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Supporting Information

Derogation Licence in support of LRD development at

Ballyclogh, Annacotty, Limerick

1 September 2026

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1 Introduction

1.1 Objectives

The Proposed Development involves the construction of a residential development at Ballyclogh, Annacotty, Limerick. The Proposed Development site is adjacent to the Mulkear River, with a small tributary forming the northern boundary. The Proposed Development will consist of the provision of a total of 105 no. residential units along with a creche and all associated works. The Proposed Development will be connected to the Rivers Road through the construction of a new entrance and associated roadways into the estate (Figure 1-1).

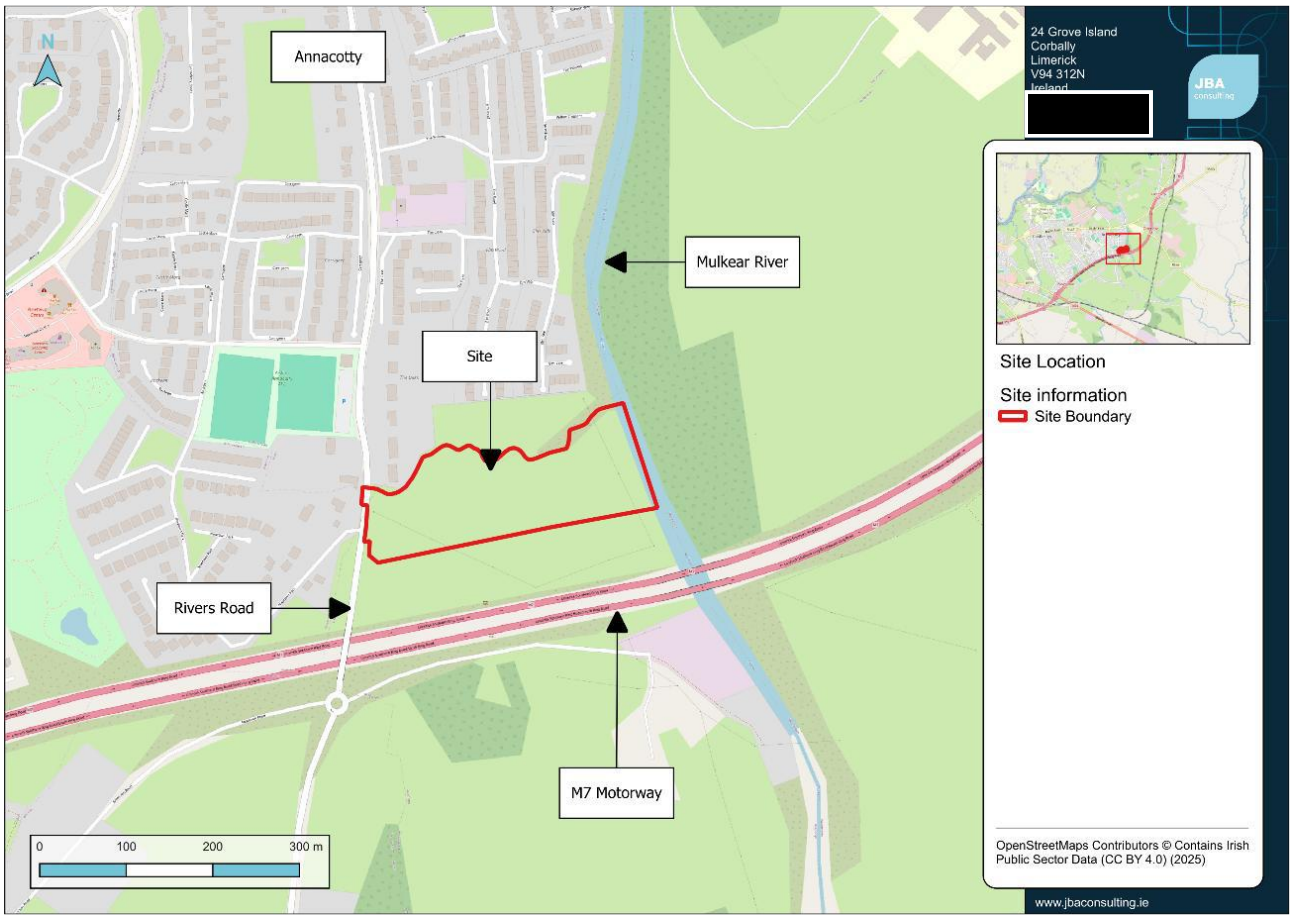


Figure 1-1: Site location and boundary.

Planning for this site was submitted in 2025 (planning ref 2560788), to Limerick City and County Council; the local authority granted planning permission. Three appeals have been received from local residents. The main points of appeal can be summarised as follows:

Principle of Development: No objection in principle to the site being developed for housing.

Apartment Block 1: Apartment Block 1, which is 5 storeys, would cause overlooking, overshadowing, loss of light and loss of privacy to their properties.

Boundary: Request that a 3m stone or plastered boundary wall be constructed along the boundary with their property, which is directly to the north of the site.

Following appeals to the planning decision, the case was referred to An Coimisiún Pleanála (ref: ACP-323916-25). ACP concluded that *a reasonable scientific doubt exists as to the impacts of the Proposed Development on the site integrity of the European Site, and adverse impacts, therefore, cannot be ruled out without further analysis and assessment. It is considered that the Proposed Development would materially contravene Policy EH P1 (Protection of Natural Heritage and Biodiversity) of the Limerick Development Plan 2022-2028, as varied, and would, therefore, be contrary to the proper planning and sustainable development of the area*.

Furthermore, in the Hellfire Massy Residents Association v An Bord Pleanála, C-166/22 case, the court decision stated in paragraph 36 that:

It follows from that case-law that in the specific case where, first, the execution of a project that is subject to the dual requirement for assessment and development consent laid down in Article 2(1) of Directive 2011/92 involves the developer applying for and obtaining a derogation from the plant and animal species protection measures prescribed in the provisions of national law transposing Articles 12 and 13 of Directive 92/43 and where, second, a Member State confers power to grant such a derogation on an authority other than the one on which it confers power to give development consent for the project, that potential derogation must necessarily be adopted before development consent is given. If it were otherwise, that development consent would be given on an incomplete basis and would not, therefore, meet the applicable requirements (see, to that effect, judgment of 24 February 2022, Namur-Est Environnement, C-463/20, EU:C:2022:121, paragraphs 52 and 59 and the case-law cited).

In view of the location of the Proposed Development, on a site adjacent to the Mulkear River in Annacotty, Co. Limerick, and cognisant of the fact that Otter use this watercourse, Otter may be using the Proposed Development site and therefore may be disturbed by the proposed activities. Therefore, further Otter surveys and a derogation licence application are necessary.

1.2 Team

This report was prepared by Dominic Tilley BSc MSc PhD and reviewed William Mulville BSc (Hons), MSc, MCIEEM and Anne Mullen BSc MSc, MCIEEM.

Surveys were carried out by Dominic Tilley BSc MSc PhD and Olly Lynch Milner BSc (Hons).

