



**MAMMAL SURVEY REPORT**  
**ENNISCORTHY FLOOD DEFENCE SCHEME**  
**CO. WEXFORD**

**Prepared For Mott MacDonald**

**On behalf of**

**Wexford County Council**

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## 1. INTRODUCTION

### 1.1 AIMS OF THE REPORT

Scott Cawley Ecological Consultants were commissioned by Mott MacDonald (MM) on behalf of Wexford County Council (WCC) to undertake a survey for terrestrial mammals within in the context of the proposed Enniscorthy Flood Defence Scheme, hereafter referred to as 'the proposed Scheme'.

This survey focussed on recording terrestrial mammal field signs (excluding bats) and identifying the location of any resting or breeding sites that might be impacted by the proposed Scheme. This mammal report includes *ad hoc* records for other mammals, including aquatic mammals e.g. Harbour Seal *Phoca vitulina*, where they were noted during the surveys for the proposed Scheme in 2016. The Survey Area for the proposed Scheme can be seen in Section 4.1, Figure 1 below. This work was undertaken to inform the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) for the scheme.

Previous assessments carried out for development projects in the environs of the proposed Scheme were referred to in this report and include; '*An Assessment of The River Slaney for the Presence of Bats, Badgers and Otters in Advance of a Flood Relief Scheme at Enniscorthy, Co. Wexford and Proposed Mitigation*' (Keeley, 2005) and the '*Environmental Impact Assessment for the M11 Gorey to Enniscorthy Scheme*' (Ryan Hanley WSP 2009).

This report should also be read in conjunction with the Habitat Report for the proposed Scheme (Scott Cawley, 2016b).

### 1.2 SITE OVERVIEW

The River Slaney flows from the Wicklow Mountains to Wexford Harbour, traversing several towns along its route. The proposed Scheme starts at approximate National Grid Reference (NGR) S 97877 40784 and end at approximate NGR S 97270 38415 (c. 3km long). The area supports a variety of habitats including woodland (scrub, hedgerows and treelines), grasslands and wetlands, as well as more urban habitats and amenity areas. Land-uses include agricultural, recreational (including water-based activities), angling, forest, wildlife habitat, commercial, and residential use. The surrounding area includes similar habitat types of improved agricultural fields, hedgerows, scrub, marsh and wet grassland.

## 2. LEGISLATION, POLICY AND GUIDELINES

### 2.1 RELEVANT LEGISLATION, POLICY AND GUIDELINES

This report takes into account the following policy documents and legislation in relation to mammals:

#### National and International Policy and Legislation

- *Wildlife Acts 1976 - 2012* (as amended); hereafter collectively referred to as the '*Wildlife Acts*';

- *European Communities (EC) (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011 (as amended)); hereafter referred to as the Birds and Habitats Regulations;*
- *EU Habitats Directive 92/43/EEC (as amended); and,*
- *Actions for Biodiversity 2011 – 2016, Ireland’s National Biodiversity Plan (Department of Arts, Heritage and the Gaeltacht, 2011).*

#### Relevant Local Plans and Policies

- *Water Matters: Our Plan!, South Eastern River Basin Management Plan (2009-2015), 2010;*
- *Wexford County Development Plan 2013 – 2019;*
- *Enniscorthy Town and Environs Development Plan 2008 – 2014 (as extended); and,*
- *Wexford County Council’s Biodiversity Action Plan 2013 – 2018.*

#### Protected Areas

Special Areas of Conservation (SACs) are Natura 2000 sites, also known as European Sites, which specifically relate to the protection of habitats and species. Such sites (along with Special Protection Areas and RAMSAR sites for the protection of birds) are a European-wide ecological network of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II of the EC Habitats Directive (or the EC Birds Directive). The aim of the network is to aid the long-term survival of Europe's most valuable and threatened species and habitats. Hereafter they are referred to as “European Sites”.

