

Environmental Impact Assessment Report (EIAR)

Volume 6 of 6: Appendices

(Appendix 8.3) Site Description of Coagh Upper Fen, County Offaly

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Water Supply Project: Eastern and Midlands Region

Coagh Upper Fen, Offaly



Revised Final Report

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By

Wetland Surveys Ireland Limited

For

Tobin Consulting Engineers

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1 Introduction

Wetland Surveys Ireland were commissioned by Tobin Consulting Engineers to undertake a botanical survey of Coagh Upper Fen (Grid Ref 215532 207562), Coagh Upper, Co. Offaly. The aim of the survey was to determine the ecological interest of the site and in particular to assess any correspondence with habitats listed on Annex I of the EU Habitats Directive (EEC 1992). The site was surveyed by Dr Peter Foss and Mr Brendan Kirwan on the 8th of June 2016.

2 Methods

During the course of the survey habitats present at the 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 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 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 I. 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)
- 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) National Fen Survey Manual (2008). Methodology to be used in a National Survey of Fen Habitats in Ireland, (Foss and Crushell 2008).

2.1 Survey Constraints

Although early in the season *Juncus acutiflorus* was reasonably confidently identified, there is a small chance that some of the material on the site could be *Juncus subnodulosus* which would add to the interest of the site. A visit in August during the flowering time of *J. subnodulosus* would help clarify the matter.

3 Results

3.1 Site Description

This small wetland area occurs at the base of a ridge and has not been fenced off from the adjoining pasture where sheep, cattle and horses graze. A drainage ditch runs along the south eastern edge of the wetland. The drainage ditch has a narrow broken hedgerow / treeline dominated by Ash, Willow and Hawthorn along the edge and is fenced with barbed wire. The wetland areas within the site consist of four habitat parcels as labeled in Figure 1.



Figure 1: Maps showing the four habitat compartments as described in text.

3.1.1 Area 1

An area of species rich wet grassland occurs in the west. This area appears to be a degraded wetland area which has been affected by drainage and is being invaded in parts by gorse (*Ulex europaeus*) scrub. The grassland occurs on mineral soil and cattle poaching is evident. Wetland species present in this area include *Juncus effusus*, *J. inflexus*, *Carex nigra*, *C. panicea*, *Mentha aquatica*, *Ranunculus flammula*, *Anthoxanthum odoratum*, *Festuca rubra*, *Cirsium palustre*, *Calliargon cuspidatum*, *Poa pratensis*, *Carex hirta*, *Equisetum palustre* and *Cardamine pratensis*. The area appears to have suffered effects of drainage as evidenced by the invasion of gorse. See Plate 1.

3.1.2 Area 2

An area of old willow scrub occurs in the centre which is accessed and poached by cattle. Again the wooded area occurs on mineral soil. Trees are old, and show evidence of past woodland clearance/ or coppicing, with some trees emerging from larger cut basal stumps. The main tree species present are Goat Willow, Hazel, Hawthorn, Ash, Elm, Holly, Elder and Oak. The ground flora is poorly developed due to trampling and erosion caused by cattle and extensive areas of bare soil occur. Ground flora includes: *Urtica dioica*, *Geranium robertianum*, *Circaea lutetiana*, *Arum maculatum*, *Primula veris*, *Ranunculus ficaria*, *Taraxacum officinale*, *Hedera helix* and *Blechnum spicant*, together with a few grasses and weed species. This area is of low to moderate ecological value. No regeneration of trees was noted with most specimens being old and moribund. This area appears to have been affected by past drainage. Odd earth mounds occur throughout the area. See Plate 2.

3.1.3 Area 3

This area comprises species rich wet grassland, probably degraded fen, with no evidence of grazing. No poaching was observed here. Grass dominated area with *Holcus lanatus*, *Festuca rubra*, *Poa pratensis*, *Cynosurus cristatus* and *Anthoxanthum odoratum*. Wetland species present include *Succisa pratensis*, *Carex panicea*, *Calliargon cuspidatum*, *Cardamine pratensis*, *Dactylorhiza fuchsii*, *Juncus effusus*, *Mentha aquatica*, *Cirsium palustre*, *J. conglomeratus*, and *J. acutiflorus*. This area is separated from the adjoining Schoenus fen to the east by a newly installed barbed wire fence. See Plate 3.

3.1.4 Area 4

This alkaline fen area dominated by *Schoenus nigricans* occurs at the eastern end of the wetland. It occurs in a level area at the base of the sloping ridge, which is dominated by an improved grassland field to the north-west. No inflow stream to the wetland was detected, indicating that it is probably spring fen. The soil under the fen is composed of a thin peat layer with mineral soil with calcareous tufa deposits in some areas. During the site visit the surface was relatively dry under foot, at the edge of the fen, with increased humidity detected towards the centre, especially at the base of the large *Schoenus* tussocks. ("Dryness" may in part be an effect of the recent dry weather spell).