Survey methods followed guidance in:

- The Otter Field Survey and Monitoring Handbook. Pelagic Publishing. (Findlay and White 2026)
- Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes. Environmental Series on Construction Impacts. National Roads Authority. (NRA 2006)

2 Background

The Proposed Development will be carried out on lands owned by the applicant; the site is currently a greenfield and was under agricultural use up until the applicant purchased the lands in 2025. The site is zoned as new residential in the Limerick County Development Plan. The site has been subject to a previous planning application in 2004 with regards to site infill that was carried out in or around the early 2000's. Previous to and following from that infill, the site was used as agricultural lands. A planning application for this housing development was placed in 2025, with planning refused by An Coimisiún Pleanála (ACP-323916-25).

3 Proposed activity

The Proposed Development will require multiple activity phases.

This includes:

Site Clearance:

Site clearance will be minimal, with only grassy vegetation across the site where construction will occur. A derelict building will be removed – this building is of negligible ecological value and has no value to Otter.



Figure 3-1: Derelict building to be removed from site with no value to Otter

Construction:

The Proposed Development will be carried out over different phases, with planning permission sought over a 10-year period. Construction works will use industry standard methods and materials, and equipment used will meet requirements in terms of noise and other emissions.

There will be no works within a 20m buffer of the watercourses; the exception to this is for the stormwater network outfall. Within these 20m buffers, no machinery or materials will be stored, and no features to facilitate the Proposed Development will occur (e.g. settling pond). These buffers will be demarcated at the onset of works and will remain unused for the duration of construction.

The Proposed Development layout is presented in Figure 3-2.

