2
WS1	n/a	*Corylus avellana*, *Crataegus monogyna*, *Salix cinerea* and *Salix caprea* trees. *Prunus spinosa* is frequent in the more open areas with *Rubus fruticosus* agg. and *Pteridium aquilinum* locally abundant. *Fraxinus excelsior*. *Pteridium aquilinum* often abundant at edges. Additional species: *Rubus fruticosus*, *Prunus spinosa*, (particularly on limestone pavement), *Epilobium hirsutum*, *Chamerion angustifolium*, *Ulex europaeus* and *Hedera helix.* 2080_R1
WS1/WN6	n/a	Scrub grading to wet woodland at north-western edge of Ballindooly Lough. *Salix cinerea*, *Phragmites australis*, *Mentha aquatica*, *Filipendula ulmaria*, *Lysimachia* sp. and *Carex* sp.

Ballindooley to Parkmore Industrial Estate/Galway Racecourse (Ch. 12+550 – Ch. 14+400) – Habitats between EC39, EC42, EC44, EC47, EC49 and the Parkmore Industrial Estate/Galway Racecourse

Ballindooley to Parkmore Industrial Estate/Galway Racecourse - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	*Dactylis glomerata*, *Poa trivialis*, *Lolium perenne* 5177_R1
ED3	n/a	*Achillea millefolium*, *Anagallis arvensis*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Bellis perennis*, *Blackstonia perfoliata*, *Buddleja davidii*, *Carex flacca*, *Centaurea nigra*, *Centaurium erythraea*, *Crepis sp.*, *Cynosurus cristatus*, *Dactylis glomerata*, *Dactylorhiza fuchsia*, *Epilobium ciliatum*, *Epilobium montanum*, *Epilobium parviflorum*, *Euphrasia officinalis agg.*, *Festuca rubra*, *Hedera helix*, *Holcus lanatus*, *Hypericum perforatum*, *Leucanthemum vulgare*, *Linum catharticum*, *Lotus corniculatus*, *Medicago lupulina*, *Odontites vernus*, *Plantago lanceolata*, *Poa pratensis*, *Potentilla anserina*, *Potentilla reptans*, *Primula veris*, *Prunella vulgaris*, *Rubus fruticosus agg.*, *Rumex spp.*, *Salix caprea.*, *Salix cinerea*, *Scrophularia auriculata*, *Senecio jacobaea*, *Sonchus asper*, *Stachys palustris*, *Tussilago farfara* and *Veronica chamaedrys* 4585_R2 and 4804_R1
GA1	n/a	*Achillea millefolium*, *Bellis perennis*, *Cerastium fontanum*, *Cerastium glomeratum*, *Cirsium arvense*, *Cirsium* spp., *Cynosurus cristatus*, *Dactylis glomerata*, *Elytrigia repens*, *Heracleum sphondylium*, *Holcus lanatus*, *Lolium perenne*, *Plantago lanceolata*, *Poa trivialis*, *Ranunculus repens*, *Rumex obtusifolius*, *Rumex* spp., *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium repens* and *Urtica dioica* 5115_R1, 5126_R1, 5130_R1, 5131_R1, 5138_R1, 5138_R2 and 5143_R1
GA2	n/a	*Achillea millefolium*, *Bellis perennis*, *Cerastium fontanum*, *Lolium perenne*, *Plantago lanceolata*, *Ranunculus repens*, *Taraxacum officinale* agg. and *Trifolium pretense* 5140_R1
GS1	n/a	*Bellis perennis*, *Cerastium fontanum*, *Cirsium arvense*, *Dactylis glomerata*, *Heracleum sphondylium*, *Holcus lanatus*, *Lolium perenne*, *Lolium* spp., *Plantago lanceolata*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus repens*, *Ranunculus repens*, *Rumex* spp., *Taraxacum officinale agg.* and *Urtica dioica* 4782_R1, 4783_R1, 5133_R1, 5135_R1 and 5196_R1
	6210	*Sesleria caerulea*, *Carex flacca*, *Juncus conglomeratus*, *Lotus corniculatus*, *Leontodon hispidus*, *Potentilla palustris*, *Calliergonella cuspidata*, *Ctenidium molluscum*, *Scleropodium purum*, *Dicranum scoparium* 4585_R1

