

PART E: 2026 European otter (*Lutra lutra*) survey for the proposed Carrigtwohill Business Park, Co. Cork, to inform a section 54 derogation application



Prepared by Triturus Environmental Ltd. for
Geaney Property Developments Ltd.

June 2026

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1. Introduction

1.1 Background

Triturus Environmental Ltd. were commissioned by Geaney Property Developments to undertake a European otter (*Lutra lutra*) survey to inform a Section 54 derogation licence application associated with the proposed Carrigtwohill Business Park development at Carrigtwohill, Co. Cork (**Figure 2.1**).

Historic otter surveys were undertaken on the 9th, 10th and 19th February 2024 to establish otter distribution, habitat use and the location of breeding and resting sites in the vicinity of the proposed development (Triturus, 2024). A total of 14 no. otter signs were recorded including 4 holts and 3 couches, albeit the majority were outside of 150m from the proposed development. However, the survey identified a single potential breeding and resting area (holt) within 150m of the proposed development footprint (Holt H2 in the current report; **Figure 2.1**).

As otter presence and activity can change over time, a follow-up otter survey was undertaken by Triturus Environmental Ltd. between the 14th-15th May 2025 to determine whether there had been any changes in otter usage within the vicinity of the proposed development. This survey confirmed that the previously recorded holt (H2) was inactive at the time of survey.

Given that approximately one year had elapsed since the previous survey, an additional otter survey was undertaken by Triturus Environmental Ltd. on 28th May 2026 to establish whether any further changes in otter activity had occurred within the study area in accordance with CIEEM guidance on data validity for mobile species. The findings indicated a marked decrease in otter activity compared to previous surveys. This reduction in otter activity was likely associated with increased utilisation of the area by seals, which may be exerting competitive pressure on otters through the use of shared foraging resources and habitat. However, two holts located at Brown Island were identified as potentially active (i.e. H4 & H6), given evidence of recent activity and fresh spraint in proximity to Holt H4 (**Figure 3.1, Table 7.1**). These potentially active holts were located outside the 150m zone of influence of the proposed development and are therefore not considered likely to be affected by the proposed works (**Figure 3.2**).

To further investigate otter activity within the study area, trail cameras were deployed at Holt H2 between 1st April and 30th November 2025. No otters were recorded during this monitoring period. The cameras were subsequently retrieved and redeployed from 1st May 2026 to the present, with no evidence of otter activity recorded to date. All camera triggers during both monitoring periods were attributed to other species, including rabbit (*Oryctolagus cuniculus*), brown rat (*Rattus norvegicus*), stoat (*Mustela erminea*) and various passerine bird species. The absence of otter detections over this extended monitoring period, combined with the absence of recent field signs, provides strong evidence that holt H2 is not actively used by otter.

At the time of writing, planning permission has not yet been granted, and no contractor has been appointed. However, current planning and nature conservation legislation (European Communities (Birds and Natural Habitats) Regulations 2011–2025) requires that any derogation relating to a European protected species is addressed during the planning process. Therefore, this derogation application is being undertaken in advance of the planning determination.

The breeding and/or resting areas of otter are protected under the Wildlife Acts 1976-2021 and are included in a system of strict protection pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) (NPWS, 2021). Therefore, given the location of the identified protected otter habitats in the vicinity of the proposed development (i.e. <150m) and given the potential for indirect effects only on otter via disturbance, a derogation licence is required under the European Communities (Birds and Natural Habitats) Regulations 2011-2021. This application is outlined in **section 5** of the report. As outlined, the current application is specific to the identified 1 no. holt site (H2).

1.2 Otter legislative protection

The Eurasian otter is a species of conservation concern and high priority, having suffered major declines in its range and population throughout Europe since the 1950s. It is classified as 'near threatened' by the IUCN Red List with a decreasing population trend and, as such, is listed in Appendix I of CITES, Appendix II of the Bern Convention (Council of Europe, 1979) and Annexes II and IV of the EU Habitats Directive (92/43/EEC).

Otters, along with their breeding and resting places, are also protected under provisions of the Irish Wildlife Acts 1976-2021. Otters have additional protection because of their inclusion in Annex II and Annex IV of the Habitats Directive 92/43/EEC, which is transposed into Irish law by the European Union (Birds and Natural Habitats) Regulations 2011-2021.

The protection of otters is outlined in Article 51(1) and (2):

Protection of fauna referred to in the First Schedule;

51.(1) *The Minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the species referred to in Part 1 of the First Schedule.*

51.(2) *Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a license granted by the Minister under Regulation 54, a person who in respect of the species referred to in Part 1 of the First Schedule (listed below). Items (b) and (d) may be considered most relevant to developments.*

- (a)** *deliberately captures or kills any specimen of these species in the wild,*
- (b)** *deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration,*
- (c)** *deliberately takes or destroys eggs of those species from the wild,*
- (d)** *damages or destroys a breeding site or resting place of such an animal, or*
- (e)** *keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive, shall be guilty of an offence.*

In an Irish context, according to the most recent Article 17 reporting (NPWS, 2025), otters remain at 'Favourable' conservation status with a stable trend. Otters were previously 'Near Threatened'

(Marnell, 2009) based on a 20-25% decline between 1980 and 2005 (Bailey & Rochford, 2006). However, the current conservation status in Ireland is now of 'Least Concern' (Marnell et al., 2019). This data was supported by the most recent Otter Survey of Ireland 2023-2024 covering 1,063 sites with otters present at 65% [95%CI 62 - 68%] of sites in ROI and 66% [58 - 74%] of sites in NI (Reid et al., 2025). The results were supportive of a ubiquitous otter distribution nationally, despite the report concluding that the occupancy had likely declined since the 1980s. Regardless of the positive national outlook overall, otters remain 'Near Threatened' at a global level according to the IUCN Red List (Loy et al., 2022).