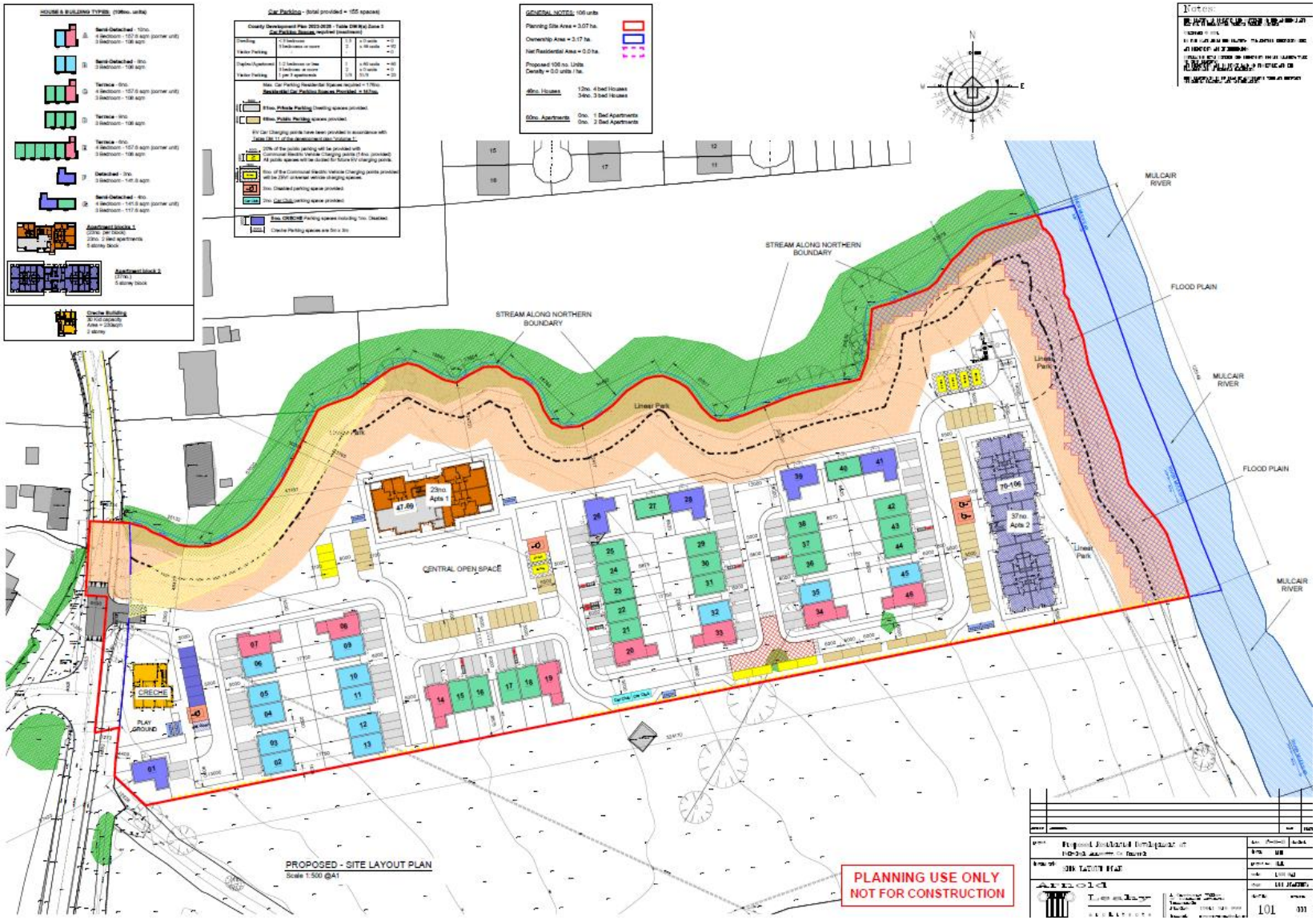


Figure 3-2: Proposed Development layout

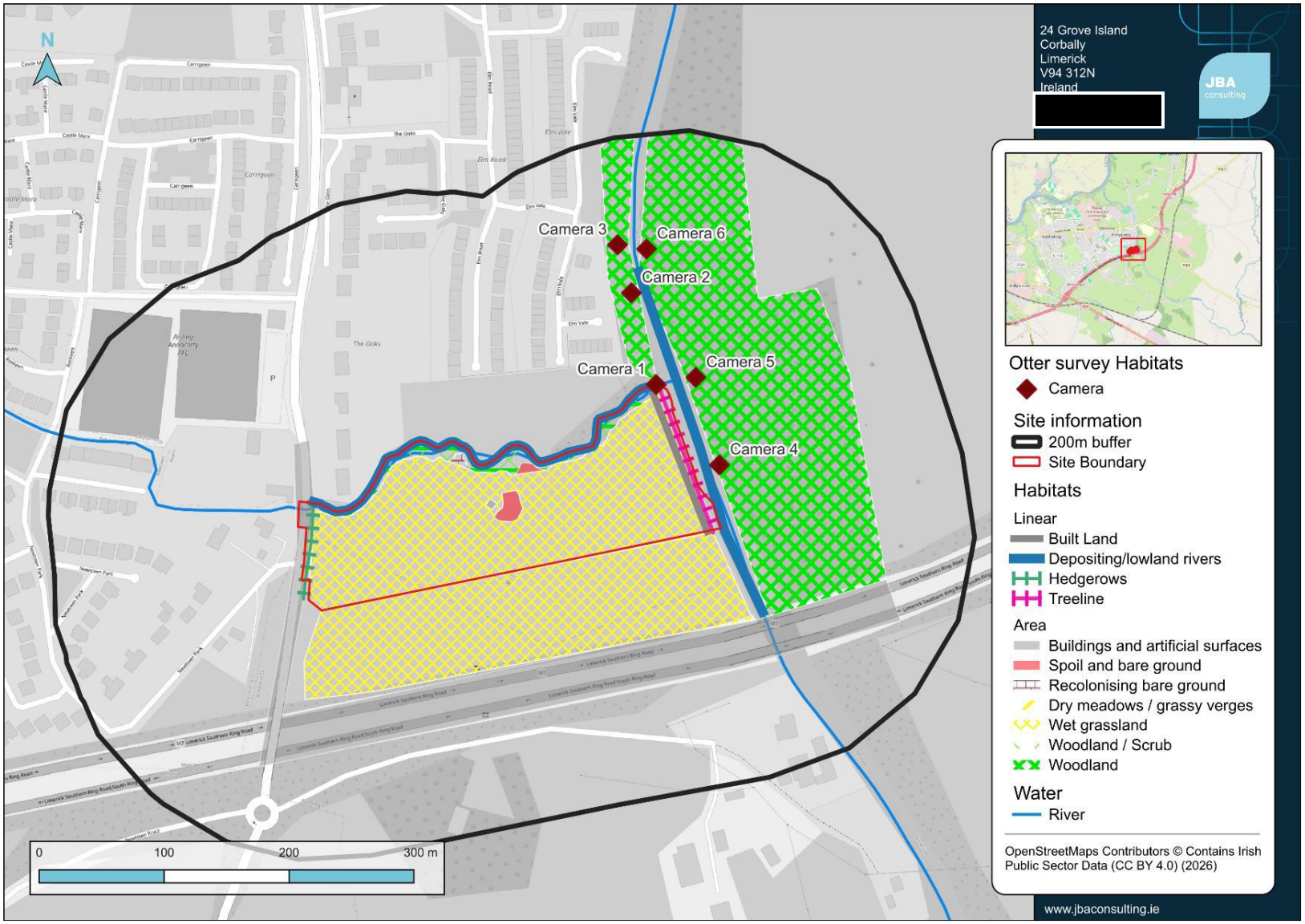


Figure 3-3 Habitat map

4 Ecological surveys

4.1 Methods

4.1.1 Desktop Baseline Study

A desktop study was conducted of available published and unpublished data, along with a review of data available on the National Parks and Wildlife Service (NPWS), and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats for the local Otter population, that may be present within ecologically relevant distances from the proposed scheme. General web searches for relevant local information were also carried out. The data sources below were consulted for the desktop study:

- The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview.
- The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessment.
- Aerial photography available from www.osi.ie, Google Maps http://maps.google.com/
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie
- Otter Survey of Ireland 2023-2024 – Irish Wildlife Manuals 161 (Reid et al. 2025)
- NBDC, 2026 – Species Distribution Maps; Available online at www.biodiversityireland.ie;
- All Ireland Red Data lists for vascular flora, mammals, butterflies, non-marine molluscs, dragonflies & damselflies, amphibians and fish; and

4.1.2 Field Surveys

4.1.2.1 Objective(s) of survey

Following initial surveys in 2025 along the northern boundary stream and the left bank of the River Mulkear not revealing the presence of Otter holts/ resting places, further surveys were requested to support a planning application for the site. These surveys were expanded to ~200m from the site red line boundary to both left and right bank of the Mulkear to determine whether any Otter resting places were present.

4.1.2.2 Guidance

The ecological surveys recorded riparian habitats and signs of Otter habitation, following guidance outlined in the documents below:

- Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council. (Smith et al., 2011);
- Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes – National Roads Authority (NRA 2006); and
- The Otter Field Survey and Monitoring Handbook: A Practical Guide to Field and Camera-Trap Surveys (Findlay and White 2026)
- Habitats have been named and classified following A Guide to Habitats in Ireland by Fossitt (2000)).

Terminology for Otter-based field signs and resting areas will be following the update terms and labels outlined within Findlay and White (2026) field survey and monitoring handbook document.

4.1.2.3 Field methods

Surveys involved walking the stretches of watercourses, along the left and right banks of the Mulkear, in channel walking looking at riverbanks from water level, and along the northern boundary stream, looking for signs of Otter in the form of spraints, prints, disturbance in vegetation, mammal trails, holes etc. If features of interest were recorded e.g. trail leading to a potential resting place, camera traps were deployed to record what species were using the area.

Deployed cameras were left to record for approximately 6 weeks with a maintenance visit to change SD cards, and batteries after approximately 3 weeks of deployment.

Surveys were carried out between May and July 2026; Weather conditions varied between surveys, but each area was surveyed in good weather conditions allowing for detection of field signs. Site visit schedule is presented in Table 4-1.

Table 4-1: Site visit schedule

Date	Objective	Notes	Weather
07/05/2026	Walkover; camera deployment	North boundary stream; left bank	Hot, sunny, low flow, no rain
15/05/2026	Walkover; camera deployment	Right bank	Hot, overcast, low flow, no rain
29/05/2026	Camera maintenance; walkover	North boundary stream; left bank	Light cloud cover; low flow; warm
05/06/2026	Camera maintenance; walkover	Right bank	Overcast; showers; high flow
19/06/2026	Camera collection; walkover	North boundary stream; left bank	Overcast; showers; high flow

Date	Objective	Notes	Weather
03/07/2026	Camera collection; walkover	Right bank	Low flow, overcast, showers
05/08/2026	walkover	Right bank	Low flow, overcast; warm

A Bushnell (Model 119987M 32MP Core DS-4K) and five Blazevideo A252 trail cameras were used to record activity.

The A252 trail camera has a 70°sensing angle, lens f/2.0, Field of View (FOV)=110°, Auto IR-Cut, with 0.3s fast trigger speed and 0.5s recovery time.

The Bushnell camera has a 35°sensing angle, lens FOV=50°, with 0.15s fast trigger speed and 1s recovery time.

Three cameras were deployed on the left bank of the Mulkear

- Camera 1 was deployed at the confluence of the Mulkear and north boundary stream.
- Camera 2 was aimed at an exposed patch of sediment with a path leading from it into the undergrowth, on the left bank of the Mulkear.
- Camera 3 was along a path leading from the river to a hollow in a tree; the hollow in the tree showed no signs of use at the time of the initial (and subsequent) visits, on the left bank of the Mulkear.

Three cameras were deployed, one the right bank of the Mulkear.

- Camera 4 was along a path leading from the river to a hollow in a tree; this camera was repositioned in order to get a better angle on an adjacent trail; this location was selected as the path was leading from the water, and the hollow in the tree showed signs of use and may be a feature used by Otter.
- Camera 5 was deployed in an area with hollows in the ground that may be used by Otter, although at the time of the surveys there were no visible signs of use.
- Camera 6 was covering an area of riverbank with a trail running adjacent to the water, and where holes in the bank were present.

4.1.2.4 Ad-hoc riverbank check

A survey along the river bank covering the section between the northern boundary of the survey area and the Weir in Annacotty was carried out in August 2026.

4.1.2.5 Description of survey area

The Proposed Development site is bound by the M7 to the south, the Mulkear to the east, and housing to the north and west (Figure 4-1). The lands are currently under agricultural use (Figure 4-2, Figure 4-3).