Ballindooley to Parkmore Industrial Estate/Galway Racecourse - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS2	n/a	Species-poor variant. *Arrhenatherum elatius*, *Agrostis capillaris*, *Anthoxanthum odoratum*, *Holcus lanatus*, *Phleum pratense*, *Dactylis glomerata*, *Plantago lanceolata*, *Cirsium arvense*, *Ranunculus acris*, *Ranunculus repens*, *Cerastium fontanum*, *Leucanthemum vulgare*, *Epilobium ciliatum*, *Potentilla anserina*, *Scorzoneroides autumnalis* and *Taraxacum officinale agg.* 5239_R1
	n/a	More species-rich variant. Species include: *Agrostis capillaris*, *Agrostis stolonifera*, *Alopecurus pratensis*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *Calystegia sepium*, *Centaurea nigra*, *Cerastium fontanum*, *Cirsium arvense*, *Dactylis glomerata*, *Heracleum sphondylium*, *Holcus lanatus*, *Phleum pratense*, *Plantago lanceolata*, *Potentilla anserina*, *Ranunculus acris*, *Rumex* spp., *Scorzoneroides autumnalis*, *Trifolium repens* and *Urtica dioica*
GS4	n/a	*Calliergonella cuspidate*, *Carex disticha*, *Carex flacca*, *Carex hirta*, *Cirsium arvense*, *Dactylis glomerata*, *Equisetum arvense*, *Holcus lanatus*, *Juncus effusus*, *Juncus inflexus*, *Lathyrus pratensis*, *Persicaria amphibia*, *Phleum pratense*, *Plantago lanceolata*, *Poa trivialis*, *Rumex crispus*, *Rumex obtusifolius*, *Scorzoneroides autumnalis*, *Taraxacum officinale* agg. and *Trifolium dubium*
WD1	n/a	*Acer pseudoplatanus*, *Fagus sylvatica*, *Fraxinus excelsior*, *Rubus fruticosus* agg. and *Urtica dioica*
WL1	n/a	*Alnus incana*, *Anthriscus sylvestris*, *Arrhenatherum elatius*, *Asplenium scolopendrium*, *Brachypodium sylvaticum*, *Calystegia sepium*, *Circaea lutetiana*, *Convolvulus arvensis*, *Corylus avellana*, *Crataegus monogyna*, *Dactylis glomerata*, *Dryopteris filix-mas*, *Euonymus europaeus*, *Fraxinus excelsior*, *Fuchsia magellanica*, *Galium aparine*, *Geranium robertianum*, *Geum urbanum*, *Hedera helix*, *Heracleum sphondylium*, *Lathyrus pratensis*, *Lonicera periclymenum*, *Prunus domestica*, *Prunus spinosa*, *Pteridium aquilinum*, *Ribes* spp., *Rosa canina*, *Rosa* spp., *Rubus fruticosus* agg., *Rumex sanguineus*, *Salix cinerea*, *Salix* spp., *Sambucus nigra*, *Urtica dioica*, *Vicia sepium* and *X Cuprocyparis leylandii*
WL2	n/a	*Acer pseudoplatanus*, *Alnus incana*, *Betula* sp., *Cornus* sp., *Cupressus* x *leylandii*, *Lonicera nitida*, *Picea glauca*, *Pinus radiata* and *Sorbus aucuparia*
WN2	n/a	*Acer pseudoplatanus*, *Corylus avellana*, *Fraxinus excelsior*, *Hedera helix*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Salix caprea* and *Salix cinereal* 4572_R1
WS1	n/a	*Alnus glutinosa*, *Alnus incana*, *Arrhenatherum elatius*, *Crataegus monogyna*, *Dactylis glomerata*, *Fraxinus excelsior*, *Hebe* sp., *Hedera helix*, *Plantago lanceolata*, *Prunus laurocerasus*, *Rubus fruticosus* agg., *Salix cinerea* and *Sorbaria* sp. 4822_R1