1.3 Statement of authority

The author of this report, Ross Macklin PhD (candidate), B.Sc. (Hons) MCIEEM., MIFM, HDip GIS, PDip IPM is an aquatic, fisheries and mammalian ecologist with 21 years' professional experience in Ireland. He is director of Triturus Environmental Ltd. Ross has a B.Sc. in Applied Ecology and diplomas in integrated Pest Management and GIS. He is currently completing his Ph.D. in fisheries ecology. He has considerable experience in a wide range of ecological and environmental projects, including EIAR, EclA, CEMP and AA/NIS reporting, as well as biodiversity, water quality monitoring, invasive species, mammalian surveys and fisheries management. He also has expert identification skills in fisheries, macrophytes, freshwater invertebrates, protected species and habitats. His diverse project experience includes work on renewable energy developments, flood relief schemes, road schemes, waste management, blueways/greenways, biodiversity projects, non-volant mammal monitoring, fisheries management projects and catchment wide water quality management. He has worked extensively in Cork and Dublin on urban mammal monitoring projects and is considered an expert in his field nationally. He recently completed and was lead or co-author author of numerous catchment wide otter surveys including the Lower Lee FRS Otter Survey, Dublin City Otter Survey, Dún Laoghaire Rathdown Otter Survey, Tullamore Otter Survey, Fingal Otter Survey, River Boyne Otter Survey, Carlow Otter Survey and Monaghan Otter (in prep.) which are among the largest urban/ sub-urban otter surveys conducted in Ireland. He has also worked on several otter derogation projects that included holt closures, artificial holt construction and otter habitat restoration including management plans. Furthermore, he has worked on the first PFAS contamination studies of Irish riverine food chains, including otter, fish and invertebrates, using eDNA metabarcoding and PFAS testing at each trophic level. He has also worked on otter population genetic studies in Cork and Dublin, among the few urban otter population genetics studies carried out nationally.

2. Methodology

2.1 Otter sign surveys

An otter survey of the study area was conducted on 28th May 2026 using bank-based survey methods. The survey area encompassed the full intertidal areas northwest, west and south of the study area, including those areas south of the N25, i.e. Brown's Island and the Great Island Channel Slattery within 150m from the site boundary. It also included the Killacoyne Stream, and a localised area of tidal lagoon habitat north of the N25 (**Figure 2.1**). The extended survey approach helped to establish otter territories in order to inform habitat continuity, connectivity and core breeding/resting area locations.

The survey was completed during dry, mild, bright and settled conditions, which ensured that a good representation of habitat marked by otter could be recorded in the field, including territorial marking or marking of feeding areas. The survey also deliberately coincided with prolonged dry periods to minimise rain washout of otter signs (spraint, smears, etc.). Given the location of the survey area within the tidal reaches of the Lough Mahon (Harper's Island) estuary, the survey was undertaken during low tide, when water levels were sufficiently low to facilitate access and enable a thorough inspection of all banks for visible cues of otter activity, including breeding and resting areas. Water levels were also low (at base flows) during the survey period.

Each otter sign was logged by type, location (handheld GPS), condition and approximate age for later interpretation to distinguish differences in habitat use and activity. Spraints were subjectively assessed as either fresh (very recent), mixed-age (recent and older spraints typically indicative of a regular sprainting site) or old (spraint breaking down and not recently deposited). Furthermore, indicative counts of spraint (i.e. number of individual spraints) and the number of sprainting sites (often separate clusters in one area) were noted. This helped indicate the frequency of otter marking that would support preferential use of habitat temporally by otter and often demarcates important territory where marking frequency is high. This technique was first utilised in the Dublin City Otter Survey (Macklin et al., 2019) and has been applied in other large-scale otter surveys (Brazier & Macklin, 2020).

2.2 Total corridor otter survey (TCOS) methodology

The survey broadly followed the best practice survey methodology for otter as recommended by Lenton et al. (1980), Chanin (2003) and Bailey & Rochford (2006). However, methodology differed in that the entire waterline was surveyed rather than the standard 500-600m sections from accessible points (e.g. bridges). The novel survey technique, known as a total corridor otter survey (TCOS) (Macklin et al., 2019), encompassed the full intertidal zone adjoining the study area, inclusive of connecting tidal lagoons and freshwater stream confluences with the intertidal.

Total corridor survey methodology typically involves one or two surveyors working independently (in tandem) along the full corridor of the study area. This also facilitates one to work from a more elevated position (e.g. bank top) with one surveying (with appropriate PPE such as a dry suit or chest waders) from within the channel or along the mean high tide mark to increase the likelihood of otter sign detection. This is especially true of more cryptic signs such as holts, which can be located in undercut banks, under tree root systems, etc., out of the view of traditional surveys. Surveyors can alternate

between waterside locations and banks depending on surveyor knowledge and experience of preferential areas of habitat likely to be used by otter.