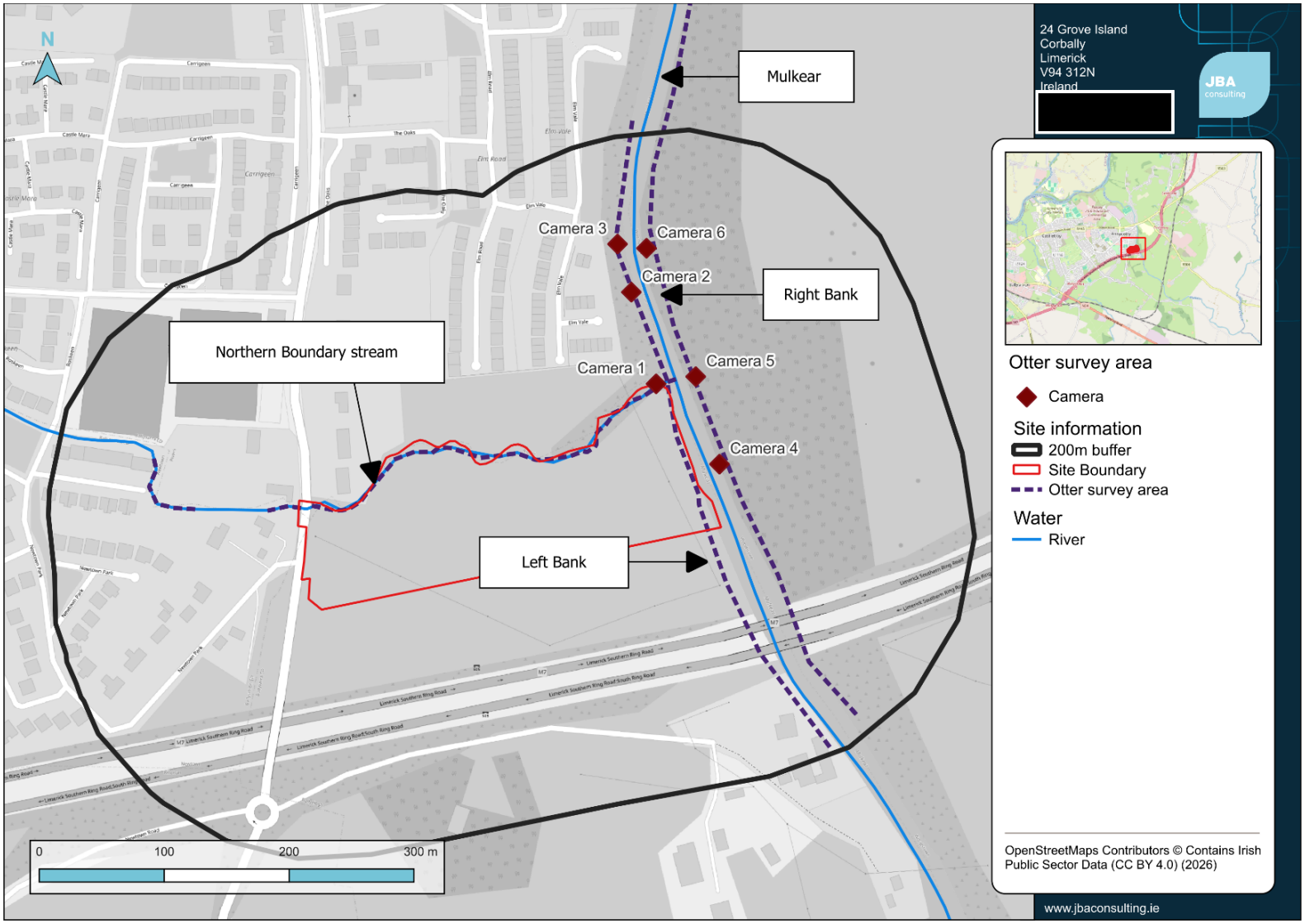


Figure 4-1: Extent of survey area



Figure 4-2: General aspect of the Proposed Development area with wet grassland in the foreground and woodland beyond the Mulkear in the background



Figure 4-3: River Mulkear looking downstream from south of the Proposed Development site

The survey area can be split into three zones:

1) Northern Boundary stream: this is a shallow low flow watercourse with no fisheries potential, and no substantial pools of water (Figure 4-4). There is a strip of trees along this stream, mainly mature specimens, with undergrowth forming a dense barrier. At the west extreme of the site boundary, the stream is culverted under the road, cutting off the upper reaches of the stream. On the west of the culvert the stream is dry, with only short section of open channel areas, in an urbanised environment.



Figure 4-4: North boundary stream

2) The left bank of the River Mulkear: this is the stretch of Mulkear adjacent to the Proposed Development Site. To the south the Motorway bridge crosses the Mulkear, with a path running under the bridge (Figure 4-5). An informal footpath runs along the top of the riverbank, from south of the motorway bridge, past the Proposed Development site, and into the 'Riverbank' housing estate. There is narrow strip of trees running from the motorway bridge to the northern boundary stream. Along the left bank of the northern boundary stream, the strip of vegetation is wider.

The footpath is well used, with evidence of access to the water by fishers and for recreational activities.



Figure 4-5: Passage under the motorway bridge with footpath to the right of fenceline, and fish pass.

3) The right bank of the River Mulkear: this is the riverbank on the opposite side of the river from the Proposed Development. This riverbank is characterised by woodland cover, and relatively undisturbed (Figure 4-6).



Figure 4-6: Vegetation along the right bank of the Mulkear with mammal trail leading to the water

4.2 Results

4.2.1 Desktop

Despite the general knowledge that Otter frequently use and live along the Mulkear, for instance Otter are well documented at Annacotty Weir (e.g (Ecofact 2026; IFI 2026)), few records are present on the NBDC database. NBDC records for the area (collected on 17/06/2026) are presented in Figure 4-7 and Table 4-2. These correspond to all available data, irrespective of age of records.

A sensitive data request was also submitted for Otter records in the vicinity of the site. The results of this do not add any information on the current knowledge.

Table 4-2: NBDC Records

Record Id	Grid	Site	Dataset	Precision	Recorder	Date	Abundance	Record comment
124891294	R652553	Slievemohera River near Ballyclogh House	Otter Survey of Ireland 1982	100m	L.L. Chapman; P.J. Chapman	23/05/1980	1 Count of Mucous; 1 Count of Droppings	Site No: R NE 53 / Type of Habitat: Running Water
124891304	R683563	Slievemohera River at Killeenagarriff	Otter Survey of Ireland 1982	100m	L.L. Chapman; P.J. Chapman	23/05/1980	5 Count of Droppings	Site No: R NE 52 / Type of Habitat: Running Water
128249363	R683563	Killeengariff Bridge	Otter survey of Ireland 2004 & 2005	100m	Mike Bailey	29/11/2005	2 Count of Droppings	Wide river with gravel bottom and exposed gravel and mud bars. Steep sides. Many ledges on bridge. / Digging in sand (with numerous footprints) just d/s, spraints on rock on opposite bank
146318011	R683563		Atlas of Mammals in Ireland 2010-2015	100m	Stefan Jones	02/09/2010		
124891290	R624552	Stream at Ballysimon	Otter Survey of Ireland 1982	100m	L.L. Chapman; P.J. Chapman	23/05/1980	15 Count of Droppings	Site No: R NE 54 / Type of Habitat: Running Water

Record Id	Grid	Site	Dataset	Precision	Recorder	Date	Abundance	Record comment
142028431	R613584	University of Limerick	Mammals of Ireland 2016-2025	100m	Olivia Larter	03/09/2018	Sighting of live animal	Limerick
146314366	R614595		Atlas of Mammals in Ireland 2010-2015	100m	Seamus Hassett	02/09/2010		otter spraint
124891320	R614595	River Blackwater at Gilloge Bridge	Otter Survey of Ireland 1982	100m	L.L. Chapman; P.J. Chapman	23/05/1980	1 Count of Droppings	Site No: R NE 56 / Type of Habitat: Running Water
128249360	R614595	Blackwater / Gilloge Bridge	Otter survey of Ireland 2004 & 2005	100m	Mike Bailey	29/11/2005	1 Count of Droppings	Canalised section of the Blackwater River at Gilloge bridge, with second channel running alongside main river. Land between channels used for keeping horses, otherwise general grazing areas. / 1 old spraint on rock just d/s of side channel