Part of the proposed Scheme lies within the Slaney River Valley Special Area of Conservation (SAC) [000781]. Qualifying Interest Habitats and Species for this SAC include (mammals are highlighted in **bold**):

- 1029 Freshwater Pearl Mussel *Margaritifera margaritifera*
- 1095 Sea Lamprey *Petromyzon marinus*
- 1096 Brook Lamprey *Lampetra planeri*
- 1099 River Lamprey *Lampetra fluviatilis*
- 1103 Twaite Shad *Alosa fallax*
- 1106 Atlantic Salmon *Salmo salar* (only in fresh water)
- 1130 Estuaries
- 1140 Mudflats and sandflats not covered by seawater at low tide
- **1355 Otter *Lutra lutra***
- **1365 Harbour Seal *Phoca vitulina***

- 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation
- 91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- 91E0\* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno - Padion*, *Alnion incanae*, *Salicion albae*) \* indicates a priority habitat under the Habitats Directive

National Heritage Areas (NHAs) are designations under the Wildlife Acts 1976 and 2000 in order to protect habitats, species or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with Natura 2000 sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs until such time), they are offered protection in the meantime under planning legislation which requires that planning authorities give recognition to their ecological value<sup>1</sup>. The entire proposed Scheme site lies within the Slaney River Valley pNHA (000781).

In Ireland, most native mammals are protected under the Wildlife Acts. These Acts help to ensure that the species listed cannot be wilfully killed or injured without first obtaining a licence from the National Parks and Wildlife Service (NPWS). The legislation protects their breeding places from wilful interference or destruction, and the Wildlife (Amendment) Act 2000 extends this protection to include resting places also. Such resting places are protected even where no animal is currently present. The species included under this protection are Otter *Lutra lutra*, Badger *Meles meles*, Irish Hare *Lepus timidus hibernicus*, Red Squirrel *Sciurus vulgaris*, Red deer *Cervus elaphus*, Fallow deer *Dama dama*, Sika deer *Cervus nippon*, Hedgehog *Erinaceus europaeus*, Pygmy shrew *Sorex minutus*, Pine Marten *Martes martes*, Irish stoat *Mustela erminea hibernica*, and native Marine Mammals<sup>2</sup>.

Otters are also afforded additional protection under the EU Habitats Directive [92/43/EEC] Annex II and IV. 47 No. SAC's (including the Slaney River Valley SAC) are listed for the protection of Otter in the Republic of Ireland. Harbour Seal and Grey Seal *Halichoerus grypus* are also listed on Annex II of this Directive. Like Otter, Harbour Seal is also a Qualifying Interest (QI) species for the Slaney River SAC.

Other mammals that are referred to in this report, but which are not protected under the above legislation include Fox *Vulpes vulpes*, Rabbit *Oryctolagus cuniculus*, Wood mouse *Apodemus sylvaticus* and House mouse *Mus musculus domesticus*.

Invasive mammals which are listed on the Third Schedule Part 2A of Section 49 of the European Communities (Birds and Habitats) Regulations 2010, for which assisting their spread constitutes committing an offence under this legislation include Grey Squirrel *Sciurus carolinensis*, Mink *Neovison vison*, and Roe deer *Capreolus capreolus*.

<sup>1</sup> Source: NPWS Website. Available online at <https://www.npws.ie/protected-sites/nha> Accessed April 2016.

<sup>2</sup> <https://www.npws.ie/marine/marine-species>

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### Irish Red Data Lists

The NPWS and Northern Ireland Environment Agency (NIEA) work together with national experts and with the National Biological Data Centres to produce regional Red Lists<sup>3</sup> for the island of Ireland. This is in compliance with an action under the National Biodiversity Plan. The Red lists present data on rare and threatened species in Ireland, although they do not offer legal protection, they encourage the conservation of these species here. A number of the species of flora and fauna listed on Red Lists may be afforded legal protection under domestic and European law.