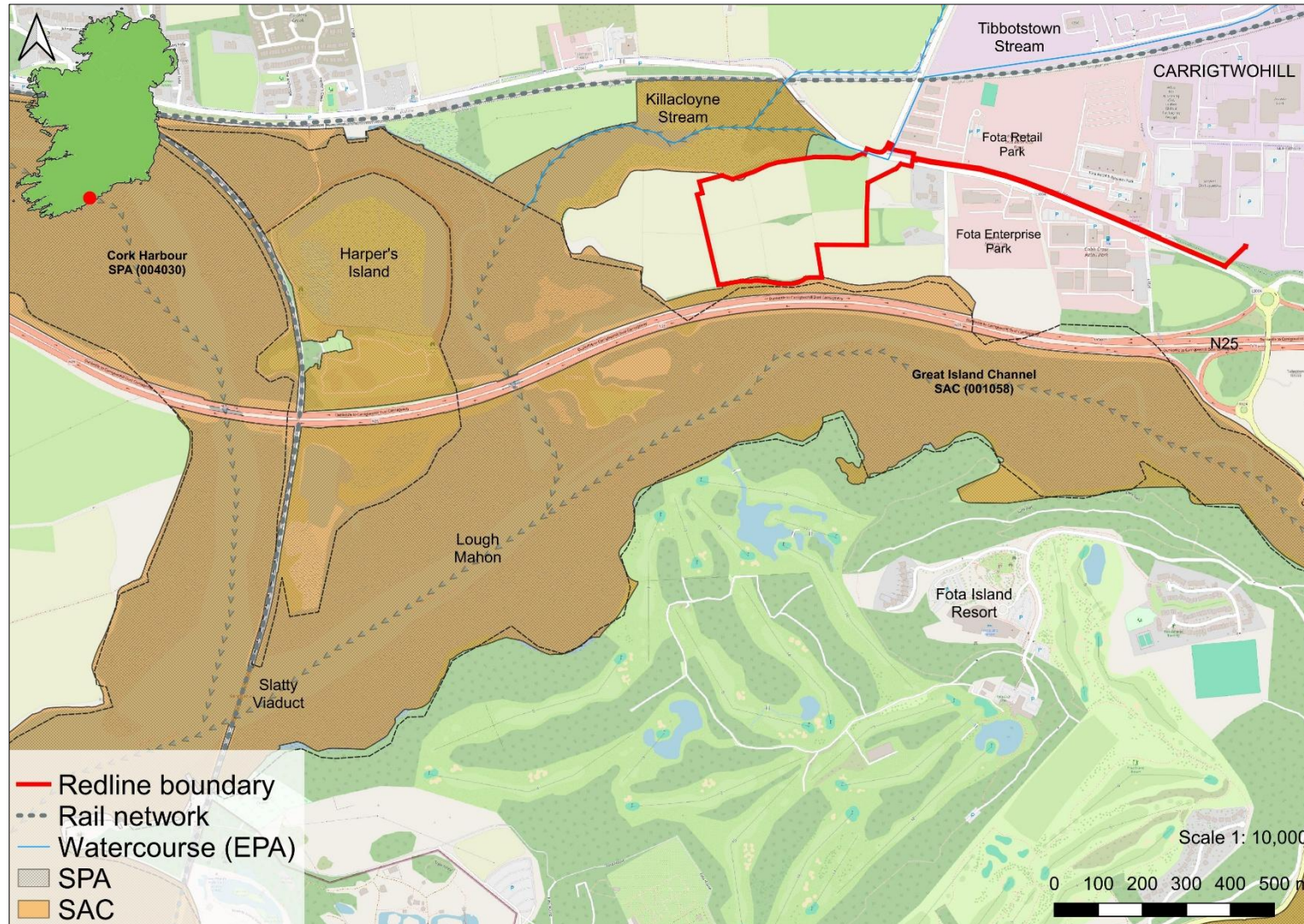


Figure 2.1 Otter survey area extent within Lough Mahon (Harper's Island) estuary at Carrigwohill, Co. Cork

3. Results

3.1 Study area

The survey area at Carrigtwohill, Co. Cork, comprised a mosaic of lowland depositing stream (FW2), tidal channel (CW2), intertidal and saline lagoon habitats (CW1). These habitats were bordered by old tidal walls (CC1), upper salt marsh (CM2), wet grassland (GS4), scrub (WS1) and hedgerow-treeline (WL1/WL2). These formed a well-connected and relatively undisturbed habitat mosaic that provided high-quality habitat for otter, including suitable foraging, commuting, breeding and resting opportunities.

The riverine habitat of the Killacoyne Stream provides eel (*Anguilla anguilla*) and brown trout (*Salmo trutta*) prey items, while the tidal channel, tidal lagoon and estuarine habitat provide flounder (*Platichthys flesus*), grey mullet (*Chelon labrosus*), sprat (*Sprattus sprattus*), sand goby (*Pomatoschistus minutus*) butterfish (*Pholis gunnellus*) and 5-bearded rockling (*Ciliata mustella*). The intertidal habitats also support a range of marine invertebrates, including harbour crab (*Carcinus maenas*) and prawn (*Palaemon serratus*), which provide dietary foodstuffs for otter.

3.2 Otter records

A total of 9 no. otter signs were recorded within the survey area during the survey conducted on the 28th May 2026. This equated to a density of 2.25 otter signs per linear kilometre of habitat over the 4km habitat survey area, including tidal lagoons. The signs recorded comprised 3 no. spraint sites and 6 no. holt sites (**Table 3.1; Figure 3.1**). The closest breeding area (i.e. holt) was located adjoining the tidal lagoon south of the study area (approximately 63m) (**Figure 3.1**). No other breeding and/or resting areas were located within 150m of the study area.

A photographic audit of the survey area, inclusive of the identified holt and couch area, is presented in **Plates 3.1-3.5** below.

Table 3.1 Summary of the otter signs recorded in the study area at Carrigtwohill

Otter sign	Total no.
Spraint site	3
Holt	6
Total	9
Density signs per linear km (4km survey area)	2.25



Plate 3.1 N25 Bridge, an area supporting regular otter spraint

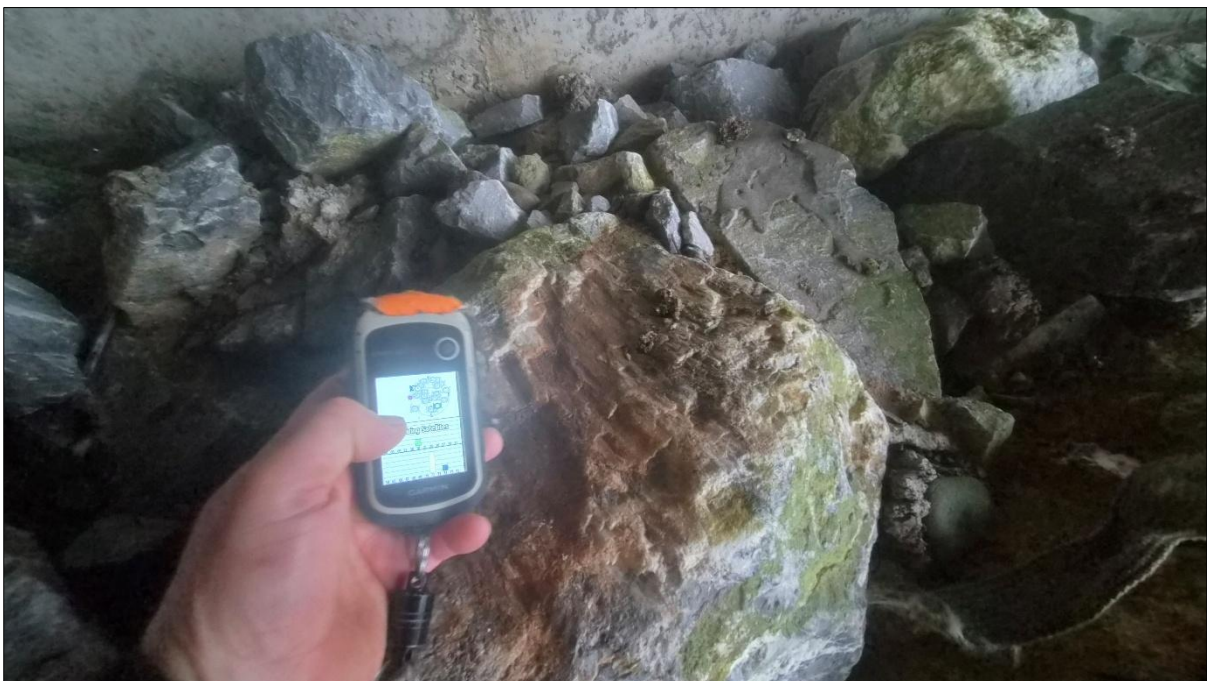


Plate 3.2 Otter spraint under N25 bridge



Plate 3.3 Otter spraint at mammal culvert north of N25



Plate 3.4 Mammal culvert connecting small lagoon to the Great Island Channel under the N25