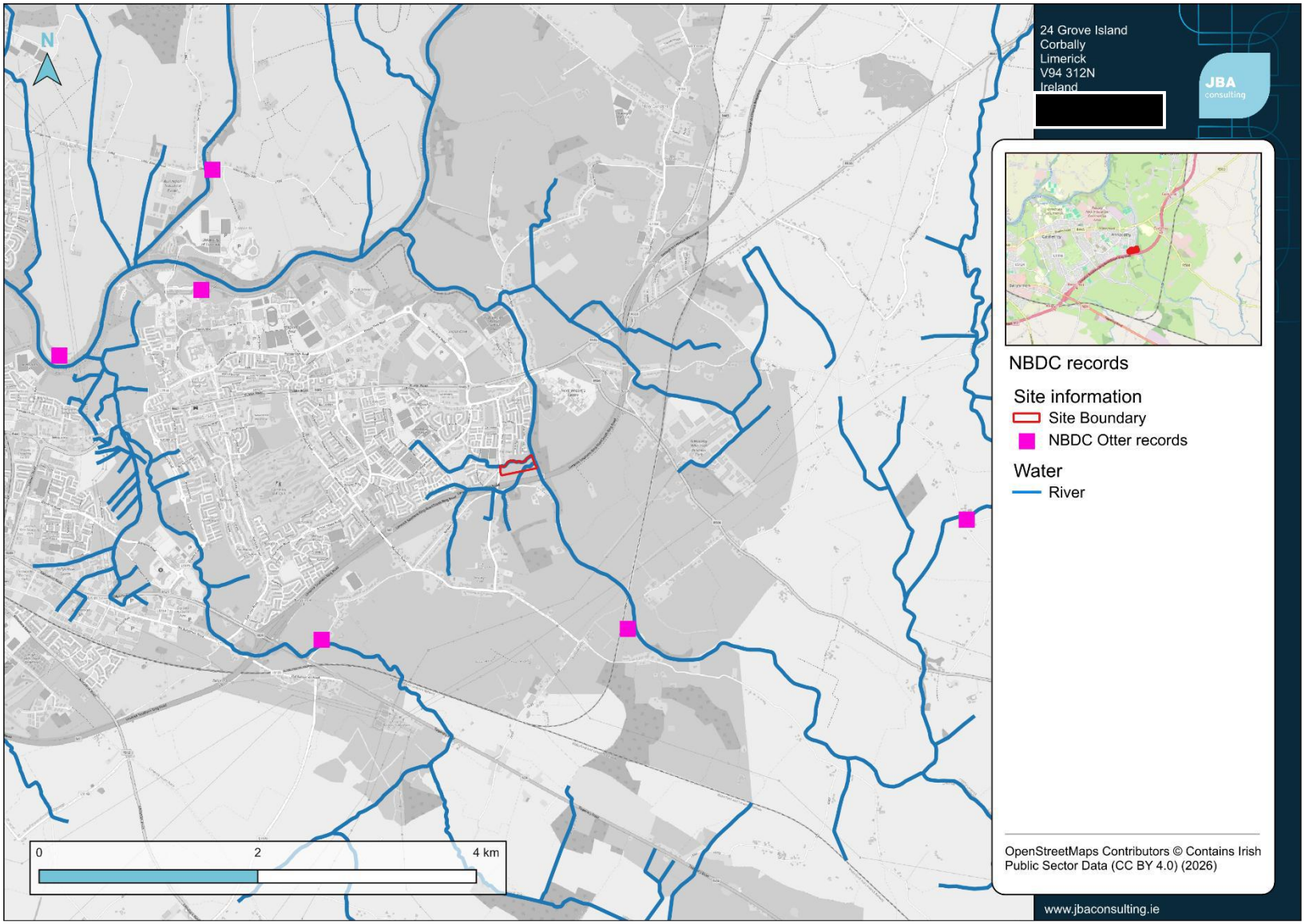


Figure 4-7: NBDC records centred on Annacotty

4.2.2 Status of the species in the local/regional area

The 2023-2024 national Otter survey indicates that Otter is widespread, with a stable population and that Ireland remains a stronghold for the species. The Overall Status assessment remains Favourable, and the stable trend is a change from the improving trend recorded in 2019. (NPWS 2025b, 2025a)

Following corrections for survey bias, the 2023-24 Otter population was estimated at 6,635 adult females [95% 6,050 – 7,171] (Reid et al. 2025). The current population is considered to be within 5% of Favourable Reference Population.

On a local scale, no known local population assessments have been carried out; However, Otter are known to occur in the Shannon in Limerick city (e.g. documented on social media, presence recorded in the last national survey), and they are known to occur in the Mulkear. NBDC records indicate that Otter have been recorded in the area for over 40 years. Local ecologists who have been recording wildlife in and around Annacotty, have documented Otter repeatedly since at least April 2020 (Ecofact YouTube channel), this includes both adult and young individuals. Recent surveys for the Annacotty weir removal project also recorded presence of Otter, and a holt on the Mulkear in Annacotty.

Whilst no population estimates are available for the catchment, Otter hold a territory on the Mulkear in Annacotty, and evidence of breeding in the area is also recorded. The historic records and the more recent 6 years of documented Otter in the area, with young recorded in multiple years would suggest that breeding and successful rearing of young occurs.

4.2.3 Field results

4.2.3.1 Northern Boundary

Surveys along the Northen boundary stream did not record any signs of use by Otter; no prints, spraints, sign heaps, holes were recorded. A trail used by local cats was recorded going to the housing estate on the north side of the boundary.

Camera 1 deployed at the confluence of the Mulkear and north boundary stream was triggered 1612 times, between 07/05/2026 and 19/06/2026, recording Shrew *Sorex spp*, Mouse *Apodemus sylvaticus*, Rat *Rattus norvegicus*, Fox *Vulpes vulpes*, Pine Marten *Martes martes*, Otter *Lutra lutra*, Birds, Cats *Felis catus*, Dog *Canis familiaris* and humans.

Shrew, Mouse and Rats are grouped as Rodents.

Table 4-3: Camera 1 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Bird	467	29.0
Environmental	772	47.9
Fox	64	4.0
Otter	**112**	**6.9**
Human	5	0.3
Dog	10	0.6
Cat	75	4.7
Pine Marten	13	0.8
Rodent spp.	94	5.8

Individual Otters were recorded on 10 different occasions over 8 days, corresponding to ~7% of the recorded activity on this camera trap. Otter was recorded exiting and entering the water, with prey (fish), and scent marking.

4.2.3.2 Mulkear Left Bank

Surveys along the left bank recorded spraints under the bridge, as well as prints along the visible patches of sediment along the base of the riverbank.

Camera 2 deployed at the exposed sediment patch was triggered 484 times, between 29/05/2026 and 19/06/2026, recording Fox, Birds, Cats, Dog and humans.

Table 4-4: Camera 2 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Bird	138	28.5
Environmental	102	21.1
Fox	55	11.4
Cat	181	37.4
Rodent spp	4	0.8

Camera 3 trap deployed at the trail leading to the hollow was triggered 3297 times, between 07/05/2026 and 19/06/2026, recording Fox, Birds, Cats, Dog and humans.