EC42

EC42 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ER2	*8240 (LPE_1B)	Open pavement areas have a characteristic sparse flora. The most conspicuous species include *Rosa spinosissima*, *Corylus avellana*, *Prunus spinosa*, *Mycelis muralis*, *Asplenium ruta-muraria*, *Senecio jacobaea*, *Teucrium scorodonia*, *Thymus polytrichus*, *Lotus corniculatus*, *Plantago maritima*, *Geranium robertianum*, *Phyllitis scolopendrium*, *Sesleria albicans* and *Carex flacca*. EC42 R1, EC42 R2 and EC42 R5
ER2	*8240 (Wooded) (LPE_2B)	The dominant shrub/tree species is *Corylus avellana* with *Fraxinus excelsior*, *Prunus spinosa*, *Crataegus monogyna*, *Ilex aquifolium* and *Sorbus aria* also frequent in the low canopy. Common ground layer species include *Brachypodium sylvaticum*, *Rubus fruticosus*, *Hedera helix*, *Potentilla sterilis*, *Neckera crispa*, *Fragaria vesca*, *Thuidium tamariscinum*, *Primula vulgaris* and *Thamnobryum alopecurum*.
GA1	n/a	The characteristic species noted included *Lolium perenne*, *Holcus lanatus*, *Cirsium arvense*, *Cirsium vulgare*, *Trifolium repens*, *Taraxacum officinale* and *Rumex obtusifolius*.
GM1	n/a	The main species in the vegetation include *Juncus articulatus*, *Juncus effusus*, *Mentha aquatica*, *Galium palustre*, *Ranunculus repens*, *Comarum palustre*, *Carex nigra*, *Carex panacea*, *Carex disticha*, *Carex echinata*, *Carex rostrata*, *Cirsium palustre*, *Epilobium* sp., *Potentilla anserina*, *Luzula campestris*, *Menyanthes trifoliata*, *Hypericum tetrapterum*, *Filipendula ulmaria*, *Molinia caerulea*, *Salix aurita*, *Anthoxanthum odoratum*, *Hydrocotyle vulgaris*, *Persicaria amphibia*, *Eleocharis palustris*, *Glyceria fluitans*, *Apium nodiflorum* and the wetland moss *Calliergonella cuspidata*.
GS2	n/a	*Arrhenatherum elatius* tends to dominate the tall grassy vegetation with *Centaurea nigra*, *Dactylis glomerata*, *Holcus lanatus*, *Trifolium repens* and *Anthoxanthum odoratum*.
GS1	n/a	Common calcareous grassland species noted include *Lotus corniculatus*, *Briza media*, *Carex flacca*, *Galium verum*, *Linum catharticum*, *Thymus polytrichus* and *Leontodon* sp. 2355_R1
GS1	6210	Typical species include *Lotus corniculatus*, *Briza media*, *Molinia caerulea*, *Carex flacca*, *Lathyrus pratensis*, *Scleropodium purum*, *Calliergonella cuspidata*, *Euphrasia* sp., *Centaurea nigra*, *Holcus lanatus*, *Hypericum maculatum*, *Potentilla erecta*, *Thuidium tamariscinum*, *Hypochaeris radicata*, *Trifolium pratense*, *Ctenidium molluscum*, *Leucanthemum vulgare*, *Festuca rubra*, *Hypericum pulchrum*, *Potentilla sterilis*, *Danthonia decumbens*, *Linum catharticum*, *Thymus polytrichus*, *Prunella vulgaris*, *Veronica chamaedrys*, *Daucus carota* and *Galium verum*. EC42 R4
GS4	n/a	*Anthoxanthum odoratum*, *Carex nigra*, *Carex echinata*, *Cirsium palustre*, *Rhytidiadelphus squarrosus*

EC42 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		2356_R1
WN2	*8240	*Corylus avellana*, *Ilex aquifolium*, *Hedera helix*, *Brachypodium sylvaticum*, *Fraxinus excelsior*, *Potentilla sterilis*, *Rubus fruticosus*, *Crataegus monogyna*, *Fragaria vesca*, *Primula vulgaris*, *Taraxacum* agg., *Brachythecium rutabulum*, *Geum urbanum*, *Lonicera periclymenum*, *Prunus spinosa*, *Thamnobryum alopecurum*, *Viola* sp., *Thuidium tamariscinum* and *Phyllitis scolopendrium*. EC42 R3
WS1	n/a	*Corylus avellana*, *Prunus spinosa*, *Crataegus monogyna*, *Ilex aquifolium*, *Sorbus aria*, *Rubus fruticosus*, *Hedera helix*, *Fragaria vesca*, *Thuidium tamariscinum*, *Geranium robertianum*, *Primula vulgaris* and *Kindbergia praelonga.* 2354_R1