Plate 3.5 Trail camera monitoring of otter holt (H2) subject to derogation

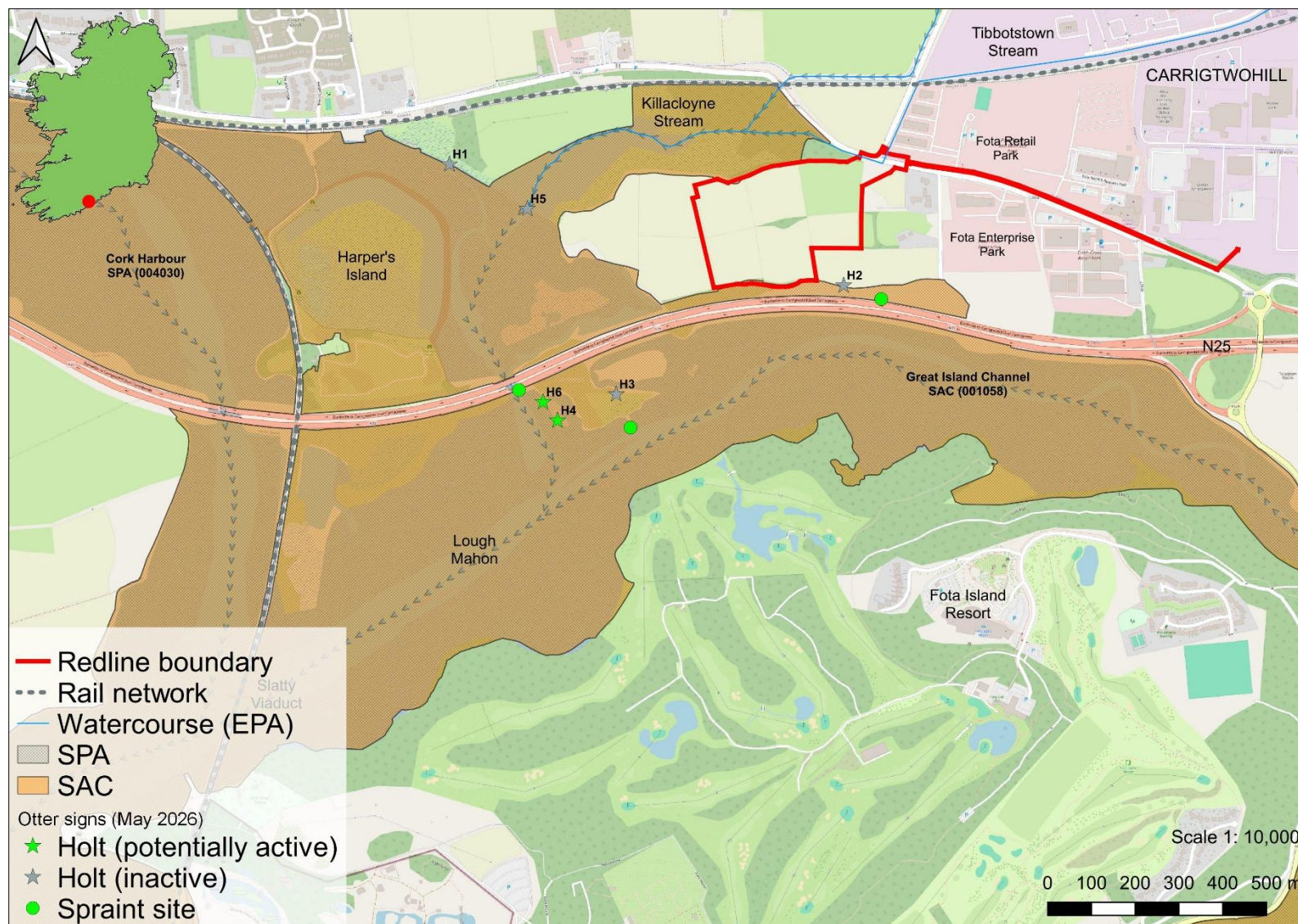


Figure 3.1 Otter sign distribution map showing otter signs inclusive of holt and spraint sites in the study area, May 2026

