



Baseline Ecological Survey

for

Strawhall Woods, Carlow, Co. Carlow

by



August 2023

Report #2023026



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1.0 Introduction

BioLogiQ Solutions was requested to carry out a baseline ecological survey for Strawhall Woods on the Athy Road, Carlow, Co. Carlow. This was done using publicly available information from the NPWS, GSI, EPA Maps and Catchments websites and a site visit on 10th June 2023.

2.0 Identification of relevant Natura 2000 sites

2.1 Designated sites in the vicinity of the project

The Barrow River_160 flows about 500 metres to the west of the site at the closest point and the boundary of the Barrow River (Special Area of Conservation (SAC)) is just over 400 metres distant (see Figure 1).



Figure 1. Location of Strawhall Woods (green trees) with respect to Barrow_160 River and the River Barrow SAC (marked in brown to left of image).

2.2 Characteristics of the River Barrow & River Nore SAC 002162

Site Name: River Barrow & River Nore SAC⁴

Site Code: 002162



Description: This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The upper reaches of the Barrow runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, runs over intrusive rocks poor in silica.

Qualifying interests: The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Sea Lamprey (*Petromyzon marinus*), River Lamprey, (*Lampetra fluviatilis*), Brook Lamprey (*Lampetra planeri*), Freshwater Pearl Mussel (*Margaritifera margaritifera*), Nore Freshwater Pearl Mussel (*Margaritifera m. durrovensis*), Freshwater crayfish (*Austropotamobius pallipes*), Twaite Shad (*Alosa fallax fallax*), Atlantic Salmon (*Salmo salar*), Otter (*Lutra lutra*), Desmoulin's Whorl Snail (*Vertigo moulinsiana*) and the Killarney Fern (*Trichomanes speciosum*).

Notable features (near development): n/a

Conservation objectives: These are as follows:⁵

- To maintain or restore the favourable conservation status of the Annex I habitats and Annex II species of community interest listed above.
- To maintain the extent, species richness and biodiversity of the entire site.
- To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Conservation objectives for qualifying interests:^{5,6}

In addition, lamprey species (*Petromyzon fluviatilis*, *Lampetra planeri* and *L. fluviatilis*),⁶ Atlantic salmon (*Salmo salar*) and Otter (*Lutra lutra*) are assumed to be present in this section of the river.



3.0 Desktop Survey

3.1 Desktop survey

The 'Catchments' website which supports the River Basin Management Plan documentation in relation to Ireland's River Basin Districts was consulted to establish the water quality for the Barrow River_160 (WaterBody Code: IE_SE_14B012460).

The full report⁷ details that at the time of surveying the Barrow had 'Moderate' water quality (out of five status classes: High, Good, Moderate, Poor, Bad) based on its ecological status. These classes correspond to the Q-rating system which would give it a Q₃ rating. It is also highlighted as being '1a At Risk' with an overall objective is to 'Restore' its water quality to 'Good' (Q₄) status.

The earliest historical maps for Straw Hall (see Figures 2 & 3) show that the southern part of the woods have been under tree cover since then indicating that this is a long established woodland (LEW, that is continuously wooded since 1830) and maybe a remnant of possible ancient woodland (PAW), that is, a stand which has been continuously wooded since 1660.



Figure 2. Straw Hall Woods illustrated on 1st edition 6 inch maps (1829-1842).