EC44

EC44 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ER2	*8240 (LPE_1e)	*Hedera helix*, *Corylus avellana*, *Sesleria albicans*, *Teucrium scorodonia*, *Pteridium aquilinum*, *Neckera crispa*, *Ctenidium molluscum* and *Rubia peregrina*
GS1	n/a	*Briza media*, *Dactylis glomerata*, *Anthoxanthum odoratum*, *Holcus lanatus*, *Festuca rubra*, *Centaurea nigra*, *Linum catharticum*, *Lotus corniculatus*, *Euphrasia* sp., *Carex flacca*, *Rubus fruticosus*, *Blackstonia perfoliata*, *Daucus carota*, *Leucanthemum vulgare*, *Hypericum androsaemum* and *Potentilla reptans.* EC44 R4
GS2/GA1	n/a	*Rumex sanguineus*, *Cirsium arvense*, *Holcus lanatus*, *Plantago lanceolata*, *Senecio jacobaea*, *Cerastium fontanum*, *Urtica dioica*, *Heracleum sphondylium*, *Ranunculus repens* and *Potentilla anserina*
WN2/ER2	*8240 (LPW_2a)	*Corylus avellana* dominated canopy (4-5m high) with occasional *Crataegus monogyna*, *Ilex aquifolium* and *Sorbus aucuparia. Prunus spinosa* localised <2m high. Ground flora dominated by bryophytes notably *Eurhynchium striatum*, but also *Rhytidiadelphus triquetrus* and *Thuidium tamariscinum* and *Neckera spp*. common on base of trees. *Hedera helix* locally frequent. EC44 R1, EC44 R2
WN2	n/a	*Corylus avellana* dominated canopy (6-9m high) with occasional *Prunus spinosa* & *Crataegus monogyna.* Understorey with typical WN2 woodland flora such as *Veronica montana*, *Circaea lutetiana*, *Sanicula europaeus*, *Viola* sp., *Primula vulgaris*, *Hedera helix*, *Carex sylvatica*, *Brachypodium sylvaticum*, *Fragaria vesca*, *Epipactis helleborine*, *Thamnobryum alopecurum* and *Plagiomnium undulatum*.
WS1/WN2	n/a	*Prunus spinosa* dominant scrub species with occasional *Crataegus monogyna* and *Corylus avellana*. Also *Rubus fruticosus* agg. and occasionally *Pteridium aquilinum* and *Urtica dioica*.
WS1	*8240	*Corylus avellana*, *Hedera helix*, *Eurhynchium striatum*, *Brachypodium sylvaticum*, *Thamnobryum alopecurum*, *Crataegus monogyna*, *Kindbergia praelonga*, *Potentilla sterilis*, *Viola riviniana*, *Lonicera periclymenum*, *Ctenidium molluscum*, *Plagiochila asplenioides*, *Rubus fruticosus*, *Fragaria vesca*, *Solidago virgaurea*, *Sorbus aucuparia*, *Prunus spinosa*, *Primula vulgaris*, *Fissidens* sp., *Carex* sp., *Phyllitis scolopendrium*, *Epipactis helleborine* and *Sanicula europaeus*. EC44 R3
WS1	n/a	*Prunus spinosa*, *Crataegus monogyna*, *Urtica dioica*, *Rubus fruticosa* and *Pteridium aquilinum*. 2250_R1

EC47

EC47 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
GS1	n/a	*Pseudoscleropodium purum*, *Rhytidiadelphus squarrosus*, *Anthoxanthum odoratum*, *Holcus lanatus*, *Cynosurus cristatus*, *Trifolium repens (O-LF)*, *Geranium robertianum*, *Rubus fruticosus* agg., *Fragaria vesca Lotus corniculatus*, *Galium verum* and *Cirsium arvense*.
WN2/ER2	*8240 (LPW_2b)	*Fraxinus excelsior*, *Corylus avellana*, *Crataegus monogyna*, *Hedera helix*, *Rubus fruticosus* agg., *Asplenium scolopendrium*, *Viola sp.*, *Dryopteris filix mas*, *Fragaria vesca*, *Primula veris*, *Veronica chamaedrys*. *Eurhynchium striatum*, *Rhytidiadelphus triquetrus*, *Thamnobryum alopecurum* and *Scapania aspera*. EC47 R1
WS1/WN2/ ER2	n/a and *8240	*Prunus spinosa*, *Crataegus monogyna*, *Fraxinus excelsior*, *Corylus avellana*, *Ilex aquifolium*, *Urtica dioica*, *Geranium robertianum*, *Hedera helix*, *Veronica chamaedrys. Urtica dioica*. Bryophytes 70% cover: *Thamnobryum alopecurum* and *Eurhynchium striatum*. Some small areas of *8240 (LPW), within the woodland, but too small to map.
GA1	n/a	*Anthoxanthum odoratum*, *Holcus lanatus*, *Trifolium repens*, *Cynosurus cristatus*, *Lolium perenne*, *Lathyrus pratensis*, *Veronica chamaedrys*, *Agrostis stolonifera*, *Ranunculus repens.* 2316_R1
WS1	n/a	*Crataegus monogyna*, *Fraxinus excelsior*, *Geranium robertianum*, *Agrostis stolonifera*, *Urtica dioica* 2319_R1

EC48

EC48 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
WS1/WN2/ ER2	n/a	*Prunus spinosa, Corylus avellana, Crataegus monogyna, Urtica dioica, Geranium robertianum, Primula veris, Thamnobryum alopecurum, Eurhynchium striatum* and *Thuidium tamariscinum.*
WS1	n/a	*Crataegus monogyna, Sambucus nigra, Geranium robertianum, Veronica montana, Galium aparine, Agrostis stolonifera, Urtica dioica, Calliergon sp.* 2321_R1