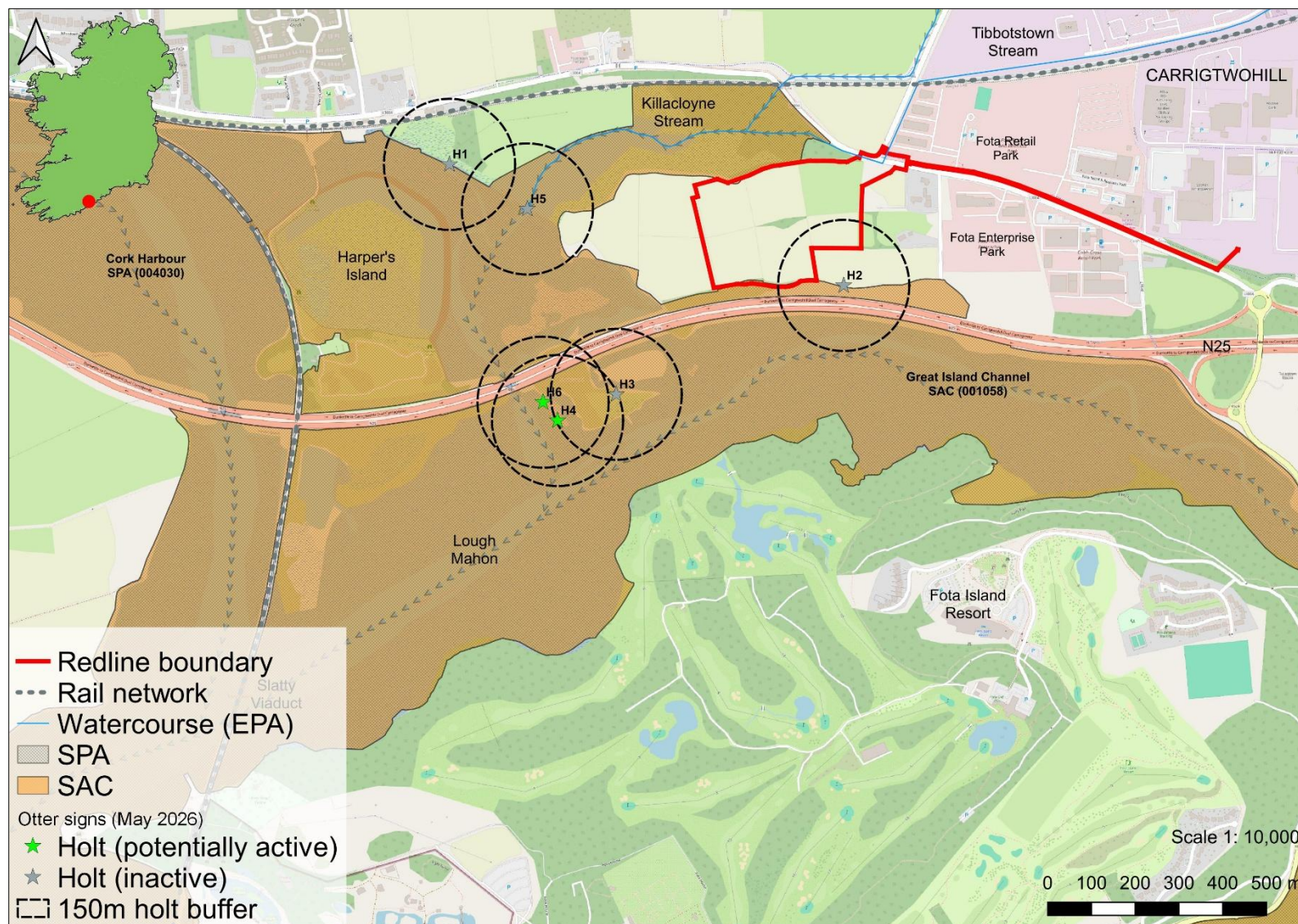


Figure 3.2 Otter sign distribution map showing the locations of the holts with 150m buffer, May 2026

4. Discussion

The May 2026 survey recorded a total of 9 no. otter signs, the majority of which were associated with breeding areas (i.e. holts), with only a limited number of spraint sites identified. Compared the initial 2024 surveys, there was a notable reduction in overall otter activity within the study area, particularly in terms of the frequency and distribution of spraint sites.

The closest holt site (H2) was located adjacent to the tidal lagoon south of the proposed development (**Figure 3.1**). This holt is situated approximately 63m from the development boundary. No other breeding or resting sites were recorded within 150m of the proposed development (**Figure 3.2**).

The reduction in recorded field signs compared to previous surveys suggests a lower level of utilisation of the study area by otters with activity concentrated in the Shallow water in vicinity of Brown's Island and eastwards in the Great Island Channel towards Slatty Water (**Figure 3.1**). This may be associated with increased utilisation of the study site by seals, which have been observed regularly within the area and may be competing with otters for foraging resources and habitat (**Plate 4.1**). However, otters continue to utilise Brown's Island and the shallower habitat to the east in the Great Island Channel, as evidenced by the presence of 2 no. potentially active holt sites (H4 & H6) (**Figure 3.1, Table 7.1**).

While a single spraint was recorded in the mammal culvert under the N25 adjoining the tidal lagoon in vicinity of holt H2, no evidence of otter activity was recorded between the 2025 and 2026 trail camera monitoring. Triggers in the vicinity of the suspected holt area were of rabbit (*Oryctolagus cuniculus*), brown rat (*Rattus norvegicus*), field mouse (*Apodemus sylvaticus*), fox (*Vulpes vulpes*) and stoat (*Mustela erminea*) (**Plates 3.6-3.8**). Furthermore, no recent field signs (i.e. spraint) were identified in the immediate vicinity of the holt during the May 2026 survey. These findings indicate that Holt H2 is not currently in use by otter.

In accordance with Transport Infrastructure Ireland (TII) buffer thresholds for otter, 150m buffers around holt areas are shown relative to the development boundary (TII, 2008; **Figure 3.2**). Otter breeding areas (holts) are especially sensitive to direct human disturbance (Mason & Macdonald, 2009), with otter reproductive success known to be higher in less disturbed habitat; hence their preferential fidelity for low disturbance areas of habitat (Brazier & Macklin, 2020; Macklin et al., 2019; Scorpio et al., 2016; Ruiz-Olmo et al., 2011; Loy et al., 2009; Kruuk, 2006).

Provided that the mitigation measures outlined in this report are fully implemented, inclusive of the relevant mitigation detailed in the Ecological Impact Assessment (Limosa Environmental, 2025, revision 2026 in prep.) and subject to the granting of a derogation licence for indirect disturbance to otter, it is anticipated that no significant adverse effects on otters will result from the proposed development.



Plate 3.5 Common seal haul-out site south of Brown's Island. The seals feed in the deeper channels at high water, particularly in vicinity of Harper's Island, May 2025



Plate 3.6 Fox with prey in the vicinity of holt H1, June 2025



Plate 3.7 Stoat recorded in the vicinity of holt H1, November 2025



Plate 3.8 Two stoats at holt H1, Little Island, June 2026

5. Derogation licence application

As outlined above, the May 2026 otter survey undertaken by Triturus Environmental Ltd. identified a single otter holt (H2) within 150m of the proposed Carrigtwohill Business Park development (**Figure 3.2**). Holt H2 is located adjacent to a tidal lagoon approximately 63m from the proposed development boundary. No other otter breeding (holt) or resting (couch) sites were identified within 150m of the proposed development. Therefore, the current derogation licence application relates to the potential indirect disturbance of holt site H2 only as a precautionary measure.

Otters, along with their breeding and resting places, are protected under provisions of the Irish Wildlife Acts 1976-2021 and pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) as an Annex IV species and indirect disturbance is possible.

Potential impacts are limited to temporary and indirect disturbance of the identified holt site, should it be active at the time of construction works, due to its proximity to the proposed development. As such, a derogation licence will be required in advance of any works in this area as per Article 16 of the Habitats Directive and Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations, 2011-2021.

A mitigation-by-design approach has been incorporated into the proposed development to avoid and minimise potential impacts on otter and their supporting habitats. The site layout has been designed to minimise encroachment into the adjoining tidal lagoon, estuarine habitats and associated riparian corridor, thereby reducing the potential for habitat loss and disturbance to otter. In addition to the mitigation measures outlined within the Ecological Impact Assessment (Limosa Environmental, 2025, revision 2026 in prep.), including construction best practice measures for the protection of water quality and aquatic habitats, a range of otter-specific mitigation measures will be applied to reduce disturbance and impacts to otter. These are outlined in section 5.1 below.

Given the likely unavoidable disturbance to the breeding and/or resting places of otter in areas adjoining the proposed development, a derogation licence is requested for the proposed works, with the following details:

Applicant: Cork Retail and Tourist Developments Ltd.

Supervised by: Ross Macklin of Triturus Environmental Ltd, Unit 5 Anchor Business Park, Little Island, Co. Cork, T45 XN59.