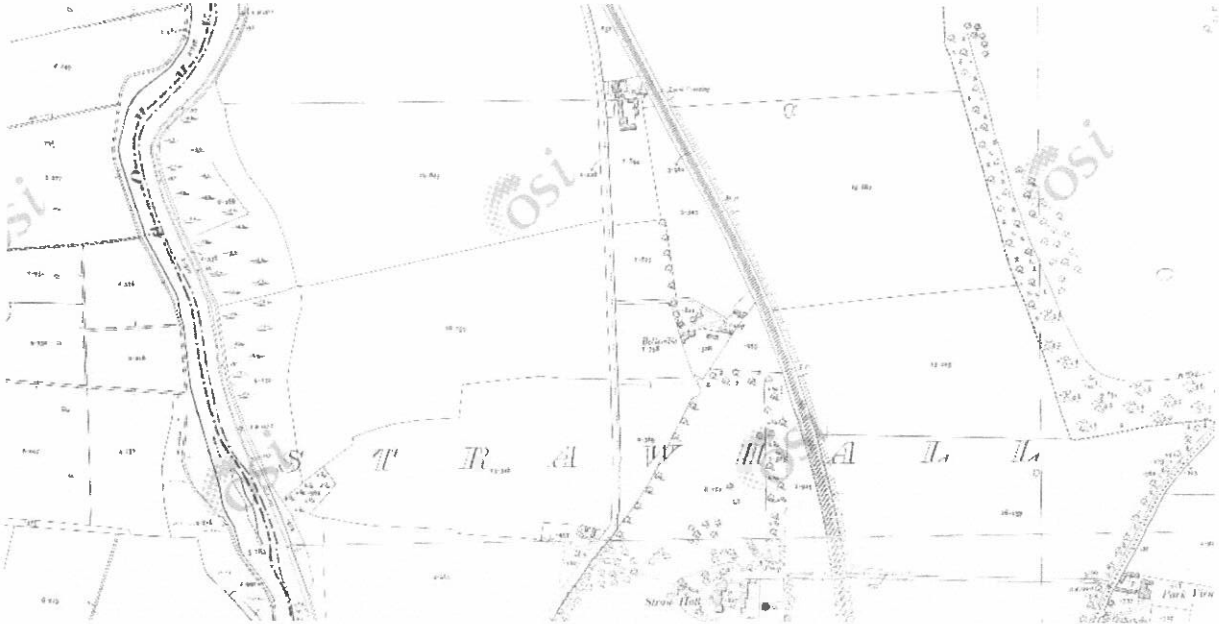


Figure 3. Straw Hall Woods illustrated on 25 inch maps (start of 20th century).



Figure 4. Satellite image of Straw Hall Woods.



3.2 Field survey and findings

3.2.1 Overview of habitats

GSI online mapping indicates that the soil is 'Fine loamy drift with limestones' over 'Viscan limestone' bedrock. The site is classed as being a Regionally Important Aquifer - Karstified (diffuse) and as having a High (H) groundwater vulnerability.

A site walk-over was carried out on 10th June 2023 to identify species found onsite. Using the Fossitt⁸ classification scheme the site is a mixture of meadow species of 'Dry meadow & grassy verges' (GS2), scrub (WS1) and mixed broadleaved/conifer woodland (WD2) with indicators of oak-ash-hazel woodland (WN2). The wooded areas have a significant ornamental component due to the plantings that have taken place onsite.

3.2.2 GS4 Dry meadow

The site includes a number of open spaces between the wooded areas with dry meadow (GS2) (see Figure 5(a)) including at the main entry point from the Athy Road and several locations to the south of this. Graminoid species present include abundant false oat-grass (*Arrhenatherium elatius*) and cock's-foot (*Dactylis glomerata*) as well as mat-grass (*Nardus stricta*), meadow brome (*Bromus commutatus*), smooth meadow-grass (*Poa pratensis*), timothy grass (*Phleum pratense*), Yorkshire fog (*Holcus lanatus*) and field wood-rush (*Luzula campestris*).

Herbaceous species include black knapweed (*Centaurea nigra*), bush vetch (*Vicia sepium*), cowslip (*Primula veris*), common hogweed (*Heracleum sphondylium*), common sorrel (*Rumex acetosa*), creeping buttercup (*Ranunculus repens*), creeping thistle (*Cirsium arvense*), creeping cinquefoil (*Potentilla reptans*), dandelion (*Taraxacum officinale* agg.), germander speedwell (*Veronica chamaedrys*), lesser stitchwort (*Stellaria graminea*), meadow vetchling (*Lathyrus pratensis*), nettle (*Urtica dioica*), red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*) and willowherb (*Epilobium* sp.) as well as field horsetail (*Equisetum arvense*). Rough-stalked feather-moss (*Brachythecium rutabulum*) and big shaggy-moss (*Rhytidiadelphus triquetrus*) are abundant in the bryophyte layer of these meadows.