### General Survey Guidance

The mammal surveys have also taken note of the following guidelines:

- *Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater and Coastal* (CIEEM, 2016).
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009).
- *Guidelines on the Information to be contained in Environmental Impact Statements* (EPA, 2002 and Draft Update 2015).
- *Advice Notes on Current Practice (in preparation of Environmental Impact Statements)* (EPA, 2003 and Draft Update 2015).
- *Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes*. National Roads Authority (2006b).
- *Environmental Impact Assessment of National Road Schemes – A Practical Guide*. National Roads Authority (2008b).
- *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*. National Roads Authority. National Roads Authority (2009a).
- *Guidelines for assessment of Ecological Impacts of National Road Schemes* (Revision 2, 1st June, 2009). National Roads Authority (2009b).

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<sup>3</sup> <https://www.npws.ie/publications/red-lists>

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## Mammal

The following species specific guidelines were referred to for the mammal surveys:

- *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes.* National Roads Authority (2006a).
- *Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes.* National Roads Authority (2008a).

### **3. CONSULTATION**

Consultation was carried out with Ciara Flynn District Conservation Officer (DCO) for Co. Wexford, of the National Parks and Wildlife Service (NPWS). Meetings were attended by Mott MacDonald, with Scott Cawley and Larry McHale (Project Resident Engineer from Wexford County Council) on 17<sup>th</sup> February 2016 and 6<sup>th</sup> July 2016. All relevant information has been integrated into this report.

