

Biodiversity Management Plan

Proposed Riverside Park Kilmallock, Co. Limerick





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MKO> INTRODUCTION

11 Background

This report sets out the general biodiversity management measures and recommendations to help enhance biodiversity in the proposed Kilmallock Riverside Park, Kilmallock, Co. Limerick adjacent to the River Loobagh Riverside Park (Grid Ref.: 561046, 627816) and the site location is provided in Figure 1-1.

The proposed riverside park is located partially on a vacant site, and adjacent to an existing parkland, with associated footpaths, grassland, trees and ornamental flowerbeds. This urban environment is of low ecological sensitivity due to the heavily modified nature of the site.

The proposal by Limerick City & County Council is included as Figure 1-2 of this report which includes a series of item which will retain the existing trees and riverside habitats to the north which provide some potential foraging and commuting networks for wildlife and to enhance biodiversity.

The Biodiversity Management Plan also provides additional measures for enhancing existing biodiversity that will help maintain connectivity between habitats within the site and the wider landscape. The plan ensures that public education will be facilitated through erection of signage explaining local nature information along the riverside park. This aims to inform the public of the species to be found within the site as well as the ongoing management measures being implemented within the site. The plan considers the national All-Ireland Pollinator Plan 2021-2025 priorities, which although relate to broader strategies, aims to prevent biodiversity degradation, and provide enhancement where opportunities exist. The Limerick Development Plan 2022 – 2028 was reviewed as part of this assessment. The focus of this Biodiversity Management Plan is to secure the future management, maintenance, and enhancement of the habitats within and adjacent to the proposed Kilmallock Riverside.

Description of the project

The proposed development works will consist of the creation of a new Riverside Amenity Area on the site of a recently demolished building, at the junction of Wolfetone Street and the River Loobagh, adjacent to the River Loobagh Riverside Park. The amenity area will consist of areas of planting, grassland and natural play areas. The works will include removal of existing fencing that encloses the site and installation of new footpaths to provide improved access to the Riverside Park from Wolfetone Street. The works will also include installation of benches and signage explaining local nature information and archaeological history around the Kilmallock Town Wall that crosses part of the site. New amenity lighting is proposed is proposed local to the Riverside Amenity Area.

As part of the works Limerick City and County Council (LC&CC) are planning on installing rock armour at 2 locations along the riverbank where the bank has partially collapsed.

Any alien species found on site will be reported to LC&CC Environmental Dept. by the contractor/crew on the ground. The alien species will be dealt with by specialists in accordance with statutory requirements and specification/local authority protocols. No works will take place in and around these stands and temporary warning tape will be erected 4m back from these stands when identified by LC&CC Engineering Staff to the Crew on the ground.

The proposed site layout is shown in Figure 1-2.



Statement of Authority

A baseline ecological survey was undertaken on the on the 3rd of March 2023 by Lisa Buckley (B.Sc. Env, QCIEEM) of MKO. Lisa is an experienced ecologist with <2 years' professional ecological consultancy experience. The site was revisited by Claire Stephens (B.Sc. Env., QCIEEM) on the 1st of August 2023 to ground truth the findings of the first field visit and confirm the nature and habitats and species occurring within the study area. This report has been prepared by Claire Stephens who has 5 years' professional ecological consultancy experience.







2.

MANAGEMENT AND ENHANCEMENT MEASURES

The following subsections describe the biodiversity management measures that are recommended to be undertaken along the River Loobagh Riverside Park at Kilmallock, Co. Limerick. The measures included are practical and easy to maintain for the future which is important in achieving cost effective and relevant management actions. Management will focus on the maintenance of the existing treeline and individual trees/scattered tree habitat. The proposal will include the for grassland enhancement and planting of areas of wildflower meadows, native hedgerows and woodland planting along the development and the addition of specimen trees to provide and maintain connections between the site and sites of higher ecological significance in the wider area.