EC49

EC49 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3/GS1/WS1	n/a	Bare flat disturbed ground with Pockets of grassland: *Centaurea nigra*, *Achillea millefolium*, *Linum catharticum*, *Blackstonia perfoliata* and *Centaurium erythraea*. Piles of spoil with *Buddleja davidii*, *Rubus fruticosus* agg, *Prunus spinosa*, *Centranthus ruber*, *Petasites* sp. and *Cotoneaster* sp.
ED3	n/a	2325_R3
ER2	n/a	*Rubus fruticosus agg.*, *Salix sp.*, *Centranthus ruber*, *Hypnum jutlandicum*, *Campylopus atrovirens* 2323_R1
GS1	n/a	*Anthoxanthum odoratum*, *Cynosurus cristatus*, *Trifolium repens*, *Ranunculus acris*, *Carex flacca*, *Linum catharticum*, *Rhinanthus minor*, *Euphrasia* sp. and *Odontites verna*. 2324_R1 and 2325_R1
WN2	n/a	*Corylus avellana*, *Crataegus monogyna*, *Hedera helix*, *Rubus fruticosus* agg. *Phyllitis scolopendrium*, *Arum maculatum*, *Lonicera periclymenum*, *Primula veris*, *Dryopteris filix mas*, *Thamnobryum alopecurum* and *Thuidium tamariscinum*. 5322_R1
WS1	n/a	*Prunus spinosa, Agrostis canina, Ranunculus acris, Anthoxanthum odoratum, Holcus lanatus, Plantago lanceolata, Trifolium repens, Senecio jacobaea, Calliergon species* 2325_R2

Galway Racecourse to Ardaun (Ch. 14+400 – Ch. 18+350 and along the R446 tie-in) – Habitats between EC56, EC57 and EC59

Galway Racecourse to Ardaun - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
BC4	n/a	*Epilobium sp., Griselinia sp.* 5094_R1
ED2	n/a/	*Plantago lanceolata, Agrostis stolonifera, Ranunculus repens, Bellis perennis, Plantago major* 5062_R1
ED3	n/a	*Buddleja davidii, Hypericum spp., Leucanthemum vulgare, Reseda luteola, Senecio jacobaea, Agrostis stolonifera, Holcus lanatus, Prunella vulgaris, Rumex obtusifolius, Rumex crispus, Plantago lanceolata, Senecio jacobaea, Ranunculus repens* 5310_R2, 5308_R1, 5310_R1, 5204_R1, 5101_R1, 5134_R1, 5134_R2, 5059_R1, 5059_R2 and 5062_R2
GA1	n/a	*Bellis perennis*, *Cirsium arvense*, *Cirsium vulgare*, *Dactylis glomerata*, *Holcus lanatus*, *Lolium perenne*, *Plantago lanceolata*, *Poa annua*, *Potentilla anserina*, *Ranunculus repens*, *Rumex obtusifolius*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium repens* and *Urtica dioica* 4866_R1, 4879_R1, 5034_R1, 5042_R1, 5044_R1, 5060_R1, 5060_R2, 5066_R1, 5308_R2 and 5308_R3
GA2	n/a	*Bellis perennis*, *Cirsium arvense*, *Festuca rubra*, *Holcus lanatus*, *Lathyrus pratensis*, *Lolium* spp., *Plantago lanceolata*, *Poa annua*, *Potentilla anserina*, *Prunella vulgaris*, *Senecio jacobaea*, *Senecio vulgaris*, *Taraxacum officinale agg.*, *Trifolium repens* and *Trifolium* spp. 5033_R1 and 4896_R1
GS1	n/a	*Achillea millefolium*, *Arctium lappa*, *Bellis perennis*, *Centaurea nigra*, *Cerastium fontanum*, *Cirsium arvense*, *Cirsium vulgare*, *Epilobium hirsutum*, *Holcus lanatus*, *Leucanthemum vulgare*, *Lolium perenne*, *Plantago lanceolata*, *Plantago major*, *Potentilla anserina*, *Prunella vulgaris*, *Ranunculus repens*, *Rumex crispus*, *Rumex obtusifolius*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium pratense*, *Trifolium repens*, *Urtica dioica* and *Veronica montana* 5310_R3, 5107_R1, 5059_R3, 5062_R4, 5062_R3, 5046_R1 and 5039_R1
GS2	n/a	*Arrhenatherum elatius*, *Centaurea nigra*, *Cirsium arvense*, *Dactylis glomerata*, *Epilobium parviflorum*, *Epilobium* sp., *Festuca rubra*, *Heracleum sphondylium*, *Plantago lanceolata*, *Pteridium aquilinum*, *Ranunculus repens*, *Rubus fruticosus* agg., *Rumex obtusifolius*, *Senecio jacobaea*, *Taraxacum officinale* agg., *Trifolium pratense*, *Ulex europaeus*, *Urtica dioica*, *Vicia cracca* and *Vicia sepium* 5165_R1 and 5039_R2
WD1/WS1	n/a	*Acer pseudoplatanus*, *Arrhenatherum elatius*, *Arum maculatum*, *Asplenium scolopendrium*, *Athyrium filix-femina*, *Brachypodium sylvaticum*, Chamaecyparis *lawsoniana*,