The largest meadow area in the middle of the site is composed of cock's-foot, false oat-grass, mat-grass, and smooth meadow-grass with Yorkshire fog and field wood-rush with bush vetch, creeping buttercup, meadow buttercup (*Ranunculus acris*), germander speedwell and a stand of lesser stitchwort with birdsfoot trefoil (*Lotus corniculatus*), bush vetch, common vetch (*Vicia sativa*) and meadow vetchling.

Imperforate St. John's wort (*Hypericum maculatum* agg.) is found in the grassed areas to the north of the site.

Occasional tree saplings (hawthorn (*Crataegus monogyna*), oak (*Quercus* sp.), walnut (*Juglans regia*) etc.) and shrubs (field rose - *Rosa arvensis*) are scattered through the meadow areas as well as early stage scrub of briar and drifts of nettles.



Figure 5(a). Line of birch and large cypress backing dry meadow area (top left); (b) mature beech stand with ivy herb layer (top right); (c) specimen oak (bottom left); (d) Japanese knotweed by railway track (bottom right).

3.3.3 WD2 Mixed broadleaved / conifer woodland

The wooded areas are composed of stands of mature trees interspersed with planted groves. Mature tree stands include large specimens of ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*) (see Figure 5(b)), horse chestnut (*Aesculus hippocastanum*), Monterrey cypress (*Cupressus macrocarpa*), pedunculate oak (*Quercus robur*) (see Figure 5(c)), Scots pine (*Pinus sylvestris*), sycamore (*Acer pseudoplatanus*) and Sitka spruce (*Picea sitchensis*).

Other species present include black poplar (*Populus nigra*), copper beech, field maple (*Acer campestre*), hornbeam (*Carpinus betulus*), Japanese larch (*Larix kaempferi*), Lawson's cypress (*Chamaecyparis lawsoniana*), plane (*Platanus* sp.), sweet chestnut (*Castanea sativa*), pin oak (*Quercus palustris*), red horse chestnut (*Aesculus x carnea*) and sumach (*Rhus* sp.).

The planted groves include beech, horse chestnut, large apple trees (*Malus domestica*), maple (*Acer* sp.), walnut, whitebeam, sycamore and oak and there are also lines of lime (*Tilia* sp.), whitebeam (*Sorbus aria*), sycamore, maples (*Acer* sp.) and spruce.

Native trees include silver birch (*Betula pendula*), field elm (*Ulmus minor*), elder (*Sambucus nigra*), goat



willow (*Salix caprea*), grey willow (*Salix cinerea* ssp. *oleifolia*), hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*) and rowan (*Sorbus aucuparia*).

Native shrubs include dog rose (*Rosa canina* agg.), field rose and gorse and non-native shrubs include cherry laurel (*Prunus laurocerasus*) and garden privet (*Ligustrum ovalifolium*).

The herbaceous layer includes false oat-grass and mat-grass and the herbaceous species bluebell (*Hyacinthoides non-scripta*), butterbur (*Petasites hybridus*), cleavers (*Galium aparine*), common hogweed, cow parsley (*Anthriscus sylvestris*), cuckoo pint (*Arum maculatum*), curled dock, dog violet (*Viola* sp.), germander speedwell, hedge bindweed (*Calystegia sepium*), herb bennet (*Geum urbanum*), herb Robert (*Geranium robertianum*), meadow buttercup, meadow vetchling, Monbrietia (*Crocasmia x crocosmiflora*), nipplewort (*Lapsana communis*), primrose (*Primula vulgaris*), ramsons (*Allium ursinum*) and wild raspberry (*Rubus idaeus*). Soft shield fern (*Polystichum setiferum*) and field horsetail are also present.