### **4. METHODOLOGY**

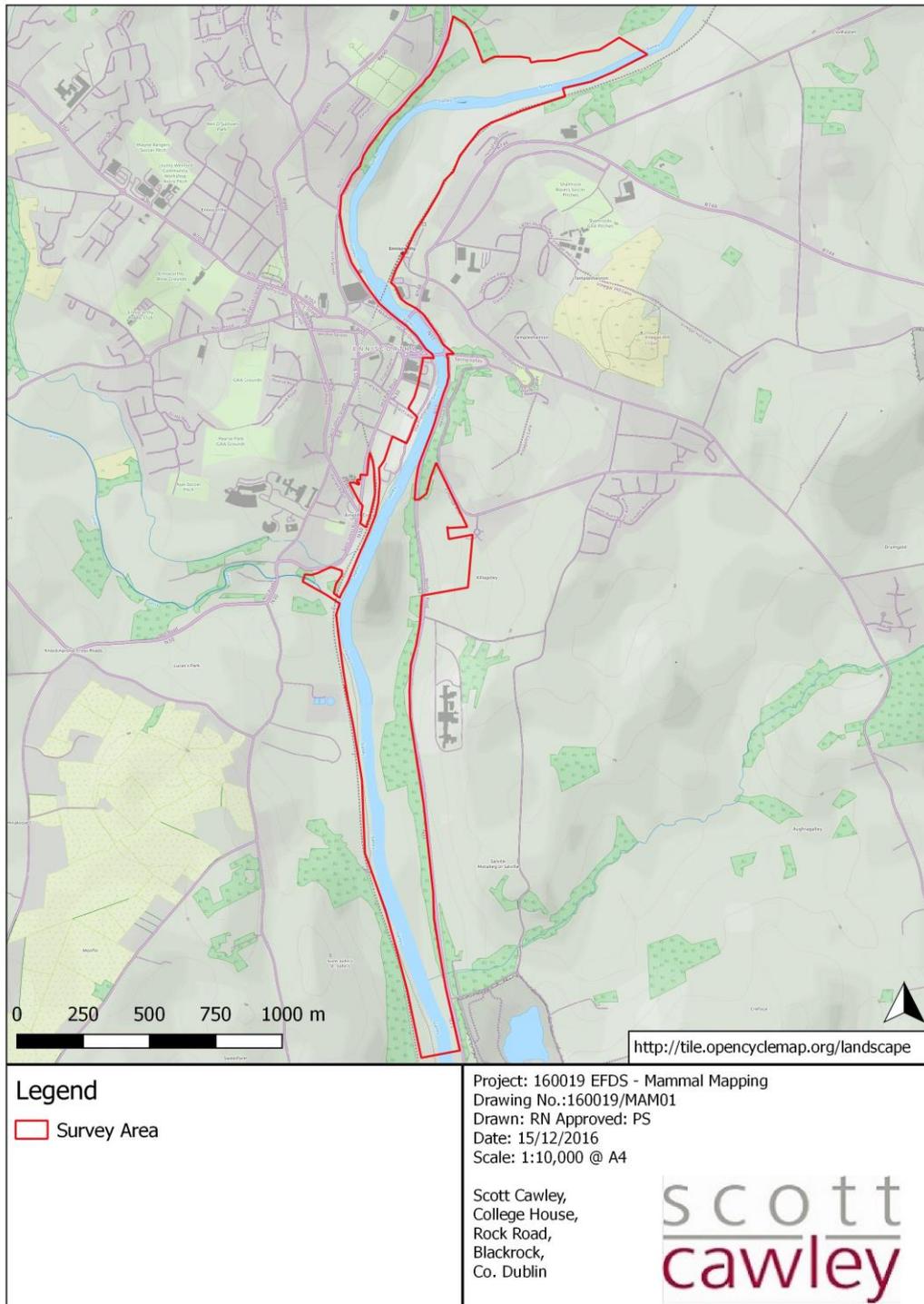
#### **4.1 ZONE OF INFLUENCE**

According to the CIEEM Guidelines (CIEEM. 2016), the Zone of Influence (Zoi) for a project is *'the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example, where there are ecological or hydrological links beyond the site boundaries.'* Detailed design aspects were still under review while undertaking site surveys in 2016. The habitats that may undergo potential direct or indirect impacts as part of the proposed Scheme were considered.

In order to ensure that the entire potential Zone of Influence upon the local mammal population was covered, Scott Cawley carried out the Otter and Badger surveys 250m up and downstream of the proposed Scheme and tributaries. Considering the proposed works, this area was deemed sufficient to cover the potential zone of influence for these mammal species. *Ad hoc* mammal data was also recorded within this area. Where access was available, mammal surveys were also conducted within scrub and woodland habitats which might be impacted by the scheme.

Otter are found throughout Ireland and generally occupy linear territories along watercourses, but are occasionally found further inland. The Survey Area for the proposed Scheme habitat surveys that were carried out by Scott Cawley in 2016 included a corridor of approximately 250 – 400m wide further inland (away from watercourses) where access was possible. The Survey Area and potential Zone of Influence for the mammal study is indicated in Figure 1 below.

At the time of preparing this report, it could not be entirely ruled out that there would be potential for impacts upon water quality further downstream via silt release during the construction phase. In addition, due to the tidal influence in this area, the tidal water levels in the river are not anticipated to be affected further downstream than the southern floodplain as there will be no works undertaken that might affect tidal levels beyond this point (Pers. Comm. Barry O'Connor, Project Manager, Mott MacDonald, 2016).



**Figure 1: Mammal Survey Area**

## 4.2 SURVEY TIMING

The NRA guidelines recommend that mammal surveys are best undertaken during the period November to April when vegetation cover is low and does not obscure setts or holts (NRA 2006). The initial baseline mammal surveys were completed during February and March 2016.

## 4.3 DESK STUDY

Information from a number of different sources was collected in January to April 2016 and analysed. This material informed the field surveys and the results. Data sources that were used included the following:

- *Mammal surveys carried out as part of the 2005/2006 Enniscorthy Flood Relief Scheme (Keeley, 2005);*
- *Site Synopsis for Slaney River SAC (000781) (NPWS, 2015);*
- *National Biodiversity Data Centre On-line Database. Available online at <http://maps.biodiversityireland.ie>;*
- *County Wexford Biodiversity Action Plan 2013 - 2018 (Wexford County Council, 2013);*
- *EIS - M11 Gorey to Enniscorthy Scheme (Ryan Hanley WSP, 2009); and,*
- *Baseline Survey of Flora and Fauna for the proposed Extension of the River Slaney Trails at Enniscorthy (Ted Walsh & Associates Ltd., 2013).*

## 4.4 FIELD SURVEYS

The mammal surveys for the proposed Scheme were undertaken by Scott Cawley Ecologists Róisín NigFhloinn MCIEEM and Caroline Kelly on 25<sup>th</sup> - 26<sup>th</sup> February and 2<sup>nd</sup> - 3<sup>rd</sup> of March 2016. Fauna, such as Otters, Badgers and other small mammals, were surveyed through the detection of field signs such as tracks, markings, feeding signs, and droppings, as well as by direct observation. A survey of accessible parts of the lower banks of the River Slaney and adjoining tributaries and ditches was also conducted.