Table 4-5: Camera 3 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Bird	60	1.8
Environmental	993	30.1
Fox	156	4.7
Human	33	1
Dog	12	0.4
Cat	2043	62

4.2.3.3 Mulkear Right Bank

Surveys along the right bank recorded spraints and prints along the visible patches of sediment along the base of the riverbank. This riverbank is characterised by woodland cover with patches of dense undergrowth.

Camera 4 deployed at the trail leading to the hollow was triggered 1009 times, between 05/06/2026 and 06/07/2026, recording Fox, Birds, Shrew, Mouse, Rat, Pine Marten, Badge *Meles meles*, Mink *Neogale vison*, and Otter. The initial positioning of the camera yielded 138 triggers between 15/05/2026 and 05/06/2026, with 42% of the triggers caused by environmental effects, 49% by Fox, 0.7% by bird, and 8.7 by human. These data are not tabulated in the following table.

Otter activity recorded in this location included a male Otter emerging from the river, investigating the hollow in the tree and then leaving. Two Otter were also recorded individually or as two individuals, running along the riverbank, investigating the hollow in the tree, emerging and returning to the water.

Table 4-6: Camera 4 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Bird	660	65.4
Environmental	162	16.1
Badger	9	0.9
Otter	**37**	**3.7**
Pine Marten	6	0.6
Mink	18	1.8
Rodent spp	93	9.2
Fox	24	2.4

The Otter recorded likely represent three distinct animals, a young animal/ or a female and a male. These were recorded at different times, but obvious morphological differences were visible.

Camera 5 that was deployed in an area with hollows in the ground was triggered 129 times, between 05/06/2026 and 03/07/2026, recording rodents and Fox.

Table 4-7: Camera 5 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Rodent spp	72	55.8
Environmental	33	25.6
Fox	24	18.6

Camera 6 was deployed in an area along the right bank covering an access to the river and to holes in the riverbank was triggered 1336 times, between 05/06/2026 and 03/07/2026, recording invertebrates, rodents, Red Squirrel, Pine Marten, Otter and birds.

The Otter trigger was of a single event, with the animal moving rapidly across the edge of the frame.

Table 4-8: Camera 6 triggers, numbers and proportion of total

Trigger	Count	Percentage Total
Invertebrates	8	0.6
Rodent spp	182	13.6
Environmental	1005	75.2
Bird	132	9.9
Pine Marten	2	0.1
Red Squirrel	5	0.4
Otter	**2**	**0.1**

4.2.3.4 Ad-hoc riverbank check

The survey along the riverbank covering the section between the northern boundary of the survey area and the Weir in Annacotty recorded the presence of two potential holts/ resting places, with signs of use.

4.2.3.5 Summary

Surveys carried out for the Proposed Development recorded signs of Otter using the Mulkear.

No signs of resting places were recorded along the left bank; signs of use in the form of prints, and spraints, and foraging (Otter recorded with fish) were noted.

A potential resting place is noted in the hollow of a tree on the right bank; this is an above ground resting places in the base of a tree trunk with an opening both on the eastern and western side of the trunk. The western side faces the river, whilst the eastern side is obstructed from view by some Snowberry. This feature is approximately 25m to the east of the red line boundary, and on the opposite side of the Mulkear.

Otter, Mink, Badger, and Pine Marten interacted with this feature. Otter and Mink were both recorded entering and leaving the feature but not recorded resting there.

Two potential resting places are recorded 480 m and 550m from the site, on the right bank.

Following review of the 8,005 events triggering the cameras, at least three distinct individual Otter were recorded. This likely corresponds to one adult male, one adult female and a young dependent Otter. The right bank of the river is undeveloped, with a wide stretch of woodland that is relatively undisturbed due to limited access. Activity recorded on this bank include interactions between different individuals and multiple distinct Otter using the area.

The left bank of the river presents some areas where Otter can emerge, but the use of the site was discreet with Otter emerging from the water and return to it soon after.; this riverbank is developed, with housing and access along the riverbank. Camera trap records indicate high usage of the area from domestic animals which may explain why Otter usage of the area seems more sporadic.

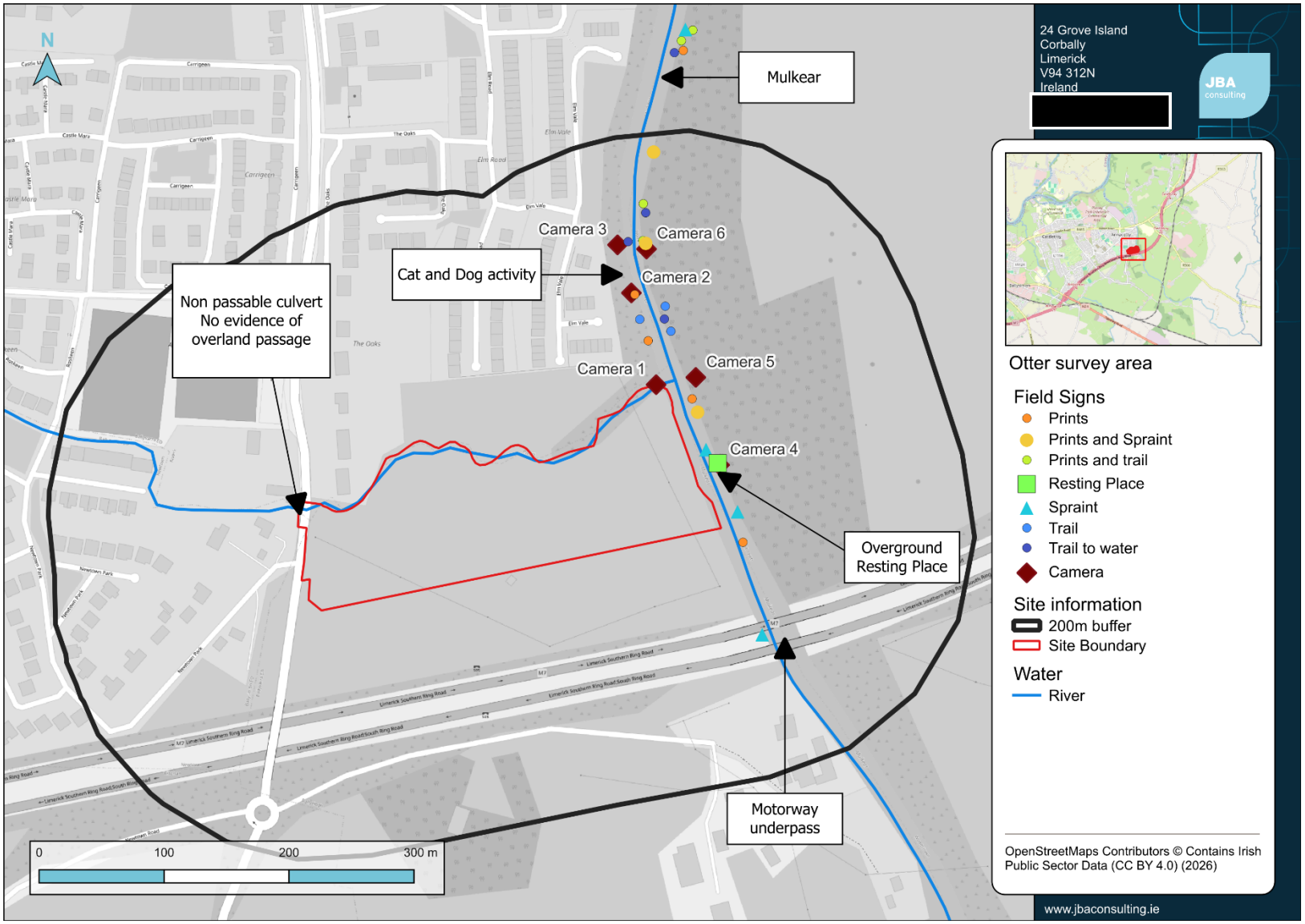


Figure 4-8: Summary of activity records



Figure 4-9: Potential resting place in tree hollow

4.2.4 Population size class assessment.

Otter are solitary mammals, with males and females living apart except in times of mating; Female Otter raise their cubs and feed them for about 1 year, with no male Otter input. Male territories may be vast, with female territories much smaller and often using core areas. Some overlap between female territories may occur. Female Otter care for the young