Species: European otter (*Lutra lutra*)

Activity: Carrigtwohill Business Park development

Timeline: 1st July 2026 – 31st December 2026 (covering the annual period of a permitted derogation consent)

5.1 Test 1 - Justification for Derogation

5.1.1 *Explanation as to why the derogation licence sought is the only available option for works and no suitable alternative exists as per Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations.*

The derogation is sought under **Article 16(1)(c)** of Regulation 54(2) given that the proposed works are;

- ***(c) In the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.***

The derogation is required given the location of the identified otter breeding and resting area (i.e. holt H2) that is in close proximity to the proposed Carrigtwohill Business Park footprint. There is no alternative option but to proceed with the development in the vicinity of the identified potential breeding and resting areas. Although any holt closure has been avoided through the design process, indirect disturbance during the works will be unavoidable. As outlined in section 5.2 below, no suitable alternative designs or locations for the development exist.

Avoidance and mitigation measures are summarised below in section 5.3.3. The disturbance impacts of the works on the identified otter breeding areas cannot be fully avoided or mitigated, considering the proximity to and nature of the proposed works. Justification for the project in the interests of public health, public safety, including social, economic and beneficial consequences of primary importance for the environment, is summarised below.

Social & Economic Public Interest

The site is located within the Carrigtwohill development boundary. It is located within the 'Business and General Employment' zone under the CT-B-02 Land Parcel in Volume 4 of the Development Plan. County Development Plan Objective 18-15 states that the aim for Business and Employment is to:

"Promote the development of New Business and General Employment Areas as the primary locations for the development of employment uses such as light industry, wholesale and non-retail trading uses, car showrooms and small/medium scale manufacturing/repairs/warehousing/distribution/logistics."

Policy 18.3.39 notes that light industry is an appropriate use in Business and General Employment Areas:

"Light industry wholesale and non-retail trading uses, car showrooms and small/medium scale manufacturing/repairs/warehousing/distribution uses, logistics, incubator units, childcare facilities, fitting and business and business activity."

Furthermore, this 'Business and General Employment Area' forms part of the CT-B-02 Land Parcel identified in Volume 4 of the Development Plan. It is stated that the objective for this land parcel is as follows:

"Business development. Proposals shall optimise connectivity with the proposed rail passenger station at Fota Business and Retail Park, particularly for pedestrians and cyclists, and to the Bury's Bridge to Carrigtwohill cycleway. This land adjoins the Cork Harbour SPA and Great Island Channel SAC."

Appropriate buffering and screening between new development and the SPA and the SAC will be required. Areas within this zone may be used by Special Conservation Interest bird species for which the Cork Harbour SPA is designated. Account will be taken of same when considering new development proposals in the area.”

A small proportion of the site is located within the zoning labelled ‘Existing Residential/Mixed Residential and Other Uses’. This is to facilitate access to the proposed development through the upgrade of an existing agricultural entrance. A legal opinion has been provided by Michael Furrminger BL, which states that it is strongly arguable that the proposed entrance to a business park within a residential zoning is not in contravention of the relevant zoning.

The eastern tip of the red line boundary encroaches into the ‘Industry’ zoning, located to the north of L-3004. The red line boundary travels along the L-3004 road in an easterly direction to facilitate the provision of a new water main. **Figure 5.1** shows the subject site in relation to its zoning:



Figure 5.1 Site Location in relation to zoning criteria in the Cork County Development Plan 2022-2028. Basemap: Cork County Development Plan 2022-2028.

Zoning Objective

The development of the subject site for a business park is in compliance with the ‘Business and General Employment’ zoning, for which the vast majority of the subject site pertains to (shown in purple in Figure 1). Section 10(1) of the Planning and Development Act 2000 (as amended) discusses the content of Development Plans:

“A development plan shall set out an overall strategy for the proper planning and sustainable development of the area of the development plan and shall consist of a written statement and a plan or plans indicating the development objectives for the area in question.”

Section 10(2) states that the development plan shall include objectives pertaining to the zoning of land:

*“the zoning of land for the use solely or primarily of particular areas for particular purposes (whether residential, commercial, industrial, agricultural, recreational, as open space or otherwise, or a mixture of those uses), where and to such extent as the proper planning and sustainable development of the area, in the opinion of the planning authority, **requires the uses to be indicated.**”*

Accordingly, it is the opinion of the Planning Authority that the subject site needs to be developed for a 'Business and General Employment' use to meet the requirements for the proper planning and sustainable development of the area. On this basis, the 'do nothing' option (i.e. the site remaining agricultural) would not deliver on an objective which, in the opinion of the planning authority, is needed for Carrigtwohill.

5.2 Test 2 - Assessment of Alternatives

Alternative Locations

There are no alternative sites available to the client which could accommodate the subject development. Alternative sites in Carrigtwohill, which are in the ownership of the client, are either not zoned accordingly for the development of a business park or cannot facilitate the development of same as they have been already built on. It is noted that across Carrigtwohill, there are a number of sites which are zoned for 'Business and General Employment'. The development of a Business Park on these sites would be acceptable in principle. However, many of these sites are already developed and therefore do not have the necessary capacity to facilitate the development of a business park.

There are some alternative sites in Carrigtwohill, which are greenfield in nature, or are vacant, and are zoned for 'Business and General Employment'. However, these sites are not in the ownership of our client. Therefore, it is not possible for our client to develop the business park at these locations. Additionally, it is worth noting that some of the undeveloped sites in Carrigtwohill have existing planning permissions attached to them. Accordingly, it is assumed that these sites will be developed for this use, thus making them unavailable as an alternative location for this development.

Alternative Design

Throughout the course of the project, the design of the scheme has been amended to give regard to ecological considerations. In total, there have been 17 iterations of the Site Layout to date. While not all amendments have resulted from ecology, the five layouts appended to this note show how the buffer zones have changed as the layout has developed, and how increased planting has been incorporated into the scheme. Also appended with this note is the landscape plan submitted with the original application, which supported ecological connectivity across the site.

Site Layout Plan Rev 1 shows a buffer zone of less than 15m between the developable area (i.e. yard space / buildings etc) and the northern boundary of the site, a buffer of less than 10m from badger sett and less than 150m from the otter holt. This iteration of the Site Layout Plan included landscape berms (with no planting) on the northern and southern boundaries.

Site Layout Plan Rev 2 shows a buffer of less than 15m between the developable area and the northern boundary of the site, a revised buffer of 20m between the badger sett and Unit 6 and a buffer of less than 150m from the otter holt and the developable area. This iteration of the layout removed the landscaped berms at the northern and southern boundaries and instead provided native planting buffer at the northern boundary of the site. Along the western boundary of the site, a 3m high berm planted with native trees was introduced at this stage. On the southwestern section of the site, a 15m buffer of primary native trees was introduced, with an 8.5m buffer of same at the southeastern section of the site.