Following the results of the initial baseline mammal surveys a Derogation Licence [DER/OTTER 2016-22] was obtained from the National Parks and Wildlife Service (NPWS) to regulate the Ground Investigation works (carried out in the 2016 to inform the proposed Scheme). Three motion-activated infra-red Bushnell wildlife cameras were used to monitor potential mammal resting sites within the Survey Area from March to September 2016 while the Ground Investigation works were underway. Footage was recorded under a NPWS licence [013/2016]. Additional mammal field signs were also noted during these visits. Wildlife cameras were used to monitor potential Otter Holts at OH2, OH3 and OH4 and this is described below in Section 5.2. Wildlife cameras were installed between 20-21<sup>st</sup> February to 11<sup>th</sup> March

2016 and throughout Ground Investigation works between 9-10<sup>th</sup> June and 30<sup>th</sup> September 2016, as part of the licence requirements [DER/OTTER 2016-22].

#### 4.5 LIMITATIONS OF SURVEYS

Areas that were inaccessible during the mammal surveys included the Wexford Railway Line (this will not be impacted by these works) and a steep rock outcrop alongside the N11 to the south east of the proposed Scheme Survey Area. However, it was possible to survey the Oak woodland on top of this outcrop and mammals would be unable to burrow within the steep rocky incline beneath this habitat.

As mammals are highly mobile species, it is possible that with a lapse in time following surveys, new burrows may be created. As such, this is considered further within the recommendations in this report.

It was not possible to install a camera at the location of potential Otter holt OH1 as this was located low in the river bank where it was likely to flood.

## 5 RESULTS

### 5.1 DESK STUDY

National Biodiversity Data Centre<sup>4</sup>

Table 1 shows the results of the search for Mammal records

**Table 1 – NBDC Mammal Records in relation to the proposed Scheme**

Mammal	Location	Details
Badger	S974383 (Badger Road Kill)	No setts recorded within the Survey Area – but road kill record from 2012.
Otter	S973391 (Sighting)	Otter sighting within the Survey Area (beside southern floodplain) in 2009.
Irish Hare	c.2.5km East of Enniscorthy	Irish Hare recorded in 1992. No recent records.
Red Squirrel	c. 200m east of the centre of the proposed Scheme at S975400 (Sighting)	Recorded in 2007 during Irish Red Squirrel Survey.
Pine Marten	S976364 (Pine Marten Road Kill)	October 2015 at St John's which is >1km south of the Survey Area.
Hedgehog	S971403 (Hedgehog Road Kill)	Road Kill record from 2015 within the Survey Area.
Irish Stoat	TO23375 and TO31368 (Sightings)	Records of Irish Stoat from 2012 and 2011 in Clonmore >4km to the south east of the Survey Area.

<sup>4</sup> <http://maps.biodiversityireland.ie/#/Map>

Harbour Seal	S9739 (Sighting)	Harbour Seal sighting within the Survey Area in 2015.
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#### Ad hoc Deer Records

Although they are protected under the Wildlife Acts, Red deer *Cervus elaphus*, Fallow deer *Dama dama*, Sika deer *Cervus nippon* are highly unlikely to occur in the Survey Area or environs of the proposed Scheme (according to the NBDC records in 2016). In addition, no signs of deer were noted during any of the proposed Scheme surveys, as such, these species are not referred to further within this report. Fallow Deer have been recorded in Dunamore Woods which lies c.5.5km south of Enniscorthy<sup>5</sup>.