An existing holt in proximity to Annacotty Weir (~500m north of the site of Proposed Development).

Publicly available information indicates that Otter breed in the area. Camera trap footage from surveys carried out for the Proposed Development indicate the presence of at least three individual Otter. Two individuals are likely to be a mother and young. An adult male was also recorded on camera. This individual likely holds an overreaching territory covering one or multiple female territories within it.

The National Otter survey recorded positive site further up the Mulkear river, and on the Shannon; surveys, unrelated to this project, carried out further upstream on the Mulkear confirmed the presence of Otter.

Overall, this would indicate that Otter are likely occupying multiple territories along the Mulkear and Shannon, with evidence to suggest breeding occurs.

5 Evidence to support derogation

5.1 Test 1 - Reason for derogation

The Economic and Social Research (ESRI) Institute projects the population of Ireland to rise to approximately 6.1 million by 2040. Based on population projection estimates, Ireland needs an annual average of 44,000 housing units to keep up with structural demand (Bergin and Egan 2024). That need for housing is dependent on the factors that affect housing production, such as land, labour, capital, and the lead-in time for the development of housing.

Limerick's target for delivery of new homes under ''Housing for All'' is 2,693 homes from 2022-2026. 2021 Indicative data used for the Housing Delivery Action Plan 2022-2026 shows that 979 households are on waiting list in Annacotty, Ballysimon, Castletroy (undivided area unit in the Action Plan), with a target of 472 new units with only 40% approved. The Limerick City and County Development Plan 2022-2028 Volume 2 - Settlements and Zoning Maps places Annacotty within the boundaries of Limerick City and Suburbs, and lists 160 sites zoned Residential. The lands are zoned new residential in the Limerick City and County Development Plan (site 159), with a target density of at least 35 units/ ha (LCCC 2022). The Proposed Development will deliver housing (105 units) and a creche to cater for the needs of the growing population in Limerick.

This project is in line with the objectives for housing under the national and county level objectives for housing, and utilises a site which is zoned for residential development.

The Proposed Development may lead to noise disturbance during the construction phase and therefore a derogation licence for temporary disturbance is required. Mitigation measures to limit noise disturbance are required, and the derogation licence allows for an extra layer of oversight.

5.2 Test 2 - Absence of alternative solutions

Alternative solution to the Proposed Development have been considered including a Do-Nothing impact where the site remains in its current state, different buffer widths between the watercourses and the construction areas, change in land use, alternative layout designs. These are presented in Table 5-1. Mitigation measures are proposed and will be implemented to minimise the risk of disturbance.

The Proposed Development lands are part of the available land bank zone for residential purposes in Limerick City and suburbs. Alternative use of the site and layouts were considered in order that derogation would not be necessary.

Design features include maintaining a 20m buffer to the watercourses to help minimise risk of disturbance, however this may not be sufficient should Otter establish a resting place in the vicinity of the works site.

Table 5-1: Alternatives considered to the Proposed Development

Alternative	Impact on Otter	Pros	Cons	Likelihood
Do Nothing	Potential for improved habitat.	Semi-natural area retained; agricultural use	Shortfall in housing target; agricultural use could lead to run off issues	Unlikely; the lands are zoned residential, and part of the available landbank in Limerick
Return land to agricultural use	No change in current situation	No change in current situation	Change in in grazing regime or agricultural practices could result in site runoff	Lands are currently zoned residential; lands
Ecological restoration	Potential for improved habitat.	Semi natural area restored. No risk of disturbance to Otter	Shortfall in housing target; area along the river likely to still be used at current levels.	Unlikely. the lands are zoned residential, and part of the available landbank in Limerick. Whilst restoration programmes are in place, this plot of land is not the most likely candidate site
Alternative design 1: 150m buffer	Potential impact from development unlikely due to buffer size	No risk of disturbance to Otter	Site not suitably sized	Should these buffers be applied, no building would occur; unlikely to be a reasonable outcome.
Alternative design 2: 100m buffer	Potential impact from development unlikely due to buffer size	No risk of disturbance to Otter	Site not suitably sized	Should these buffers be applied, no building would occur; unlikely to be a reasonable outcome.
Alternative design 1: 150m buffer Mulkear only	Potential impact from development unlikely due to buffer size	No risk of disturbance to Otter	More than 50% of the site becomes unavailable	Unlikely to meet required density targets for housing; unlikely to sufficiently address housing shortfall; project unlikely to be economically viable.

Alternative	Impact on Otter	Pros	Cons	Likelihood
Alternative design 1: 100m buffer Mulkear only	Potential impact from development unlikely due to buffer size	No risk of disturbance to Otter	More than 30% of the site becomes unavailable	Unlikely to meet required density targets for housing; unlikely to sufficiently address housing shortfall; project unlikely to be economically viable.
Alternative layouts	Reduced risk of disturbance	Limited risk of disturbance	Unlikely to meet housing and development plan standards with regards to garden sizes, open space, etc.	Various iterations of the layout have been considered at the design stage, and discussed with the local authority. The proposed design meets the required density and has been drawn up following consultation at the pre-planning stage. Alternative layouts had similar likelihood of disturbance to otter.
Existing Design with mitigation measures	Reduced risk of disturbance / Disturbance unlikely	Limited risk of disturbance	Disturbance may still happen	Mitigation measure will be implemented with ecological clerks of work oversight. Monitoring of Otter activity along the river throughout. Liaison with NPWS and update on need for derogation licence. Likelihood of significant disturbance reduced via implementation of mitigation measures.

5.3 Test 3 - Impact of a derogation on conservation status

The stretch of the Mulkear adjacent to the site is likely part of the territory of an adult female Otter; evidence of breeding on the Mulkear is noted from these surveys, and from publicly available information. This area is also likely part of the wider territory of a male Otter

Within 200m of the red line boundary of the Proposed Development, one potential resting place has been recorded. This resting place is above ground, making unsuitable as a natal den. Otter may use it to rest between bouts of activity. A potential holt is noted approximately 500m to the northeast of the site, on the opposite side of the river.

As a result of the Proposed Development, no known resting places will be lost (damaged, or destroyed), and none of the habitat currently known to be used by Otter will be lost. The Proposed Development will not result in the closure or removal of Otter resting place or holt.

This is because no resting places were recorded within the red line boundary at the time of the site surveys, and no resting places were recorded on the left bank of the Mulkear at the time of the surveys.