2.1 **Construction Phase Measures**

The following measures will be implemented during the construction phase of the development for the protection of the habitats adjacent to the development footprint:

- > A pre-construction invasive species will be carried out by a qualified ecologist prior to commencement of the works onsite.
- > Prior to the commencement of any site works, pre-commencement mammal surveys will be carried out within the optimal time period to determine if any mammalian fauna have taken up residence within the development footprint in line with best practice guidance (i.e., NRA guidance). The requirement for a pre-commencement survey is not a lacuna in the assessment and is fully in accordance with industry best practice.
- > Prior to the commencement of any site works, a pre-construction bat activity survey, at the appropriate time of year, will be undertaken by a qualified ecologist to ensure there are no roosting bats present within the works area and identify any sensitive areas to be protected during the works as well as to establish which bat species commute through and forage within the site to appropriately inform the lighting plan and planting schedule
 - If a bat roost is identified, a bat derogation licence will be obtained from the NPWS, prior to felling or any disturbance works and the activity will be supervised by a qualified ecologist.
- > The site boundary will be securely fenced off prior to construction activities to avoid potential for impact on the existing street trees and scattered trees to be maintained. There will be no construction access outside these fenced areas.
- > Trees that are located adjacent to the site will be adequately protected in accordance with the relevant guidelines (British Standard BS 5837: 2012 Trees in relation to design, demolition, and construction.)
- Construction activity will follow best practice to avoid run off or any impacts of construction in the areas outside the site.
- Works will be scaled during periods of high rainfall, and shall be scaled back or suspended if heavy rain is forecast;
- Machinery deliveries shall be arranged using existing structures along the existing road;
- > Any excess construction material shall be immediately removed from the area and sent to an authorized waste recovery facility;
- > Spill kits shall be available in each item of plant required;
- Discharge onto ground will be via a silt bag which will filter any remaining sediment from the pumped water. The entire discharge area from silt bags will be enclosed by a perimeter of silt fencing as an additional measure to avoid any preferential flow of silt-laden water offsite;



Prior to the commencement of earthwork silt fencing will be placed down-gradient of the construction areas where drainage pathways to the Loobagh river and the wider environment are present.

Biosecurity

- > No works will be carried out within any areas identified as Invasives species.
- > All machinery will be thoroughly cleaned before entering and leaving site to avoid the potential for spread of seeds/fragments of invasive species via transport on the tracks of excavators or other vehicles.
- Machinery to be used in the vicinity of the watercourse should be cleaned and disinfected to prevent the spread of aquatic dieases. Machinery need to be treated leaving the site with 1% solution of Virkon Aquatic or another proprietary disinfection product. Alternatively, a 5% solution (100 ml / 20 litre solution) of chlorine bleach should be used. Rinse thoroughly with clean water (IFI, 2010).
- All washing will be undertaken in areas with no potential to result in the spread of invasive species.
- Good construction site hygiene will be employed to prevent the introduction (e.g. Himalayan Balsam, Japanese Knotweed etc.) and spread of problematic invasive alien plant species including Giant hogweed and all plant and equipment will be checked prior to arrival on site to prevent the spread of invasive plant species and again before leaving the site to ensure no invasive material is spread.
- Stripped topsoil will be stored for use in the landscaping of the development.
- > Any soil and topsoil that may be required on the site will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present.

Disturbance

- > The removal of vegetation within the proposed development site will comply with the requirements of the Wildlife Act 1976-2022.
 - A pre-commencement tree roost inspection will be undertaken by a qualified ecologist at the appropriate time of year. The function of this survey will be to assess any changes in baseline environment since the time of undertaking the tree roost assessments during 2023. If high potential roost features are identified, follow up surveys including endoscope surveys and/or emergence/re-entry surveys will be undertaken.
 - If a bat roost is identified, a bat derogation licence will be obtained from NPWS prior to felling and the felling activity will be supervised by a qualified ecologist.
 - If there is a requirement to clear any vegetation, scrub and individual trees during the nesting bird season, standard best practice measures will be followed, with a nesting bird survey undertaken by a suitably qualified ecologist.
 - Where removal of any trees or hedgerows is unavoidable, additional tree and native hedgerow planting will be carried out using native species. (i.e., there will be no net loss of linear hedgerow or treeline).
 - Tree felling will be undertaken outside the main bat maternity and hibernation periods (Kelleher & Marnell, 2006).
 - At least one no. bat box will be placed onsite before works commencing to allow for relocation of bats potentially disturbed due to the increased noise and activity associated with construction. Schwegler 2FN Woodcrete bat boxes, or similar, are recommended.
 - While no high roosting suitability was identified the proposed development works can provide roosting opportunities for bats. Roost sites opportunities will be provided for potential roosting bats. Bat boxes will be erected on more mature trees to be retained within the survey area following best practice guidelines (Kelleher & Marnell 2006, NRA 2006). A minimum of 3