#### M11 Gorey to Enniscorthy Scheme (Enniscorthy Bypass)

Field surveys for this scheme spanned all four seasons and covered the optimal survey periods for flora and fauna. Additional Badger surveys were conducted in April 2009 along the northern section of the M11/N11 mainline and the N80 Link Road to ensure that robust data was also gathered within the optimal period in this part of the scheme, as the original badger surveys in those locations were carried out outside of the optimal survey period. This Environmental Impact Statement for the above scheme confirmed that Badger and Otter are present within the environs of Enniscorthy (Ryan Hanley WSP 2009). Badgers were recorded at high densities in the local area with more than 60 Badger setts (including main setts), being identified within 50m of this road scheme. Five Otter holts were recorded during the ecology surveys for this scheme. However, none of the Otter Holts or Badger setts identified for the M11 scheme lie within 250m of the proposed Enniscorthy Flood Defence Scheme. The EIS also acknowledged that the habitats within the study area and environs of the proposed M11 road were suitable for the following mammals: Hedgehog, Pygmy Shrew, Irish Hare and Irish Stoat, however no records of those species were indicated within that report.

#### Mammal Surveys for Enniscorthy Flood Relief Scheme (2004/5)

As part of the EIA for the Enniscorthy Flood Relief Scheme proposed in 2007, mammal surveys were undertaken both in winter 2004/5 (February) and in June (2005) in order to identify mammal sites when the vegetation was low (Keeley, 2005).

Three Otter holts were identified during this survey:

<sup>5</sup> <http://www.discoverireland.ie/Arts-Culture-Heritage/dunamore-woods/8529>

- *“A holt approximately 103 metres northwards along the river bank from appoint level with the ruin here” this was “level with two small islets at the northern end of the drain that passes the railway station on the northern floodplain”;*
- *“A holt on the south bank of a small tributary of the Slaney, level with the hospital”;* and,
- *“A third holt lies 30 to 40 metres from the above holt. A Stone drain almost beside this ...it is possible that this may lead into a holt”.*

No badger setts were found that lie within the lands that were likely to be affected by the flood relief scheme. Active badger setts were identified within the woodland in the grounds of St. Senan’s Hospital to the south west of Enniscorthy town and a single entrance sett was noted within the woods *“south of a health farm on the west bank”.*

There were no signs of Irish Hare observed during the 2004/5 surveys. However, it was noted that the floodplains provide suitable habitat for this species.

#### Baseline Survey of Flora and Fauna for the proposed Extension of the River Slaney Trails at Enniscorthy

Surveys were conducted for the proposed extension to walking trails along the River Slaney South of Enniscorthy (Ted Walsh & Associates Ltd, 2013). They were conducted to the south of the Survey Area for the proposed Enniscorthy Flood Defence Scheme and continued c.6 km to the south of this area during April to May 2013. All activity recorded lies outside of the Survey Area for the Enniscorthy Flood Defence Scheme, however, the results support the findings that Otter and Badger are both active in the environs.

The faunal surveys reported the following:

- Several Otter prints and spraints were noted along the Extended West Trail.
- At the upper end of the West Trail (north), near the River Boro confluence, a number of Otter prints were noted and a possible spraint. Also several Badger tracks were noted running through a hedgerow bordering the railway line at the northern end of the site. A Badger latrine was present in the Oak-ash-hazel woodland on the West Trail (north).
- A Badger sett was recorded within the Oak-ash woodland and a possible Mink hunting ground was noted along the West Trail (south). *Note: This is south of the River Boro and lies outside of the Survey Area.*
- Badger activity was recorded within the woodland habitat on the Kilcarbery Trail further south.

