

Environmental Impact Assessment Report (EIAR)

Volume 6 of 6: Appendices

(Appendix 8.1) Parteen Basin Habitat Assessment

Document no: 32105801/EIARA8.1

Version: Final

December 2025

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Water Supply Project: Eastern and Midlands Region

Parteen Basin, Co. Tipperary



Final Report

July 2016

By

Wetland Surveys Ireland Limited

For

Tobin Consulting Engineers

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Annex 1: Relevé Data

1 Introduction

Wetland Surveys Ireland were commissioned by Tobin Consulting Engineers to undertake a botanical survey of lands (woodland) at Garrynatineel, Parteen, County Tipperary (labelled as RAW 2.1 and 2.2 in Figure 1 below) and lands (grasslands) at Cloonfadda to the south of Killaloe, County Clare (labelled as RAW 1.1 and 1.2 in Figure 1). The aim of the survey was to determine the ecological interest of the sites and in particular to assess any correspondence with habitats listed on Annex I of the EU Habitats Directive (EEC 1992).

The survey was undertaken by Dr Peter Foss, an experienced botanist, on the 17th of June 2016.

2 Methods

During the course of the survey habitats present at each site were classified according to Fossitt (2000) and where relevant according to Annex I of the EU Habitats Directive.

General survey target notes were recorded on a GPS enabled field computer running a GIS (Geographic Information System) software application (ESRI (Environmental Systems Research Institute) Collector for ArcGIS). These notes referred to features of interest within the site.

Where appropriate, representative vegetation quadrats (or relevés) were recorded. This represents a standard approach to vegetation description and analysis. Quadrats were recorded in a digital database (FileMaker Pro software application) running on a GPS enabled field computer. All plant species within the quadrat were recorded and cover abundance value applied. The Domin scale (Domin 1923) of cover abundance was used during the study as follows:

- + : 1 individual, no measureable cover
- 1: <4% cover, with few individuals
- 2: <4% cover, with several individuals
- 3: <4% cover, with many individuals
- 4: 4-10% cover
- 5: 11-25% cover
- 6: 26-33% cover
- 7: 34-50% cover
- 8: 51-75% cover
- 9: 76-90% cover
- 10: 91-100% cover

A range of physical attributes were also recorded within each quadrat (e.g. slope, aspects, grazing impacts, soil type, soil/peat depth, substrate stability, cover and height values for different plant groups, diameter at breast height (dbh) for trees etc.).

A photographic record of each quadrat was taken. Photographs were geotagged to facilitate their incorporation into a GIS. Additional photographs were also taken at regular intervals during the field survey to assist with subsequent interpretation and to record features in the wider landscape.

All vegetation quadrat data collected during the survey is presented as a series of quadrat reports in Annex 1. Additional detailed spatial data recorded during the survey has been submitted to Tobin Consulting Engineers in GIS format.

The National Roads Authority (NRA) Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA 2009) was used to inform an assessment of the biodiversity value of each site.

In order to inform a determination as to whether a habitat was of Annex quality or had any correspondence with Annex I habitats, the following references were consulted:

- A Guide to Habitats in Ireland, Fossitt (2000)
- National Survey of Native Woodlands, Perrin et al. (2008)
- The Irish semi-natural grasslands survey 2007-2012. Irish Wildlife Manuals, No. 78, O'Neill et al. (2013)
- The Status of EU Protected Habitats and Species in Ireland, NPWS (2013)
- Interpretation manual of European Union Habitats. Version EUR 28, European Commission (2013)



Figure 1: Map showing sites subject to survey.

3 Results

3.1 Site RAW2.2

The western part of Site RAW2.2 comprises a failed spruce conifer plantation with many windblown conifers and a regenerating scrub woodland of willow and hazel (Mixed broadleaved conifer woodland (WD2)). Numerous conifers survive in this area. The site has very poor ground flora and is subject to occasional sheep grazing.

This area was previously surveyed as part of the NPWS National Survey of Native Woodland (NSNW) (Perrin *et al.* (2008)). The site was mapped as Oak-ash-hazel woodland (WN2) following that survey. Based on the species composition currently present at the site, this classification is deemed incorrect for site RAW 2.2. The site lies within the Lower River Shannon SAC (NPWS Site Code: 002165) and is separated from the more natural Ash-hazel woodland (WN2) to the north by a damaged barbed wire fence, although the fence continues to keep sheep out of the better northern woodland area. Despite the designated status of the site, the woodland habitat itself is of low ecological value due to past conifer planting and associated effects of same, and does not qualify as 91E0 Alluvial Woodland. The adjacent woodland to east is a dense mature spruce plantation of low value.

Data from a vegetation relevé recorded from this site is presented in Annex 1. Further data in the form of survey target notes has been submitted to the client in GIS format.