Galway Racecourse to Ardaun - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Corylus avellana, *Crataegus monogyna*, *Dactylis glomerata*, *Dryopteris filix-mas*, *Kindbergia praelonga*, *Eurhynchium striatum*, *Fagus sylvatica*, *Fraxinus excelsior*, *Hedera hibernica*, *Picea* sp., *Pinus sylvestris*, *Polystichum setiferum*, *Prunus spinosa*, *Rubus fruticosus* agg., *Salix caprea*, *Salix cinerea*, *Senecio jacobaea*, *Veronica hederacea*, *Veronica montana* and *Viola canina* 5094_R2 and 5066_R3
WL1	n/a	*Cornus* sp., *Corylus avellana*, *Crataegus monogyna*, *Escallonia* sp., *Fagus sylvatica*, *Fuchsii* sp., *Hedera helix*, *Prunus laurocerasus*, *Prunus spinosa*, *Rubus fruticosus* agg., *Salix caprea*, *Salix cinerea*, *Sorbaria*, *Sorbus aucuparia* and *Ulex europaeus*
WL2	n/a	*Acer pseudoplatanus*, *Alnus glutinosa*, *Alnus incana*, *Betula pubescens*, *Cornus* spp., *Corylus avellana*, *Crataegus monogyna*, *Fagus sylvatica*, *Fraxinus excelsior*, *Prunus spinosa*, *Rosa rugosa*, *Rubus fruticosus* agg., *Sorbus aucuparia*, *Symphoricarpos albus* and *Viburnum opulus* 2476_R1
WN2	n/a	*Corylus avellana*, *Cupressus x Leylandii*, *Fagus sylvatica*, *Fraxinus excelsior*, *Ilex aquifolium* and *Sorb aucuparia* 5492_R1 and 5066_R2
WS1	n/a	*Dactylis glomerata*, *Holcus lanatus*, *Lolium perenne*, *Plantago lanceolata*, *Prunus spinosa*, *Pteridium aquilinum*, *Rubus fruticosus* agg., *Trifolium pratense* and *Trifolium repens* 5283_R1, 5050_R1 and 5061_R1

EC56

EC56 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED2	n/a	*Prunella vulgaris, Agrostis stolonifera, Ranunculus repens, Bellis perennis, Cirsium arvense, Plantago major, Didymodon species* 127_R2
ED3	n/a	*Anthoxanthum odoratum, Holcus lanatus, Lolium perenne, Senecio jacobaea, Agrostis stolonifera, Ranunculus repens, Cirsium arvense, Cirsium vulgare, Heracleum sphondylium, Rumex conglomeratus* 127_R3
ER2	*8240 (LPE_1b)	*Corylus avellana, Ulex europaeus, Juniperus communis, Hedera helix, Rosa spinosissima, Teucrium scorodonia, Sesleria albicans, Mycelis muralis, Asplenium ruta-muraria, Geranium robertianum, Carlina vulgaris, Neckera crispa, Fissidens dubius, Tortella tortuosa, Ctenidium molluscum, Festuca rubra, Koeleria macrantha, Thymus praecox, Antennaria dioica, Lotus corniculatus, Hypericum pulchrum, Gentiana verna, Carex caryophyllea, Dactylorhiza fuchsia, Succisa pratensis, Rubus fruticosus, Phyllitis scolopendrium, Fragaria vesca, Dactylis glomerata* and *Solanum dulcamara.* EC56 R2 and EC56 R5
FL8/FS1	n/a	Wetland forming in excavated attenuation pond area adjacent to west side of M6/N6 junction. *Phragmites australis, Typha latifolia, Sparganium erectum, Schoenoplectus lacustris, Apium nodiflorum, Nasturtium officinale, Lemna minor* and *Epilobium hirsutum*
GA2	n/a	*Dactylis glomerata, Festuca rubra, Arrhenatherum elatius, Centaurea nigra, Festuca arundinacea, Holcus lanatus, Plantago lanceolata, Trifolium pratense, Trifolium repens, Senecio jacobaea, Trifolium dubium, Agrostis stolonifera, Ranunculus repens, Bellis perennis, Alopecurus pratensis, Taraxacum species, Calliergon species* 129_R1 and 107_R1
GS1	n/a	*Anthoxanthum odoratum, Festuca rubra, Holcus lanatus, Cynosurus cristatus, Plantago lanceolata, Centaurea nigra, Trifolium repens, Trifolium pratense, Lotus corniculatus, Ranunculus bulbosus, Achillea millefolium, Luzula campestris, Pteridium aquilinum, Hypochaeris radicata, Dactylorhiza fuchsii, Danthonia decumbens, Potentilla anserina, Senecio jacobaea, Bellis perennis, Agrostis canina, Prunella vulgaris, Taraxacum* agg., *Leucanthemum vulgare, Euphrasia* sp., *Briza media, Sonchus* sp., *Urtica dioica, Succisa pratensis, Rumex obtusifolius, Odontites verna, Pimpinella saxifraga* and *Primula vulgaris.* EC56 R8, EC56 R9, 118_R1, 127_R1, 113_R2 and 113_R3
GS1	6210 (GS1_3a)	*Succisa pratensis, Briza media, Danthonia decumbens, Festuca ovina, Schoenus nigricans, Cynosurus cristatus, Sesleria albicans, Carex pulicaris, Carex panacea, Carex demissa, Carex flacca, Pinguicula vulgaris, Trifolium repens, Antennaria dioica, Blackstonia perforata, Plantago maritima,*