#### Ad hoc Otter Sightings

- Workers in the Enniscorthy Railway Station have reported seeing a single Otter in the yard in the early 2000's (Keeley 2005; Pers. Comm. Railway Station Operatives, 2016).
- Adult Otter and its young, sighting on Wednesday afternoon 24<sup>th</sup> August 2016 downstream of the Urrin inflow in the River Slaney. The Otters were feeding as they moved downstream. The River Walk was in use by lots of people and dogs at the time as it was a bright sunny day (Pers. Comm. Eleanor Mayes, 2016).
- A walker saw an Otter in a similar location to the above in July 2016 (Pers. Comm. Eleanor Mayes, 2016).
- Otter prints recorded by Eleanor Mayes south of the Southern Floodplain during bird surveys in 2016 (see Figure 2 '*Incidental Otter Prints*').
- Otter sighting on 13<sup>th</sup> December 2016 at 11:38. A single animal hunting downstream close to the west bank, south of the Riverside Hotel (Pers. Comm. Eleanor Mayes).

#### Ad-hoc Seal Sightings

- Single Seal lying out on the north of the northern floodplain in c.2013 (Pers. Comm. Railway Station Operatives, 2016).
- Low numbers of Grey Seal *Halichoerus grypus* (possibly the same individual at a time) have been infrequently noted in the Upper Slaney near Enniscorthy in 2013 (IFI, 2014).
- Early 2016 (precise date unknown) – Seal (Likely Harbour Seal) within the River Slaney at the proposed location for the new Enniscorthy Bridge (Pers. Comm. Brian Porter, 2016).
- 24<sup>th</sup> February 2016 – Two Harbour Seal at Edermine Bridge during the morning time at high water spring tide (Pers. Comm. Eleanor Mayes, 2016).
- 17<sup>th</sup> October 2016 at 07:58AM – Harbour Seal moving upstream past the Riverside hotel towards the Seamus Rafter Bridge on the rising tide (Pers. Comm. Eleanor Mayes, 2016).
- 28<sup>th</sup> November 2016 at 08:09AM - Harbour Seal moving upstream past the Riverside hotel towards the Seamus Rafter Bridge (Pers. Comm. Eleanor Mayes, 2016).