In areas of heavier shading there are extensive areas where ivy forms the herbaceous layer and there are occasional drifts of briars and nettles.

There is a stagshhead beech with bracket fungus and wood-ear fungus on elder branches (*Auricularia auricula-judae*).

3.3.4 WS1 Scrub

Scrub is found across the site at the interface between the meadow and wooded areas with briar and shrubs such as field rose and gorse with willow and sycamore in places. An area of waste ground by the railway track includes the shrubs, flowering currant (*Ribes sanguineus*) and gorse with ivy as well as typical herbaceous species of waste ground including couch-grass (*Elymus repens*) and the scarce creeping soft-grass (*Holcus mollis*) with the herbs cleavers, creeping buttercup, goatsbeard (*Tragopogon pratensis*), nettle, prickly sow-thistle (*Sonchus asper*), ragwort (*Senecio jacobea*), stands of rosebay willowherb (*Epilobium angustifolium*) and willowherb as well as the meadow species germander speedwell and imperforate St. John's wort. Also present is the invasive Japanese knotweed (*Fallopia japonica*) (see Figure 5(d)). Typical woodland species are found on the edges of the area including herb bennet and tutsan (*Hypericum androsaemum*).

3.3.5 Fauna

There is a badger sett onsite (*Meles meles*) and abundant habitat and roosting sites for bats. Birds recorded included blackbird (*Turdus merula*), blue tit (*Parus caeruleus*), chiffchaff (*Phylloscopus collybita*), great tit (*Parus major*), jay (*Garrulus glandarius*), rook (*Corvus frugilegus*) and wren (*Troglodytes troglodytes*).

Speckled wood butterfly (*Pararge aegeria*) is widespread throughout the site and Meadow brown (*Maniola jurtina*) is found in the meadow area along with the day-flying Cinnabar moth (*Tyria jacobaeae*). Hoverfly are plentiful including and there were occasional large dragonfly hunting across the meadow areas. The Common red soldier beetle (*Rhagonycha fulva*) can be observed feeding on flowers of common hogweed and yellow meadow ants (*Lasius flavus*) are common in the second meadow.

3.4 Summary of findings

A total of 85 plant species was recorded for the site which included 39 flower species, 10 species of grasses and woodrush and 29 tree and 5 shrub species. There was one mammal, 7 bird species and 7 insect species recorded.

The site which is just under 5 hectares and although it has no species of conservation interest it constitutes an



ecologically valuable area of mixed, predominantly deciduous woodland with many fine specimen trees.

With its mix of semi-native woodland and excellent specimens of non-native trees the site has characteristics of public gardens, however, the mixed broadleaved/conifer woodland (WD2) possesses indicators of oak-ash-hazel woodland (WN2), albeit without any hazel present. Characteristic species of this type of woodland include bluebell, cuckoo pint, dog violet, herb bennet, tutsan, wild garlic and soft shield fern.

These species are found to the south of the site which have been wooded areas since the earliest maps, confirming that the remainder of the woods to the north of these are of more recent origin as the herbaceous species have not yet had time to spread into these areas.



4.0 References

1. NPWS. 2015. Site Synopsis River Barrow & River Nore Valley SAC. <http://www.npws.ie/media/npwsie/content/images/protectedsites/sitesynopsis/SY002162.pdf>
2. NPWS. 2011. Conservation Objectives River Barrow & River Nore SAC 000781. <http://www.npws.ie/media/npwsie/content/images/protectedsites/conservationobjectives/CO002162.pdf>
3. Central Fisheries Board. 2005. The status and distribution of lamprey in the River Barrow SAC. Irish Wildlife Manuals No. 21.
4. NPWS. 2019. The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments.
5. Catchments.ie. 2023. Full Report for Barrow, Trib of Barrow IE_SE_14B012460 https://www.catchments.ie/data/?_gl=1*19xywoy*_ga*MTEzMzQ2NDI2NS4xNjkwMzcxNjcy*_ga_TPK2CK9KEX*MTY5MzAzODA3Ni4yNy4wLjE2OTMwMzgwNzYuMC4wLjA.#/waterbody/IE_SE_14B012460?k=xp8q25.
6. Fossitt, J.A. 2000. A Guide to Habitats in Ireland. Heritage Council of Ireland, Dublin.



