

## **5.0 BIODIVERSITY**

### **5.1. Introduction**

This report is written to describe the habitats and biodiversity of this site on the south-eastern side of Tullamore which is accessed from the Clonminch Road. It has been prepared following site visits in May 2019 and June 2020 by Roger Goodwillie, a full member of the Chartered Institute of Ecology and Environmental Management.

As well as field survey, which was carried out in accordance with Smith *et al* (2011), information is used from

- Ordnance Survey of Ireland mapping and aerial photography from [www.osi.ie](http://www.osi.ie), Google Earth and Bing aerial photography.
- Online data on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from [www.npws.ie](http://www.npws.ie)
- Online databases of rare, threatened and protected species. Publicly accessible biodiversity datasets (National Biodiversity Data Centre, Botanical Society of Britain and Ireland, etc).
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2013).

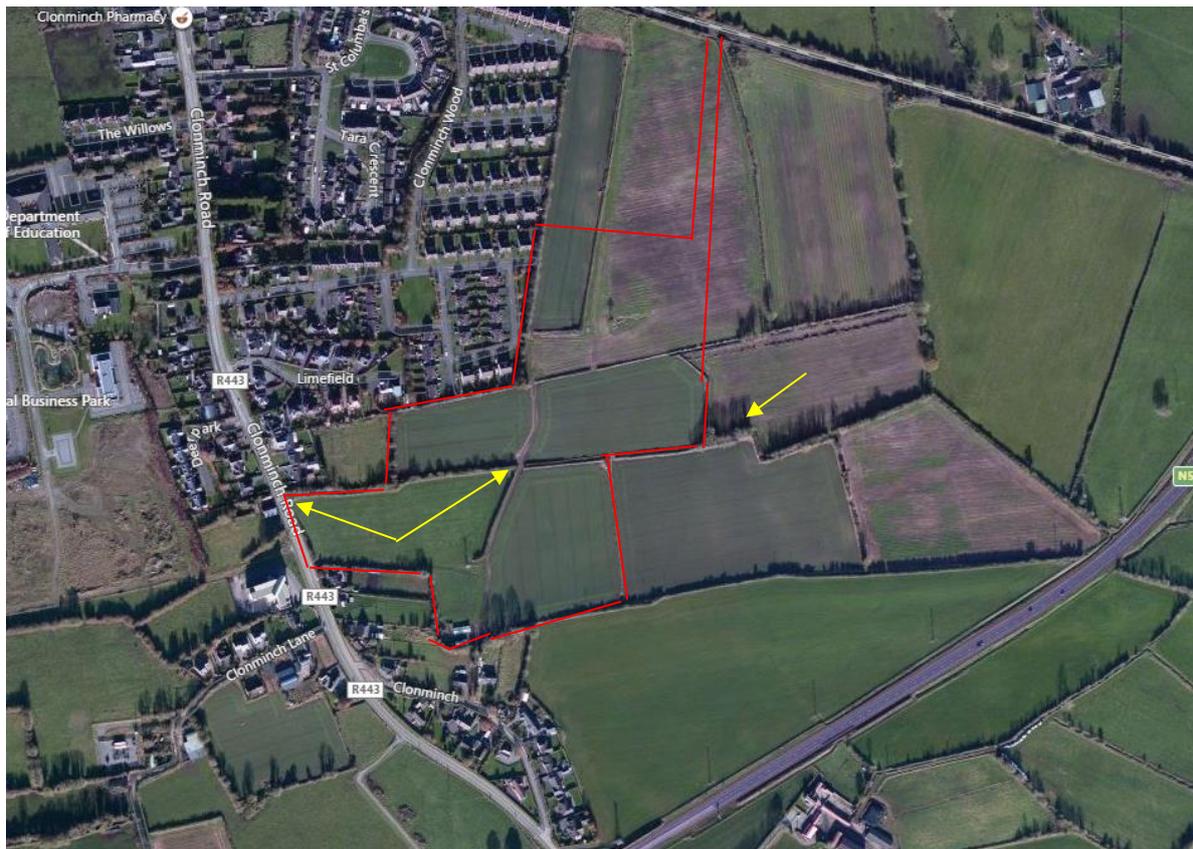
A Natura Impact Assessment relating to the application site within the Eastern Node Masterplan lands and proposed Strategic Housing Development application has also been undertaken by the author of this report and can be found under separate cover.

### **5.2 Receiving Environment**

#### **5.2.1 Vegetation & habitats**

The area is entirely agricultural land, as seen above, and in 2020 was all in tillage (arable crops BC1 in Fossitt 2000) with a crop of barley. The fields are divided by hedgerows (WL1) often with a seasonal drain beneath them (drainage ditches, FW4).