In conclusion, the woodland habitat is located within the Lower River Shannon SAC and therefore according to the NRA (2009) can be deemed to be of international conservation importance. However, the woodland does not correspond with any EU Annex I habitat and comprises modified mixed broadleaved conifer woodland of low ecological interest.

3.2 Site RAW2.1

Site RAW2.1 (and the area between the two possible extraction areas, north of the fence point) is an area of mature ash and hazel woodland (WN2). The woodland has a very diverse and natural ground and moss flora, with some low lying damp areas. Old field boundaries occur within the woodland, many with badger setts. This WN2 area was rated as being of moderate woodland value by NSNW (Perrin et al. 2008).

This area is of higher ecological value than the alternative site RAW2.2 described in the previous section. There is also a significant rise of some 6-8 m in the land at the eastern end of the woodland area. The woodland is of moderate to high ecological value. It was defined as WN2, non-Annex by the NSNW (Perrin *et al.* (2008), although in parts it may have some affinities with the EU 91E0 Alluvial woodland habitat type, but for the dominance of hazel and the lack of alder.

Data from a vegetation relevé recorded from this site is presented in Annex 1. Further data in the form of survey target notes has been submitted to the client in GIS format.

In conclusion, the semi-natural woodland habitat present at the site is located within the Lower River Shannon SAC and therefore according to the NRA (2009) is part of a site deemed to be of international conservation importance. The woodland has no direct correspondence with any EU Annex I habitat although has some affinities to the EU 91E0 Alluvial woodland habitat type.

3.3 Sites RAW1.1 and RAW1.2

These grassland sites occur on the western side of the River Shannon (see RAW 1.1 and 1.2 in Figure 1 above) in the townland of Cloonfadda. Site RAW 1.1 is located entirely within the Lower River Shannon SAC while RAW 1.2 is partly located within the SAC. All of the agricultural fields were dominated by partially improved wet grassland that were grazed by cattle. Some fields were recently topped and the grassland exhibited signs of past reseeding and fertilisation. These grassland areas were considered to be of low ecological value and have no correspondence with EU Annex I habitats.

In conclusion, the semi-natural woodland habitat present at the site is located within the Lower River Shannon SAC and therefore according to the NRA (2009) is part of a site deemed to be of international conservation importance. The grassland itself is of low ecological value corresponding with improved agricultural wet grassland.

Further data relating to these fields has been submitted to the client in GIS format.

4 References

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Annex 1 – Relevé Data

Quadrat Description

Water abstraction location: RWA2.2. Area on central pipeline route beside lake. Mixed deciduous conifer woodland with standing and fallen spruce (WD2). Appears to be a failed conifer plantation, with wind thrown conifers and secondary hazel / willow scrub regeneration. No evidence of flooding. Some sheep grazing seen in past by previous survey teams. No tree seedling regeneration. Some evidence of ditching associated with past spruce planting. Mosses mainly on fallen dead timber. Many spruce have fallen over. Some rubble dumped in area. Rocks protruding in parts. Ash and spruce dominant trees, hazel and willow understory. Poorly developed woodland ground flora.

Habitat Type

WD2 Mixed broadleaved/conifer woodland

EU Habitat Quality

The habitat present on site does not correspond to EU habitat type.



Quadrat Number: 1

Photograph Numbers

samsung and GIS collector

Approx Location

Latitude = 52.781934 (north)

Longitude = -8.445065 (west)

Survey Date 17/06/2016

Surveyors

Peter Foss

Substrate Type Mineral Soil

Stability Very firm

Substrate Depth na

Slope Degrees flat

Aspect NA

Water Table Depth cm Below surface
Comments on Hydrology No evidence of inundation from lake.

Quadrat Management None
Adjacent Landuse Reservoir
Grazing Comments Area grazed by sheep

General Faunal Observations
 none

Structure Quadrat Cover Values %

Total Vegetation cover	95	Litter cover	75
Tree cover	45	Algae cover	0
Shrub cover	60	Rock cover	5
Herb Grass cover	60	Bare peat / Soil cover	<5
Bryophyte cover	65	Open Water cover	0

Height of vegetation cm	20 m	Height Shrub layer cm	10 m
Height Tree layer cm	15-20 m	Height Herb layer cm	50