bat boxes are recommended for installation prior to any works commencing. Bat boxes will have a southerly orientation and be positioned at least 2m from the ground, away from proposed artificial lighting from the operational phase of the development. They will be placed adjacent to vegetation features such as treelines and hedgerows, to ensure they are close to existing flight paths and can avoid wide open spaces (Collins, 2016).

- > Where lighting is unavoidable during construction, low-intensity lighting and motion sensors will be used to limit illumination.
- Exterior lighting, during construction, shall be designed to minimize light spillage, thus reducing the effect on areas outside the proposed development, and consequently on fauna including otters likely to commute along the river corridor, birds, bats and insects i.e., Lighting will be directed away from existing vegetation to minimize disturbance to bats. Directional accessories will be used to direct light away from these features, e.g., through the use of light shields (Stone, 2013). The luminaries will be of the type that prevent upward spillage of light and minimize horizontal spillage away from the intended lands.

2.2 Grassland Management and Enhancement

It is recommended that the proposed meadow areas be left unseeded to allow common wildflowers to grow naturally utilising the 'Don't Mow Let it Grow' action for pollinators should be used where possible, the reduced meowing (possibly a 6 week short flowering meadow) will allow the natural seed bank to recolonise and initially it will look rough but it'll come good over time. The introduction of wildflower meadow through certain open spaces within the site provides new habitats for local flora and fauna and helps to increase biodiversity in the local area. There will be no use of herbicides or artificial fertilisers during the management of the wildflower meadow. Pesticides should be used sparingly and only when absolutely necessary, such as in the treatment of invasive species like Giant Hogweed.

Wildflower meadow areas with mown paths/floral lawn elements in certain areas of the plan will be included where more appropriate this would be achieved by mowing paths through longer grass these areas can still be used and can increase interest and use by pollinators.

Should reseeding as opposed to solely natural regeneration of the seedbank be necessary for the creation of wildflower meadow areas it is recommended, they be planted with native wildflower seed or bulb planting. Native perennial plant species are highly recommended which creates a colourful and dynamic landscape that is pleasant to visit.

The following measures are recommended for the grassland areas of the Riverside Park at Kilmallock, Co. Limerick:

- A reduced cutting regime will be implemented creating a short flowering meadow where parts of the grass will be cut less frequently to allow wildflowers to grow and provide food.
- Cutting will not take place before characteristic annual, biennial or short-lived perennial plant species which depend on seed production have set seed (for example yellow rattle (*Rhinanthus minor*). Continued early grass cutting is known to reduce species richness. For this reason, cutting will be undertaken in August of each year. This will promote late-flowering species such as devil's bit scabious (*Succisa pratensis*) (Crofts, and Jefferson, (eds), 2009).
- Grass cut in the wildflower meadow each year will always be removed immediately and not left to decay on site. Where vegetation is left on site, changes in the botanical composition of the grassland may ensue. Excess vegetation left on site may also supress low growing species and reduce species-richness. The removal of vegetation off the grassland will also help to impoverish the soil/ reduce nutrients and thereby supress competitive grass species and enhance floral diversity.



- > There will be no use of herbicides or artificial fertilisers during the management of the wildflower meadow.
- Signage will be erected to indicate to the public that the area is being managed for wildlife.