The tillage crop is sprayed so weed species are few. Field speedwell *Veronica persica*, cut-leaved deadnettle *Lamium hybridum*, hedge mustard *Sisymbrium officinale*, scutch grass *Elytrigia repens*, fumitory *Fumaria* sp and abundant American willowherb *Epilobium ciliatum* occur on most field edges while some sow thistle *Sonchus asper* and great brome *Bromus diandrus* grow amongst the crop.



Aerial view of the overall site. Yellow arrows indicate an old laneway and tree group described in the text.

The hedgerows provide the main source of biodiversity on site. Some sections around the fields are clipped but others, especially on the site edges, carry tall ash *Fraxinus excelsior* or, occasionally, beech *Fagus sylvatica*. Some of the best grown trees follow an old laneway coming off the Clonminch Road (see aerial photo above). The woody species here include ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, holly *Ilex aquifolium*, wild apple *Malus domestica*, wild plum *Prunus domestica*, privet *Ligustrum vulgare* and hazel *Corylus avellana*. Elsewhere hawthorn *Crataegus monogyna* and bramble *Rubus fruticosus* predominate in the hedges with blackthorn and holly. Locally there is some grey willow *Salix cinerea*, spindle tree *Euonymus europaeus*, honeysuckle *Lonicera periclymenum* and roses, both *Rosa arvensis* and *R. canina*. One plant of Sherard's rose *Rosa sherardii* grows at the most southerly point in the marginal hedge.

The smaller plants in the hedges are varied and in rough order of abundance are

<i>Ficaria verna</i>	lesser celandine
<i>Arum maculatum</i>	lords-and-ladies
<i>Vicia sepium</i>	bush vetch
<i>Rumex sanguineus</i>	wood dock
<i>Galium aparine</i>	goosegrass
<i>Potentilla reptans</i>	cinquefoil
<i>Veronica chamaedrys</i>	germander speedwell
<i>Stellaria holostea</i>	greater stitchwort
<i>Allium ursinum</i>	wild garlic
<i>Potentilla sterilis</i>	barren strawberry
<i>Asplenium scolopendrium</i>	hart's-tongue
<i>Polystichum setiferum</i>	shield fern
<i>Brachypodium sylvaticum</i>	wood false-brome
<i>Glechoma hederacea</i>	ground ivy
<i>Primula vulgaris</i>	primrose

Alexanders *Smyrniolum olusatrum* has invaded along some hedge lines from the Clonminch Road and at the southern point while small colonies of rose-bay *Chamerion angustifolium* also occur in places.

Most of the drainage ditches have seasonal flow only and there is seldom enough water to promote any aquatic species of plant. Great willowherb *Epilobium hirsutum*, meadowsweet *Filipendula ulmaria* and fool's watercress *Apium nodiflorum* are seen occasionally. Flow is towards the east and the water discharges under the by-pass and then to a depression on the townland boundary filled by cutover bog and forestry.

### 5.2.2 Fauna

The rabbit was the only large mammal with evidence on site and there are a number of burrows in the drier hedges. Foxes are very likely to visit but no signs of earths were seen; likewise for badgers.

There are no buildings on site suitable for bat roosts but a bat survey on 24<sup>th</sup> June with a Batbox III and Echo Meter revealed common pipistrelle to be the most frequent species in the two hours after sunset. Small numbers (1-2) were feeding in the trees near the farm buildings at the southern point whereas 3-4 individuals were concentrated along the hedge and old laneway leading in from Clonminch Road. The tree group east of the site had both common pipistrelles and Leisler's bat feeding but there were no bat movements along the (connecting) field boundary leading to the old laneway and these animals seem to form a separate population from the others. They may roost in the trees (if males) or enter from the railway line to the north. Pipistrelles require well grown hedges to act as corridors but this is less important for Leisler's bat, which flies high.

The bird fauna was typical of agricultural land with hedges. Woodpigeon, rook, jackdaw and magpie were the larger species seen while the hedges support blackbird, robin, wren, blue tit, chaffinch, bullfinch and goldfinch. A blackcap was heard singing along the old laneway while a chiffchaff occurred off-site in the tall trees at the eastern end.

In winter snipe would be associated with the farmland as they are all over the country. There is no roosting habitat however and the visits would be mostly be by night. Numbers of other waders or wildfowl would be small as there is no surface water available to attract them.

### 5.2.3 Evaluation

The site is typical of agricultural land in the Tullamore area with field drains keeping the water table lower than it would otherwise be. The only features of interest are the hedgerows which have relatively high biodiversity though not exceptionally so for the area. All species occur elsewhere around the town and this holds too for Sherard's rose, which is described by Parnell and Curtis (2012) as occasional in Ireland (BSBI Map hub). In general, the peripheral hedges have the greatest ecological interest except for part of the laneway off Clonminch Road which extends into the body of the site.