Species Latin Name	Species English Name	Species cover (Domin)
<i>Angelica sylvestris</i>	Wild Angelica	1
<i>Blechnum spicant</i>	Hard-fern	1
<i>Brachythecium rutabulum</i>	Moss	4
<i>Carex remota</i>	Remote Sedge	3
<i>Circaea lutetiana</i>	Enchanter's-nightshade	4
<i>Corylus avellana</i>	Hazel	6
<i>Dactylis glomerata</i>	Cock's-foot	2
<i>Deschampsia cespitosa</i>	Tufted Hair-grass	2
<i>Digitalis purpurea</i>	Foxglove	3
<i>Dryopteris affinis</i>	Scaly Male-fern	3
<i>Dryopteris dilatata</i>	Broad Buckler-fern	3
<i>Equisetum arvense</i>	Field Horsetail	2
<i>Eurhynchium striatum</i>	Common striated feather moss	3
<i>Fissidens</i> sp.	Moss	3
<i>Fraxinus excelsior</i>	Ash	4
<i>Geranium robertianum</i>	Herb-Robert	2
<i>Hedera helix</i>	Ivy	3
<i>Hypericum androsaemum</i>	Tutsan	2
<i>Lonicera periclymenum</i>	Honeysuckle	3
<i>Lysimachia nemorum</i>	Yellow Pimpernel	1
<i>Pellia epiphylla</i>	Liverwort	2
<i>Picea sitchensis</i>	Sitka Spruce	6
<i>Polystichum setiferum</i>	Soft Shield-fern	3
<i>Polytrichastrum formosum</i>	Wood Haircap	3
<i>Prunus spinosa</i>	Blackthorn	3
<i>Rubus fruticosus</i> agg.	Blackberry	4
<i>Thuidium tamariscinum</i>	Moss	4

Quadrat Description

Water abstraction location: RWA2.1. Ash hazel woodland with wet hollow and dry areas (WN2). Good tree regeneration of ash and holly in ground layer. No evidence of grazing, although 1 set of deer prints found within quadrat. Wetter bare hollows with bare organic or mud base occur throughout the woodland. Few wetland plants present. Adjacent low elevated ridges occur to 20-30 cm higher than the damp hollows, with good woodland moss, herb and bramble/ivy cover. Ash tree dbh to 50 cm, hazel to 35cm. Badger set 10 m away from quadrat on earth bank. Well developed woodland ground flora.

Habitat Type

WN2 Oak-ash-hazel woodland

EU Habitat Quality

The habitat present on site does not correspond to EU habitat type.



Quadrat Number: 2

Photograph Numbers

samsung and GIS collector

Approx Location

Latitude = 52.784512 (north)

Longitude = -8.442409 (west)

Survey Date 17/06/2016

Surveyors

Peter Foss

Substrate Type Mineral

Stability Firm

Substrate Depth 20cm in

Slope Degrees Level

Aspect NA

Water Table Depth cm	Below surface in
Comments on Hydrology	Probably localised impeded drainage in hollows during winter, but no evidence of inundation from lake.

Quadrat Management	None
Adjacent Landuse	Forestry - broadleaved and conifers (to the east)
Grazing Comments	No evidence of grazing

General Faunal Observations

Deer possibly Sika, Badger.

Structure Quadrat Cover Values %

Total Vegetation cover	100	Litter cover	10
Tree cover	65	Algae cover	0
Shrub cover	75	Rock cover	0
Herb Grass cover	20	Bare peat / Soil cover	25
Bryophyte cover	60	Open Water cover	0

Height of vegetation cm	20 m	Height Shrub layer cm	12 m
Height Tree layer cm	20 m	Height Herb layer cm	to 100

Species Latin Name	Species English Name	Species cover (Domin)
<i>Arum maculatum</i>	Lords-and-Ladies	2
<i>Asplenium scolopendrium</i>	Hart's-tongue Fern	1
<i>Brachythecium rutabulum</i>	Moss	5
<i>Caltha palustris</i>	Marsh-marigold	1
<i>Carex remota</i>	Remote Sedge	3
<i>Chrysosplenium oppositifolium</i>	Opposite-leaved Golden-saxifrage	3
<i>Circaea lutetiana</i>	Enchanter's-nightshade	3
<i>Corylus avellana</i>	Hazel	8
<i>Crataegus monogyna</i>	Hawthorn	4
<i>Dryopteris affinis</i>	Scaly Male-fern	3
<i>Dryopteris dilatata</i>	Broad Buckler-fern	3
<i>Eurhynchium striatum</i>	Common striated feather moss	5
<i>Fraxinus excelsior</i>	Ash	8
<i>Geum urbanum</i>	Wood Avens	3
<i>Hedera helix</i>	Ivy	5
<i>Ilex aquifolium</i>	Holly	4
<i>Isoetium myosuroides</i>	Moss	4
<i>Kindbergia praelonga</i>	Common feather moss	4
<i>Listera ovata</i>	Common Twayblade	2
<i>Lonicera periclymenum</i>	Honeysuckle	4
<i>Mnium hornum</i>	Moss	3
<i>Polypodium vulgare</i>	Polypody	2
<i>Polystichum setiferum</i>	Soft Shield-fern	3
<i>Potentilla sterilis</i>	Barren Strawberry	3
<i>Prunus spinosa</i>	Blackthorn	3
<i>Rubus fruticosus</i> agg.	Blackberry	5
<i>Sanicula europaea</i>	Sanicle	3
<i>Thuidium tamariscinum</i>	Moss	5
<i>Viola riviniana</i>	Common Dog-violet	3