Species mixes should include species including Agrimony, Autumn hawkbit, Bird's-foot-trefoil, Bugle, Cat's ear, Cowslip, Creeping buttercup, Creeping thistle, Dandelion, Devil's Bit Scabious, Field Scabious. Germander speedwell, Harebell, Knapweed, Meadow buttercup, Meadow Vetchling, Ox-eye daisy, Red clover, Selfheal, Spear thistle, Tormentil, Vetch, White clover, Wild carrot, Wild Thyme, Yarrow and Yellow rattle. Angelica, Crowfoot, Cuckoo flower, Meadowsweet, Fleabane, Purple Loosestrife, Marsh marigold, water mint, Ragged Robin, Valerian, Willowherb and Woundwort are all native species which would thrive close to the riparian wetter habitat towards the river/northern boundary.

It is recommended that if reseeding, the proposed grassed areas will be reseeded with a mixture with areas of both short cut floral lawns and pollinator friendly wildflower seed mixes.



2.3 Preservation and Enhancement of Linear Features

The proposed development has been designed to provide for the maintenance and protection of the existing treelines, individual trees and tree groups through the existing park as well as ornamental hedgerows along the southern boundary of the riverside park. These will be safeguared by the erection of appropriate protective fencing and no works will be permitted within these areas. No impacts on these linear festures during the operational stage of the development are anticipated.

In addition to the retention of the majority of the existing trees, the landscape plan also proposes for the planting of additional linear features including native hedgerows/woodland planting and shrub and herbaceous planting along the southern boundary and Orchard tree platning throught the park which will further help maintain connectivity between the riverside site and the wider landscape.

Planting will use native and naturalised species where possible throughout. Enhancement of existing ornamental hedgerows along boundaries will be undertaken with the planting of a new native hedge along stretches of the proposed park utilising species including native common hawthorn (*Craetagus monogyna*), blackthorn (Prunus spinosa) and guelder-rose (*Viburnum opulus*).

Native hedge/woodland planting to incorporate a mix of pollinator friendly trees and shrubs into the local community that will flower throughout the season. The species should be chosen for their appropriateness however with a preference for native planting where possible. The recommendation to plant native hedgerows and woodland planting will help all types of biodiversity including bats, birds, pollinators, hedgehogs. The proposed community orchard element will benefit both pollinators and the community.

Species recommended in the planting scheme towards the northern half of the site include common alder (*Alnus Glutinosa*) and white willow (*Salix alba*) which can withstand wet conditions. Other species to be considered in the tree planting will include species flowering in early spring species including holm oak (*Quercus ilex*), wild cherry (*Prunus avium*), cherry plum (Prunus cerasifera), downy Birch (*Betula pubescens*), Common/ Pedunculate Oak (*Quercus robur*), beech (*Fagus sylvatica*) and hazel (*Corylus avellana*).

- New planting will be checked annually for damage and dead branches will be removed and weeds cleared.
- Cutting of treelines or hedgerows for maintenance within the land management area will be undertaken in line with the Wildlife Acts. All wild birds, their eggs, young and nests are protected under the Wildlife Act 1976-2022.



2.4 **Faunal Habitat enhancement measures**

In order to enhance the habitat within the riverside park boundary for wildlife, the following wildlife enhancement measures are proposed:

Bat boxes

It is recommended that bat boxes will be provided along suitable areas of treelines throughout the site. While no high potential for roosting bats were identified within the site boundary during the surveys undertaken in March and August 2023, this will provide greater potential for the establishment of roosting bats in the area. Bat boxes will be similar to the general purpose Schwegler IFF type bat boxes. The boxes will be sheltered from strong winds and with exposed to the sun for part of the day (usually south, south-east or south-west orientation).and be positioned at least 2m from the ground, away from artificial lighting (to protect them from predation). They will be placed adjacent to vegetation features such as treelines/hedges to ensure they are close to existing flight paths and can avoid wide open spaces (Collins, 2016). An appropriately qualified ecologist should advise on the locations at which bat boxes should be erected. An example of a suitable Schwegler 1FF type bat box is provided in Plate 2-1.



Plate 2-1 Example of Schwegler 1FF type bat box suitable for roosting bat species, open at the bottom allowing droppings to fall out so it does not need cleaning.