Site Layout Plan Rev 5 shows a buffer of less than 15m between the developable area and the northern boundary of the site, a buffer of 20m between the badger sett and Unit 6 and a buffer of less than 150m between the otter holt and the developable area. This iteration of the Site Layout also increased the planting on the southern boundary of the site to 10,015sqm (approx. 1.002 hectares). The southern boundary also includes a buffer, which extends up to 48.5m in parts between the developable area and the edge of the site boundary.

Site Layout Plan Rev 10 shows a buffer of less than 15m between the developable area and the northern boundary of the site, a buffer of 20m from badger sett and less than 150m from the otter holt. This iteration of the layout removed the berm on the western boundary of the site and instead opted to retain the existing mature native hedgerow and habitat, while supplementing it with additional native shrub and tree planting. The native tree planting on the southern boundary of the site was increased to 1.72ha.

The landscape plan submitted with the planning application comprised a mixture of Ornamental Mix 1 (1-2m high), Ornamental Mix 2 (0.5m-1m high), White Flowering Meadow, Native Groundcover Under Planting, Native Woodland Planting and Bulb Planting. This demonstrates that appropriate landscaping, and ecological connectivity has been considered as part of the scheme. This landscaping plan will be updated as part of the final RFI submission.

The iteration of the Site Layout Plan dated 19th January 2026 (RFI Rev 3) showed a buffer of 15m at the north of the site between the site boundary and the developable area at the north of the site. All retaining walls, service yards, buildings & parking areas are all located outside of this 15m buffer zone. It shows a buffer of greater than 30m between the badger sett and the developable area. It also shows a buffer of approximately 138m between the otter holt and Unit 2 at the southeast of the site. Furthermore, this iteration presents two new berms on the southern boundary of the site, each containing primary native tree planting. Additionally, it incorporated a reduction in floor space for each unit as detailed in the Site Layout Plan.

Following the completion of the archaeological geophysical survey and test trenching, it was confirmed that two archaeological enclosures had been discovered at the western boundary of the site. Following consultation with Cork County Council, the applicant was advised to preserve these in situ (i.e. to ensure that the enclosure and its respective buffer area are left more or less undeveloped). Accordingly, the Site Layout Plan was revised in May 2025 (RFI Rev 5) to account for this – The floorspace of Unit 6 was reduced, while the reduction of same for Unit 5 was even greater. These reductions were undertaken to ensure that there was no encroachment onto the archaeological buffer zone, and layout configurations were taken to account for required yard space and access to same.

Feedback was issued from Cork County Council in respect of the above layout. It was noted that the applicant needed to give due cognisance to considerations such as flooding, ecology, landscape and archaeology. Specifically, it was noted that the developable area should focus on the eastern half of the site. Accordingly, the Site Layout Plan was revised (RFI Rev 7) to remove Unit 5, which was previously at the northwestern corner of the site. A further amendment was made to reduce the floorspace of Unit 6 at the southwestern corner, in order to limit any encroachment into the western half of the site. The berm at the western boundary was removed to take on board feedback from Cork County Council, while it is also proposed to remove the berm at the southern boundary.



Figure 5.2 Proposed layout revision 7 illustrating the buffers for mammals including otter, berms planted with native trees and associated archaeological preservation

5.3 Test 3 – Impact of a Derogation on Conservation Status

The following summary information provides responses to four key issues which will be considered during the derogation licence decision-making process;

5.3.1 *Evidence that actions permitted by a derogation will not be detrimental to the maintenance of the populations of the species to which the Habitats Directive relates at a favourable conservation status in their natural range as is required under Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.*

A derogation licence is required due to the presence of an identified otter breeding and resting site (i.e. holt H2) within 150m of the proposed Carrigtwohill Business Park development. No otter breeding or resting sites will be directly disturbed by the proposed works, as holt H2 is located outside of the development boundary (i.e. 63m). Otter surveys undertaken in March 2024, May 2025 and May 2026, in conjunction with an extensive trail camera monitoring programme, found no evidence of recent otter activity at Holt H2, indicating that the holt is currently inactive. However, otter habitat use and the status of breeding and resting sites can change over time and therefore, applying the precautionary principle, it is considered possible that holt H2 could become active during the construction phase. Therefore, short-term, indirect disturbance to otter breeding and resting areas during the construction phase cannot likely be avoided. Mitigation measures, including mitigation by design, focusing on the minimisation of disturbance to otter (see below), will be implemented.

These measures are designed to ensure that the permitted actions will not be detrimental to the maintenance of otter populations, thereby supporting the species' favourable conservation status within their natural range in compliance with Section 54(2) of the European Communities (Birds and Natural Habitats) Regulations.

The current site layout has been changed through numerous design iterations to minimise potential impacts on otter and associated habitats. Two landscaped berms are proposed along the southern boundary of the development, which will be planted with native tree species to provide a vegetated buffer between the proposed development and the otter holt (**Figure 5.2**). These measures will enhance screening, reduce disturbance and strengthen ecological connectivity within the wider landscape. Additionally, following the completion of archaeological geophysical surveys, two archaeological enclosures were identified along the western boundary of the site. As a result, the development layout was redesigned, reducing the overall development footprint and associated land take. Therefore, the extent of habitat loss and disturbance to contiguous habitats potentially utilised by otter has been significantly reduced.

5.3.2 *Details of any mitigation measures planned for the species affected by the derogation at the location, along with evidence that such mitigation has been successful elsewhere.*

No otter breeding (holt) areas will be directly disturbed as a result of the proposed Carrigtwohill Business Park development. The otter breeding and resting area recorded south of the development boundary is located outside the direct footprint of the proposed works (approximately 63m from the development boundary). It is also situated below an embankment vegetated with trees, further

sheltering it from noise disturbance. The holt was determined to be inactive during the most recent survey in May 2026 inclusive of trail camera monitoring.

While direct impacts are not anticipated, short-term indirect disturbance to otter breeding and resting areas during the construction phase cannot be entirely ruled out. Measures will be implemented to minimise disturbance to otter, their habitat and prey resources during both the construction and operational phases of the development. Measures align with best practice guidance for otter (e.g. NPWS, 2021; TII, 2009) with evidence of successful implementation in previous infrastructure projects across Ireland and elsewhere as summarised below.