The area can be accessed by horses and sheep (grazing the adjacent field during the site visit) as there is no fence to prevent access. However, there is minimal evidence of poaching or grazing. At the eastern end *Schoenus nigricans* occurs as large tussocks, up to 75 cm tall, with wet peat areas between, which showed evidence of

being wetter in the recent past. These wetter intervening hollows were moss rich and showed evidence of tufa deposits on mosses and leaf litter material.

The area was approx. 100 x 30 m in extent with scattered gorse scrub patches between the fen and the adjacent grazed improved grassland.

The edge of the fen occurs 100 m downslope of the central pipeline route. A hydrological investigation is recommended to see what effects planned works might have on the water supply to this EU annex habitat.

The Schoenus fen qualifies as Annex 1 Alkaline Fen (7230) as defined by the EU habitats directive. See Plates 4-8.

Succisa pratensis, the food plant of Marsh Fritillary butterfly is common on the site. The survey coincided with the period when adults would be on the wing, however no adults were observed. A survey of this site is recommended in September when larval webs of this species would be present.

Relevé data collected from this area is presented in Annex I.

3.2 Schoenus fen Species list

Anthoxanthum odoratum

Briza media

Brachytecium rutabulum

Calliergonella cuspidata

**Campylium stellatum*

Cardamine pratensis

Carex flacca

Carex hostiana

Carex lepidocarpa

Carex nigra

Carex panicea

Carex pulicaris

Centaurea nigra

Cerastium fontanum

Cirsium palustre

**Ctenidium molluscum*

Dactylorhiza fuchsii

Dactylorhiza majalis subsp. *traunsteinerioides* (confirmed by Dr Tom Curtis 13.6.2016, 6 individual plants recorded).

Equisetum palustre
Festuca rubra
Filipendula ulmaria
Fraxinus excelsior (saplings)
Galium palustre
Holcus lanatus
Juncus acutiflorus
Juncus conglomeratus
Juncus effusus
Kindbergia praelonga
Lathyrus pratensis
Lotus pedunculatus
Luzula campestris
Mentha aquatica
Molinia caerulea
Pinguicula vulgaris
Polygala serpyllifolia
Potentilla erecta
Prunella vulgaris
Pseudoscleropodium purum
Ranunculus flammula
Ranunculus repens
Salix cinerea subsp. *Oleifolia*
Schoenus nigricans
**Scorpidium cossonii*
Succisa pratensis
Trifolium repens (red)
Ulex europaeus
Vicia cracca

(species in blue confirmed identification by Joanne Denyer 18/7/2016. Species with * prefix are calcicoles and typical of fens).

3.3 Incidental Faunal Records

Nursery Web spider (*Pisaura mirabilis*) x2
Orange Tip butterfly x3
Frog x1
Six spot Burnet pupae x3
Caddis fly
Crab Spider (*Xysticus cristatus*) * restricted Irish distribution on the NBDC
Latticed Heath Moth (*Chiasmia clathrata*)

Further data (including bird records) have been submitted in GIS format.

4 Evaluation

The site at Coagh Upper is deemed to be of high local importance on the basis that it supports a small area of Alkaline Fen, a habitat listed on Annex I of the EU Habitats Directive [EU habitat code: 7130].

5 References

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Annex I – Relevé Data

Schoenus fen relevé (using DAFOR scale of abundance):

Relevé size: 2x2m.

Vegetation height to 1.5 m (mainly Schoenus on tussocks). DAFOR Scale.

Total cover 100%

Grasses sedges 75%

Herbs 15%

Litter 50%

Mosses 50% (mainly in the hollows and bases of tussocks)

Schoenus nigricans D

Mentha aquatica O

Potentilla erecta O

Molinia caerulea F

Briza media R

Succisa pratensis R

Juncus effusus R

Juncus acutiflorus F

Carex panicea O

Carex hostiana O

Cirsium palustre R

Equisetum palustre O

Festuca rubra F

Calliergonella cuspidata F

Campylium stellatum F

Ctenidium molluscum F

Vicia cracca R

Carex pulicaris R

Carex flacca R

Holcus lanatus F

Annex II – Plates



Plate 1: Area 1, western wet grassland with gorse encroachment.



Plate 2: Area 2, woodland



Plate 3: Area 3, central Wet grassland / degraded fen



Plate 4: Area 4, eastern Schoenus fen



Plate 5: Fen mosses and tufa deposits



Plate 6: tufa deposits.



Plate 7: *Schoenus* tussocks.



Plate 8: *Dactylorhiza majalis* subsp. *traunsteinerioides* in *Schoenus* fen area.