EC56 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		Anagallis tenella, *Selaginella* sp., *Linum catharticum*, *Cirsium dissectum*, *Molinia caerulea*, *Gentiana verna*, *Euphrasia* sp., *Polygala vulgaris*, *Prunella vulgaris*, *Lathyrus linifolius*, *Dactylorhiza fuchsii*, *Platanthera bifolia*, *Calliergonella cuspidata*, *Ctenidium molluscum*, *Fissidens adianthoides* and *Didymodon ferrugineus*. EC56 R1, EC56 R3, EC56 R4 and EC56 R7
GS2	n/a	*Calliergonella cuspidata*, *Trifolium repens*, *Festuca rubra*, *Trifolium dubium*, *Rhytidiadelphus squarrosus*, *Carex flacca*, *Veronica serpyllifolia*, *Medicago lupulina*, *Ranunculus repens*, *Carex panicea* 129_R2
GS4/GS1	n/a	*Holcus lanatus*, *Juncus effusus*, *Juncus articulates*, *Carex flacca*, *Carex panacea*, *Potentilla anserina*, *Epilobium hirsutum* and *Ranunculus repens*. On drier patches *Centaurea nigra*, *Leucanthemum vulgare* and *Daucus carota*. 113_R1
HD1/GS1	n/a	Grassland species as described in this table. *Pteridium aquilinum*. 114_R2
WN2/ER2	*8240 (LPW_2a)	*Corylus avellana*, *Crataegus monogyna*, *Rosa spinosissima*, *Fragaria vesca*, *Viola* sp. *Rubus fruticosus* agg., *Neckera crispa*, *Rhytidiadelphus triquetrus*, *Ctenidium molluscum*, *Eurhynchium striatum*, *Thamnobryum alopecurum* and *Thuidium tamariscinum*. EC56 R6
WN2	*8240	*Corylus avellana, Crataegus monogyna, Ilex aquifolium, Eurhynchium striatum, Neckera complanata, Geranium robertianum, Thamnobryum alopecurum, Urtica dioica, Hedera helix s. hibernica, Poa* sp., *Fragaria vesca, Prunus spinosa, Rubus fruticosus* agg., *Thamnobryum alopecurum* 116_R1, 5491_R1 and 5338_R1
WN2	n/a	Similar to WN2/ER2, and with similar species, as well as the following: *Acer pseudoplatanus*, *Prunus spinosa*. Other ground flora species include *Arum maculatum*, *Circaea lutetiana* and *Hedera helix*. *Bryophyte cover <50% Thamnobryum alopecurum* and *Thuidium tamariscinum*. 116_R2
WS1	n/a	*Crataegus monogyna*, *Prunus spinosa*, *Ilex aquifolium*, *Sorbus hibernica*, *S. aucuparia*, *Rubus fruticosus* agg., *Corylus avellana*, *Acer pseudoplatanus*, *Ilex aquifolium*, *Salix caprea*, *Hedera helix*, *Lonicera periclymenum*, *Fragaria vesca*, *Pteridium aquilinum*, *Brachypodium sylvaticum*, *Fraxinus excelsior* and *Ulex europaeus*. 96_R1 and 114_R1