The main viable mitigation measures are as follows to protect otter from indirect disturbance-related impacts:

- Ecological Clerk of Works (ECoW) supervision during the construction phase to ensure buffers are maintained, minimising any encroachment by plant.
- Ecologically sensitive areas associated with otter activity will be clearly demarcated using ecological sensitivity signage prior to the commencement of works.
- A trail camera monitoring program¹ will continue to be implemented by the Project Ecologist/ECoW to observe otter activity and detect any disturbance-related impacts. Monitoring will continue throughout the construction period to ensure mitigation measures are effective and to allow for real-time adjustments as needed.
- All construction personnel will receive a site-specific briefing from the Project Ecologist/ECoW prior to works commencing. This briefing will identify the locations of the inactive holt and outline all required mitigation measures.
- The activity status of holt H2 has currently been determined as inactive, given no signs of activity were noted during the current May 2026 survey, inclusive of trail camera monitoring. Should the holt become active during the construction phase, additional mitigation shall be implemented. These will include the installation of the earthen berm in advance of all other construction work to provide screening/barriers in areas closest to the holt to minimise disturbance arising from construction-related noise and vibration.
- Monitoring results and ecological updates will be provided regularly to the client and construction team by the ECoW throughout the construction period, ensuring that mitigation measures remain effective and responsive to site conditions.

5.3.3 As much information as possible to allow a decision to be made on this application.

Robust information pertaining to otters, inclusive of detailed mitigation proposals, has been provided in the current report to best inform the decision process.

¹ Please note that pre-construction trail camera monitoring of the holt sites will be completed under a Section 9 & 23 licence, once received from the NPWS.

6. References

- Bailey, M. & Rochford, J., (2006). Otter survey of Ireland 2004/2005. Irish Wildlife Manual, No 23. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin.
- Brazier, B. & Macklin, R. (2020). Dún Laoghaire-Rathdown otter survey. Report prepared by Triturus Environmental Ltd. for Dún Laoghaire-Rathdown County Council. November 2020.
- Chanin, P.R.F. (2003). Ecology of the European otter. Conserving Natura 2000 Rivers Ecology Series No. 10. English Nature, Peterborough.
- CIEEM (2019) On the Lifespan of Ecological Reports & Surveys. April 2019.
- Erlinge, S. (1967). Home range of the otter *Lutra lutra* L. in southern Sweden. Oikos, 186-209.
- Kruuk, H. (2006). Otters, Ecology, Behaviour and Conservation. Oxford University Press.
- Lenton, E.J., Chanin, P.R.F. & Jefferies, D.J. (1980). Otter Survey of England, 1977-79. Nature Conservancy Council, London.
- Limosa Environmental (2025) Ecological Impact Assessment - Proposed development of a site near Carrigtwohill, Co. Cork. September 2025.
- Loy, A., Carranza, M.L., Cianfrani, C., D'Alessandro, E., Bonesi, L., Di Marzio, P. & Regiani, G. (2009). Otter *Lutra lutra* population expansion: assessing habitat suitability and connectivity in southern Italy. Folia Zoologica, 58(3), 309.
- Macklin, R., Brazier, B. & Sleeman, P. (2019). Dublin City otter survey. Report prepared by Triturus Environmental Ltd. for Dublin City Council as an action of the Dublin City Biodiversity Action Plan 2015-2020.
- Marnell, F., Kingston, N. & Looney, D. (2009). Ireland Red List No. 3: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- Marnell, F., Looney, D. & Lawton, C. (2019). Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.
- Mason, C.F., & Macdonald, S.M. (2009). Otters: ecology and conservation. Cambridge University Press.
- NPWS (2025). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Domhnall Finch, Aoife Delany, Fionnuala O'Neill and Deirdre Lynn
- NPWS (2021). Guidance on the Strict Protection of Certain Animal and Plant Species under the EU Habitats Directive in Ireland. National Parks and Wildlife Service.
- Reid, N., Dingerkus, K., Stone, R., Colhoun, K., Maddox, L. & Marnell, F. (2025). Otter Survey of Ireland 2023-24. Irish Wildlife Manuals, No. 161. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.
- Ruiz-Olmo, J., Batet, A., Mañas, F., & Martínez-Vidal, R. (2011). Factors affecting otter (*Lutra lutra*) abundance and breeding success in freshwater habitats of the northeastern Iberian Peninsula. European Journal of Wildlife Research, 57(4), 827-842.
- Scorpio, V., Loy, A., Di Febbraro, M., Rizzo, A., Aucelli, P. (2016). Hydromorphology meets mammal ecology: river morphological quality, recent channel adjustments and otter resilience. River Res. Appl. 32, 267–279

TII (2008) Guidelines for the treatment of otters prior to construction of national road schemes.

Triturus (2024) Otter survey for the Carrigtwohill Mixed Use Development, Carrigtwohill, Co. Cork. Report prepared by Triturus Environmental Ltd. for Cork Retail and Tourist Developments Ltd. March 2024.

7. Appendix A – otter signs database

Table 7.1 Summary of the 9 no. otter signs recorded in the survey area May 2026 (**breeding and resting areas marked in bold**)

Unique Sign ID	Sign	No. spraint sites (no. spraints)	Sign age	Notes	ITM x	ITM y
2026_H2	Holt	n/a	Not active	Otter holt under hawthorn tree root system adjoining tidal lagoon, with open, well-worn entrance. However, no otter activity recorded between trail camera monitoring in 2025 and 2026. Brown rat, stoat and rabbit detected during trail camera monitoring.	579574	572840
2026_01	Spraint site	1(1)	Old	Old spraint at entrance of mammal culvert between small tidal lagoon north of N25 and Slatty Water	579660	572809
2026_02	Spraint site	3(6)	Mixed age	Regular spraint site on old jetty at Brown's Island	579087	572515
2026_H6	Holt	n/a	Likely active	Excavated holt on the corner of Brown Island	578887	572573
2026_H4	Holt	1(1)	Likely active	Excavated holt under alder buckthorn at Brown's Island	578920	572531
2026_03	Spraint site	3(7)	Mixed age	Old spraint sites under N25 bridge	578832	572601
2026_H5	Holt	n/a	Not active	Holt in eroded concrete retaining wall. Historically active but not since 2024. activity. Significant coastal debris around entrance during winter storm surges. No otter spraint in the vicinity of the entrance. Numerous harbour seal now very active in area adjoining Harper's Island.	578851	573015
2026_H1	Holt	1(1)	Not active	Holt with two entrances on tidal embankment. Holt was active historically, but no spraint, scent or any signs of recent activity with cobwebs at entrances. Numerous harbour seal now very active in area adjoining Harper's Island, with 3 observed during current survey.	578673	573117
2026_H3	Holt	n/a	Not active	Inactive holt adjoining Slatty Water in coastal grassy area above high tide mark	579054	572591



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