Bird boxes

It is recommended that bird boxes be erected along the existing semi-mature trees within the existing habitat and on the newly planted native tree species within the landscaped areas to facilitate common and widespread species such as blue tit, treecreeper and robin. An appropriately qualified ecologist should advise on the locations at which bird boxes should be erected. Examples of suitable bird boxes are shown here in Plate 2-2 below.





Plate 2-2 Treecreeper nest box design (left) and blue tit nest box design (right)

2.5 Lighting

It is recommended that any lighting incorporated into the proposal will conform to Objectives EH O24 Light Pollution and Objective EH O25 'Dark Sky' Parks and Reserves in the Limerick Development Plan 2022 - 2028), with the overall aim of minimising light spillage, thus reducing any potential disturbance to wildlife while also maintaining less than 1LUX along linear features including the river and any retained or newly planted trees/hedgerows (for bats, birds, pollinators and local non-volant mammals including otter, badger, fox, pine marten and any other local fauna likely to pass within the area at least on occasion):

- Lamps will have a lamp flux/colour of Warm White LED light source (2200 2700K or depending on the councils' own specifications) in areas of linear habitat features less attractive to insects thus bats.
- Directional accessories such as internal louvres/cowls/hoods etc. should be incorporated to direct light away from treelines and linear habitat features – to reduce horizontal light spill and eliminate upward light.
- Lamps should also be specified with 0 Degree tilt (where possible) to ensure limited unwanted light spill onto the river/wider environment.
- Lighting control regime consider controlled lighting scheme during peak bat activity (i.e. 30min after sunset and 40 min before sunrise), as well as reduced illuminance during hours of lower human activity (i.e. 12:30am – 5:30am).
- Lighting to be used only where necessary (needs to be justifiable).
- Low level columns Height of lighting columns to be considered i.e. <8m



2.6 **Public Information Signage**

As outlined within the proposed layout drawing (Figure 1-2) it is proposed to erect educational signage around the site to enhance awareness of local biodiversity and to inform the public about the biodiversity management measures within the site. The educational signage will:

- > Highlight local habitats and species of interest by providing a list of plant and animal species known to occur in the area as well as information on these species.
- > Highlight the importance of management measures/restricted cutting of the wildflower meadow for the long-term maintenance of this habitat type and floral diversity.
- > Encourage community engagement in biodiversity conservation and management.

Plate 2-3 – 2-5 provides an example of suitable public information signage.



Plate 2-3 Example of information/educational signage to be erected on site identifying wildlife occurring in the area



Plate 2-4 Example of information signage to be erected on site identifying that the area is being Managed for Wildlife/Biodiversity



Plate 2-5 Example of information signage to be erected on site identifying that the area is being Managed for Wildlife and subject to a reduced mowing regime



3.

CONCLUSION

The proposed development has been designed to secure the protection of the existing vegetation within the development site within an existing modified environment. This includes scattered tree habitat through the site and enhancing existing amenity grassland habitats through the creation of wildflower meadow habitat.

This Biodiversity Management Plan outlines how the development contributes to the protection and enhancement of existing vegetation within the site through maintenance of existing features such as individual semi-mature trees through the existing park and treeline along the northern boundary with the river and through the provision of measures to further enhance biodiversity throughout the heritage park. These measures include the introduction of native hedgerow along large stretches of the southern boundary, tree planting and the provision of areas of wildflower meadow containing pollinator friendly species which will be subject to a limited cutting regime. A community orchard is also proposed within the riverside park which can provide food and shelter for a variety of pollinators. Existing amenity lawn areas will be enhanced to include such wildflower meadows or shorter floral lawns with paths mown through them created either by natural regeration or through the use of native wildflower seed mixes incorporated to enhance the visual amenity and favour pollinators. These measures will increase habitat connectivity with the wider landscape and provide refuges for native species including pollinators.

In addition to the above, community information signage will help to provide a better understanding of the biodiversity in the area and management practices including the proposed reduced cutting regimes required to maintain the habitat in its optimal quality.

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