No invasive plant species were found on site though the spread of alexanders *Smyrnum* should be of concern as it dominates other hedgerow plants.

In terms of the TII (NRA) criteria the site would be assessed as being of local ecological importance (lower value).

### 5.2.4 'Do Nothing' Impacts

If agriculture ceased on the site it would eventually be covered by scrub and then woodland. Woody species would spread inwards from the surrounding edges and lead to an increase in habitat and species diversity.

Current agricultural management could be continued indefinitely and would lead to no appreciable change in the habitats.

## **5.3 Characteristics of proposed development**

A full description of the proposed project is provided in Chapter 3 of the EIAR but the main features of the development are 172 houses and 186 apartments giving 358 units. The buildings are 2-5 storeys in height and include a neighbourhood centre, creche and medical centre.

The development is served by a central road from the Clonminch Road, with tree-lined cycle and walking paths.

Public open space amounts to 1.5ha in the overall site area of 14ha and this will be landscaped with native trees and shrubs and some bulb and meadow areas.

#### **5.4 Potential impacts**

Any such project results in the obliteration of existing agriculture and its replacement by an urban and/or parkland habitat. During construction there is intensive soil disturbance leading to the loss of organic matter and soil organisms which have to re-invade when stability returns. Later landscaping work may lead to an increase in certain forms of wildlife, especially some bird species.

Outflows of sediment, oil and other chemicals are possible during construction and may be prolonged during operation if countermeasures are not taken.

Greater numbers of people and traffic may lead to disturbance of sensitive species in some cases.

The Charleville Wood SAC is downstream from the development site and is theoretically at risk from sediment or chemicals escaping from the site during construction.

#### **5.5 Mitigation Measures**

During construction no outflow of suspended solids will be allowed to field drains leaving the site. Since gradients are low, sedimentation basins will be simple to create if required. These and other preventative measures will be covered in a Construction Management Plan prepared by the chosen contractor.

The root systems of peripheral trees will be avoided by excavation works, to ensure their stability. This will have the effect also of preserving basal growth and wildlife.

The design of the surface drainage system includes permeable parking spaces as well as oil by-pass separation and full attenuation and detention for road and roof water. Water will be discharged to the drain along the railway line at the northern end of the site at greenfield rates.

There will be no importation of topsoil to the site which will prevent the ingress of invasive alien plants.

#### **5.6 Predicted impacts**

The impact of development on this site will be to replace agricultural land with urban and parkland habitats. There will also be the removal of about 400m of internal hedge though only 100m of this (the old laneway) is of high quality.

No bat breeding roosts are included in the site. There will be the loss of some feeding habitat for these animals though the overall population seems low. Additional planting may provide an alternative feeding area in due course because of its linear nature.

In general, the outcome will be a reduction in numbers of the field species though those associated with hedges on the margins will maintain themselves. This is especially the case for the hedge habitat along the southern edge which will not be modified.

There will be no impact on the downstream Charleville Wood SAC as loss of materials during or after construction will be prevented by attention to proper constructional methods. Even if they were to occur, the Tullamore River, which would receive outflows, does not have an ecological connection with the lake in Charleville which is fed by a different stream. The woodland itself would not be sensitive.

There is no likelihood of significant impact during operation if capacity exists at the wastewater treatment plant.

The project will not result in a significant loss of heritage values in the locality and the impacts could be described as minor negative.

#### 5.6.1 Worst Case scenario

Construction without pollution control could lead to negative impacts on the Tullamore and Brosna Rivers which have a mixed population of coarse fish and salmonids.

### **5.7 Cumulative & Residual Impacts & Interactions**

This area of development will add to the expansion of the Tullamore urban area over existing farmland, bringing with it a change in wildlife from rural species to those frequenting built-up land.

Some of the more interesting areas for biodiversity on the site (the peripheral hedges) will be maintained, thereby supporting some of their existing wildlife. As regards the old laneway at the western end, an adjoining development (Oaklee) is taking place on its northern side. The intention is to retain the line of trees on the laneway though increased light levels is likely to inhibit bat feeding when both sides are built up.

The growth of landscaping and gardens on the application site will increase some forms of wildlife within the site.

Since there is no designated site within 200m of the development, there is no obligation to carry out an ecological assessment of nitrogen deposition such as that required by TII (2011). (see Section 8.2.1.6.3 in Air Quality & Climate).

### **5.8 Monitoring**

There is no requirement for monitoring as the impacts of urbanisation are well known at this stage.

### **5.9 Difficulties encountered**

No difficulties were encountered in examining the site and assessing the likely impacts of development.

**References**

Parnell, J. & Curtis, T. (2012). *Webb's Irish Flora*. Cork University Press.

Smith, G.F., O'Donoghue, P. O'Hora, K. & Delaney, D. (2011) Best practice guidance for habitat survey and mapping. Heritage Council