EC57

EC57 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
ED3	n/a	*Brassica rapa*, *Urtica dioica*, *Polygonum persicaria*, *Cirsium arvense*, *Potentilla anserina* and *Matricaria discoidea.*
GS1	n/a	*Cynosurus cristatus*, *Holcus lanatus*, *Poa pratensis*, *Cirsium arvense*, *Trifolium repens*, *T. Pratense*, *Rumex acetosa*, *Pteridium aquilinum* and *Prunus spinosa*. 137_R1 and 137_R2
	6210 (GS1_3A)	*Anthyllis vulneraria*, *Briza media*, *Danthonia decumbens*, *Anthoxanthum odoratum*, *Festuca rubra*, *Koeleria macrantha*, *Leontodon hispidus*, *Potentilla erect*, *Sesleria albicans*, *Carex caryophyllea*, *C. panacea*, *C. flacca*, *Antennaria dioica*, *Linum catharticum*, *Galium verum*, *Plantago maritima*, *Succisa pratensis*, *Centaurea nigra*, *Euphrasia* sp. *Polygala vulgaris*, *Prunella vulgaris* and *Lotus corniculatus*. EC57 R1 and EC57 R2
GS1	*6210 (GS1_3A)	Includes a small area of orchid rich grassland (Priority Annex I *6210). Includes the orchids *Dactylorhiza fuchsii*, *Platanthera bifolia* and *Listera ovata* and without the *Anthyllis vulneraria* listed above, plus *Molinia caerulea* and *Lathyrus linifolius.* EC57 R4
GS2	n/a	*Holcus lanatus*, *Poa pratensis*, *Lolium perenne*, *Dactylis glomerata*, *Rumex acetosa*, *Ranunculus repens* and *Cynosurus cristatus.*
WN2/ER2	*8240 (LPW_2a)	*Corylus avellana*, *Crataegus monogyna*, *Prunus spinosa*, *Fragaria vesca*, *Viola* sp., *Rubus fruticosus* agg., *Hedera helix*, *Lonicera periclymenum*, *Brachypodium sylvaticum*, *Arum maculatum*, *Circaea lutetiana*, *Geum urbanum*, *Phyllitis scolopendrium*, *Dryopteris filix-mas*, *Rhytidiadelphus triquetrus*, *Eurhynchium striatum*, *Thamnobryum alopecurum* and *Thuidium tamariscinum.* EC57 R3
WS1	n/a	*Prunus spinosa*, *Rubus fruticosus agg.*, *Pteridium aquilinum*, *Eurhynchium striatum*, *Kindbergia praelonga*, *Thuidium tamariscinum*, *Corylus avellana*, *Crataegus monogyna*, *Hedera helix s. hibernica* 140_R1, 144_R1 and 144_R2
WS1/ER2	n/a	*Prunus spinosa*, *Crataegus monogyna*, *Corylus avellana*, *Rubus fruticosus* agg., *Pteridium aquilinum*, *Hedera helix*, *Rosa spinosissima*, *Teucrium scorodonia*, *Solidago virgaurea*, *Brachypodium sylvaticum*, *Fragaria vesca*, *Lathyrus linifolius* and *Molinia caerulea.*
WS1/ER2	*8240	*Prunus spinosa*, *Corylus avellana*, *Fraxinus excelsior*, *Crataegus monogyna*, *Ulex europaeus*, *Rosa spinosissima*, *Rubus fruticosus* agg., *Pteridium aquilinum*, *Hedera helix*, *Teucrium scorodonia*, *Lonicera periclymenum*, *Solidago virgaurea*, *Sesleria albicans*, *Brachypodium sylvaticum*, *Fragaria vesca*, *Thymus praecox*, *Molinia caerulea*, *Ctenidium molluscum* and *Scleropodium purum*.

EC57 - Species Lists & Relevés		
Habitat code	**Annex I habitat**	**Key species**
		EC57 R5

Annex 2

Drawings

A2

Ecological Figures - Table of Contents

Annex 3

Habitat Survey Results - Digital Data Sets

A3

The digital datasets of the results of the 2019 Habitat Surveys are included in the attached DVD and include the following three sets of data.

A.3.1 Photo Dataset

The photo dataset contains a photographic record of the 2019 habitat surveys. This includes a series of photos recorded in 2019 habitat surveys along the route of the proposed road development. For each relevé it includes, at a minimum, one photo. Additionally there is a large selection of photos taken for all habitat types across the entire proposed road development.

The pdf file *N6GCRR_HabitatPhotographs_ReadMe.pdf* within the *N6GCRR_HabitatPhotographs.zip* photo dataset explains how the photos are filed and arranged.

A.3.2 Relevé Dataset

The relevé dataset contains the full results of all relevés taken between 2013 and 2019 in a Microsoft Excel Workbook. These relate to the following relevé shapefiles (which themselves are included as part of the GIS dataset as described in **Section A.3.3** below):

- N6GCRR_2018RelevéLocations.shp
- N6GCRR_RelevéLocations_3a.shp
- N6GCRR_RelevéLocations_3b.shp

The *N6GCRR_RelevéDatabase.xlsx* file includes a ReadMe tab providing information for users.

A.3.3 GIS Dataset

The GIS dataset contains 15 separate shapefiles which includes three which were used in the preparation of the habitat map published in the EIAR and 11 used to provide data in response to the RFI Resposne.