| <i>Qualifying interests</i> | <i>Location in the Natura 2000 site relative to Application Site</i> | <i>Potential for impacts from the development</i> | <i>Screened in / out</i> |
|--|--|---|--------------------------|
| SPECIES | | | |
| Sea lamprey (n2K species code [1096]) | Barrow River_200 (main channel) | N/a | Out |
| River lamprey (<i>Lampetra planeri</i>) (n2K species code [1099]) | Burren_20 | Silt, dust, concrete water, fuels and oils can impact water bodies as can malfunctioning wastewater treatment systems but the works will be sited over 10 metres away from the Burren_020 and the tailored WWTS subject to an annual maintenance contract | In |
| Brook lamprey (<i>Lampetra fluviatilis</i>) (n2K species code [1096]) | Burren_20 | Silt, dust, concrete water, fuels and oils can impact water bodies as can malfunctioning wastewater treatment systems but the works will be sited over 10 metres away from the Burren_020 and the tailored WWTS subject to an annual maintenance contract | In |
| Atlantic salmon (<i>Salmo salar</i>) (n2K species code [1106]) | Burren_20 | Silt, dust, concrete water, fuels and oils can impact water bodies as can malfunctioning wastewater treatment systems but the works will be sited over 10 metres away from the Burren_020 and the tailored WWTS subject to an annual maintenance contract | In |
| Otter (<i>Lutra lutra</i>) (n2K species code [1355]) | Burren_20 | Silt, dust, concrete water, fuels and oils can impact water bodies as can malfunctioning wastewater treatment systems but the works will be sited over 10 metres away from the Burren_020 and the tailored WWTS subject to an annual maintenance contract | In |
| White-clawed crayfish (<i>Austropotamobius pallipes</i>) (n2K species code [1092]) | Burren_020 (although believed to be now absent due to crayfish plague) | Silt, dust, concrete water, fuels and oils can impact water bodies as can malfunctioning wastewater treatment systems but the works will be sited over 10 metres away from the Burren_020 and the tailored WWTS subject to an annual maintenance contract | In |
| Twaite shad (<i>Alosa fallax</i>) (n2K species code [1103]) | No shad recorded above St. Mullins | N/a | Out |
| Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) (n2K species code [1016]) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) (n2K species code [1029]) | No sites on Barrow River | N/a | Out |
| Nore freshwater pearl mussel (<i>Margaritifera durrovensis</i>) (n2K species code [1990]) | No sites on Barrow River | N/a | Out |
| Killarney Fern (<i>Trichomanes speciosum</i>) (n2K species code [1103]) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| HABITATS | | | |



| | | | |
|--|--|-----|-----|
| Alluvial woodland (n2K habitat code 91E0)* | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Hydrophilous tall herb communities (n2K habitat code 6430) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Floating river vegetation (n2K habitat code 3260) | Burren_030 | N/a | Out |
| Dry heath (n2K habitat code 4030) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Petrifying springs* (n2K habitat code 7220) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Old oak woodlands (n2K habitat code 91A0) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Estuaries (n2K habitat code 1130) | >15km downstream of site | N/a | Out |
| Tidal mudflats and sandflats (n2K habitat code 1140) | >15km downstream of site | N/a | Out |
| Reefs (n2K habitat code 1170) | >15km downstream of site | N/a | Out |
| <i>Salicornia</i> mud (n2K habitat code 1310) | >15km downstream of site | N/a | Out |
| Atlantic salt meadows (n2K habitat code 1330) | >15km downstream of site | N/a | Out |
| Mediterranean salt meadows (n2K habitat code 1330) | >15km downstream of site | N/a | Out |