On the right bank a potential overground resting site is located approximately 25m away from the red line boundary (and approximately 50m from the closest construction). This site will not be damaged or destroyed as it is on the opposite side of the river, beyond the red line boundary of the Proposed Development site, and no ex-situ works are planned or necessary, and no works are planned or necessary on the right-hand bank of the river. Otter resting in this site, at the time of construction, may be disturbed by loud sudden noises.

The presence of a resting place on the opposite side of the river, and the retention of a 20m design buffer to the river indicates that disturbance to otter will be temporary and confined to the construction phase. This temporary construction disturbance is unlikely to permanently harm Otter or Otter population in this stretch of the river Mulkear. This is because the potential resting place is small, exposed, and Otter are unlikely to spend significant amounts of time in that location. This is supported by the footage reviewed in the camera trap footage collected to date, which indicates limited use of the area.

However, a suite of mitigation measures will be implemented to minimise and mitigate any potential disturbance. Further mitigation measures will be implemented to prevent construction and long-term impacts to supporting habitat.

Derogation would ensure that the roles and responsibilities of the site ecologist are codified in such a way that they must report all findings to the NPWS; this will provide an extra layer of oversight ensuring that mitigation measures are applied, and that should Otter be found to use the area at anytime during the construction phase, rapid action can be taken to protect them and ensure they are not disturbed.

5.3.1 Proposed mitigation measures for noise and vibration

- The main contractor is required to monitor the baseline noise levels at the site prior to commencement of the project, with a noise monitoring regime being developed for the duration of the construction works on site.
- Prior to construction, a survey will be carried out along the Mulkear River within the 150m disturbance buffer to check for signs of Otter to ensure no breeding holts are disturbed. This survey, and any subsequent follow ups shall follow the most up to date guidelines and /or methods described in The Otter Field Survey & Monitoring Handbook.
- Vibration limits will be applied for the duration of the construction works are set out in BS 5228-2:2009+A1:2014 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385: 1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration).
- A specialist sub-contractor shall also be engaged by the main contractor to monitor, collate and report on noise and vibration results for the duration of critical work activities, as part of a Noise and Vibration Management Plan (NVMP).

- Installation of an acoustic barrier along the river. The construction of the screen should be such that there are no gaps or openings at joints in the screen material and shall be of sufficient height (2.5m or more). Screens constructed of materials with a surface mass greater than 10kg/m2 typically offer adequate sound insulation performance. The effectiveness of the screen is limited by the sound transmission over the barrier rather than the transmission through the barrier itself.
- No nighttime construction lighting, and no lighting to shine directly onto the watercourse.
- No nighttime works. If this is unavoidable an acoustic barrier shall be installed around the works areas.
- Construction plant shall be switched off when not in use.
- Construction plant shall be maintained to ensure that machinery operates at its designated quietest.
- Low-noise construction plant and equipment shall be used, using hybrid or electric powered machinery where feasible.
- Acoustic enclosures shall be used where necessary to isolate noise (e.g. around generators).
- No night lighting, and no operational phase lighting shall be directed towards the watercourses.

5.3.2 General avoidance measures

General avoidance measures that will be incorporated by the contractors working on site include:

- Limit the hours of working to normal daytime hours, to limit disturbance to nocturnal and crepuscular animals.
- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wires or bags in which animals can become entangled.
- Any pipes will be capped when not in use (especially overnight) to prevent local fauna becoming trapped.
- Any excavations will be covered at night to prevent animals falling and getting trapped. If that is not possible, a strategically placed plank at an angle no greater than 45 degrees will be placed to allow animals to escape.

5.3.3 Water quality measures

As per the County development plan, a 20m buffer shall be maintained along the riverbank, as measured from the top of the bank. This buffer will be free of works, and not used for storage of materials or vehicles, nor for the setup of any site compounds. It will be fenced off so that no machinery can accidentally track through.

The buffer will be retained with its existing vegetation. The grass cover will play a role in retaining any surface waters and help filter out sediment before any water naturally rejoins the river. This buffer should be sufficiently wide to serve this purpose. If during site monitoring the ECoW records sediment ingress into the watercourses, then targeted measures shall be applied.

Targeted measures include but are not limited to:

- Silt curtains / silt barriers
- Vegetated bund to prevent runoff
- Ditch/ pool features to retain water and slow runoff
- Surface water runoff from areas stripped of topsoil and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sedimentation laden runoff prior to discharge of surface water at a controlled rate.
- Pipe ends associated with surface water network should be blocked / capped off until connected to the completed storm-water system.
- Surface water network will be clean and clear of sediment/ polluting materials before connection to the northern boundary stream.
- There will be no works done on the riverbank, and no materials will be disposed of into the river.
- Wash waters will not be permitted to drain into the river.
- The river shall not be used as a water source for site related activities or to wash equipment.

- A dust minimisation plan will be formulated for the construction phase of this project.
- The main contractor shall put in place a regime of dust monitoring in the vicinity of the site.
- The main contractor shall monitor dust during construction to ensure the limits are not breached throughout the project.
- SUDS, oil and silt interceptors on the surface water drainage network to prevent water pollution

5.3.4 Physical retention of all commuting and foraging routes

The riparian corridor along the stream and river and the existing trees will be retained. All mature trees are to be retained.

The riparian corridor along the Mulkear will be left untouched and no trees are to be felled, pruned, trimmed or otherwise interfered with. An undisturbed vegetated buffer of at least 20m will be maintained along the eastern boundary at all times.

Vegetation along the northern stream will be cut to allow the installation of the surface water outfall. Following installation, the area will be re-vegetated to ensure continuity in the treeline.

There will be no permanent lighting in the riparian zone.

6 Monitoring the impacts of the derogations

6.1 Verification of implementation

In order to verify the implementation of derogations and mitigation, all on-site works will be overseen and monitored by a site ecologist/ a team of ecologists. The ecologist will oversee the implementation of the mitigation measures included in the EcIA, NIS and CEMP and any other ecological requirements as part of the planning conditions and/or the derogation licence. The ecologist will have the power to give a stop works notice, should it be required. This will allow for the application of any corrective measures, if they are necessary to ensure mitigation measure (e.g. defective sound barrier needing replacing).

Part of the role of the site ecologist will be to monitor the stretch of the Mulkear river within 200m of the red line boundary to record evidence of Otter and to look for signs of use of resting places. Site surveys will be carried out following guidance in Findlay and White 2026 and NRA 2006. This will include site surveys with the first visit being carried out at least 3 months prior to the start of the works to 3 months post construction.

This will provide a clear understanding of the use of the area immediately prior, during and post construction.

The ecologist will also monitor the site to ensure that working practices are in-line with required mitigation. The ecologist will brief the construction workers – and / or the fore team who will be required to brief staff – about Otter, and the obligations they have with respect to mitigation measures.

6.2 NPWS liaison

The ecologist will be responsible for providing updates on the findings to the NPWS and for updating the derogation licence as required. The updates will be in the form of annual reports providing the results of the surveys carried out, with details on methodology, findings, and implications for Otter.

The ecologist will submit licence returns and apply for new derogation licence annually for the duration of the project.

As a result of the Proposed Development, it would be anticipated that there is no net loss of suitable habitat to Otter, and therefore monitoring during and post construction is anticipated to carry on picking up signs of Otter use of the area. This may be sporadic records in line with current trends, but they may ultimately establish a new resting place in the area.

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