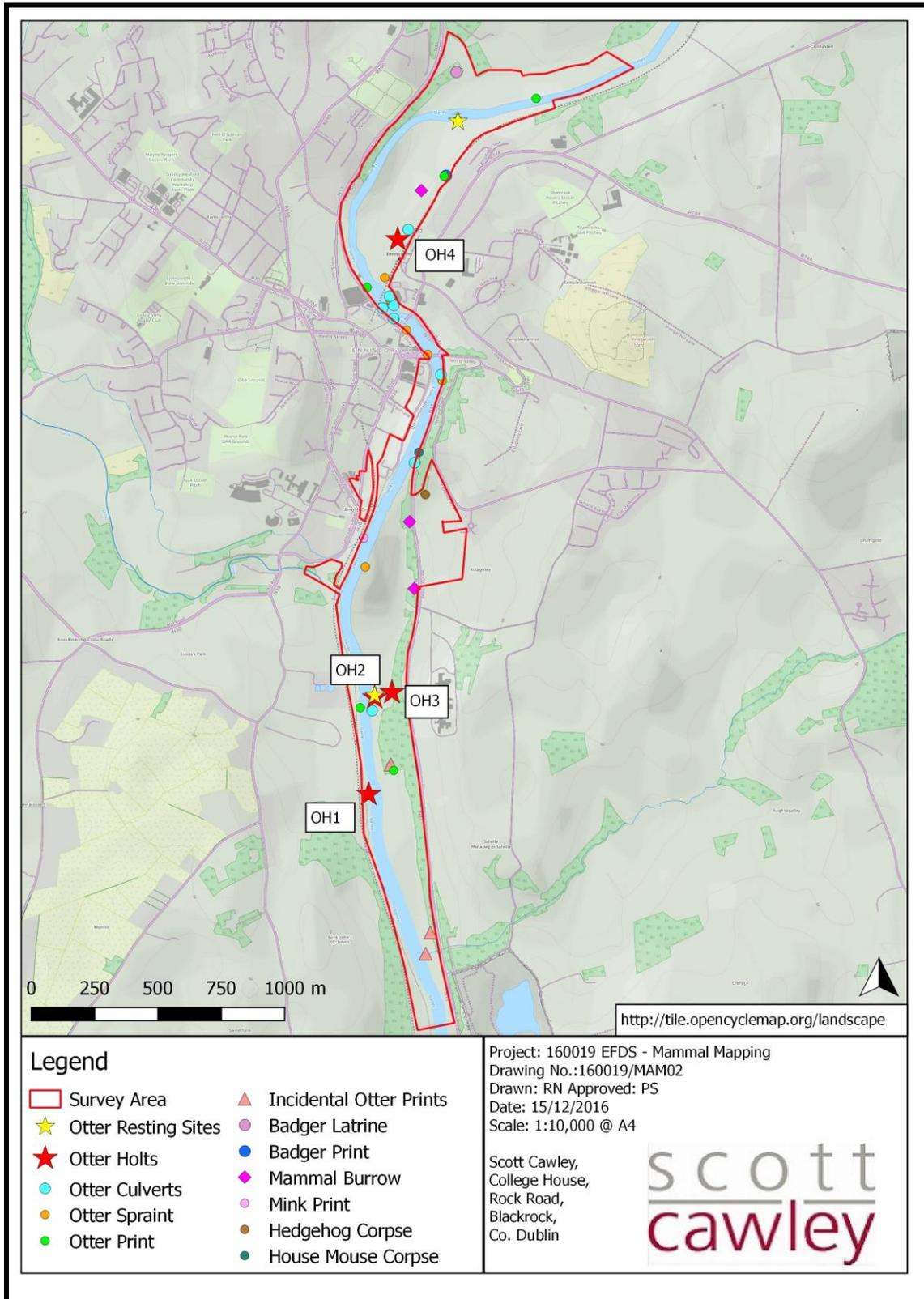
## **5.2 FIELD SURVEY RESULTS**

The mammal survey results in 2016 identified evidence of Otter, Badger, Rabbit, Fox, House Mouse, Grey Squirrel, Mink, Rat and Hedgehog within the Survey Area. Incidental observations of Seal were also made by surveyors that were undertaking monthly bird surveys for the proposed Scheme (as described in Section 5.1). The survey results are illustrated in Figure 2 below.

### **5.2.1 OTTERS**

Otter activity was evident across the site with Otter prints and spraint being found throughout the Survey Area. Four potential Otter holts were identified within the Survey Area. Of these, it was possible to monitor three locations with Wildlife Cameras to ascertain their use, the fourth was low down on the south western river bank and likely to flood, and there was no vegetation here on which to attach a camera.

All mammal holes that were identified as potential holts had evidence of Otter activity near their entrance(s) during the surveys. The only recorded footage of Otter were noted at OH3 and OH4 on the south eastern and north eastern sides of the proposed scheme. However Otter field signs exist throughout the Survey Area on both sides of the River Slaney. In addition, there were several recent sightings of Otter to the south of the Riverside Hotel during the survey season in 2016.



**Figure 2: Mammal Survey Results**

Please Note: Additional species recorded on the Wildlife camera OH4 included Hedgehog, Rabbit, Rat and Cat. The Wildlife camera at OH3 also recorded Badger, Fox, Rat, Grey Squirrel during the potential Otter holt monitoring surveys in March – September 2016. ‘Incidental Otter prints’ refer to the ad hoc records provided by Eleanor Mayes during bird surveys in 2016.

**Otter Holt (OH1)**

**Plate 1 – Otter Holt (OH1) on south western river bank**

Otter holt (OH1) Plate 1 - Otter prints and bedding were noted here. It is not known whether this potential Otter holt is currently active. Therefore, a precautionary approach has been taken and OH1 should be treated as an active Otter holt.

**Otter Holt (OH2)**

**Plate 2 - Otter Holt (OH2) on south eastern river bank**

This Otter holt (OH2) Plate 2 – This holt lies across a tributary ditch of the River Slaney south of the southern floodplain. Old Otter spraint was found within a resting site immediately adjacent to this holt. During camera monitoring during March to September 2016, no mammal activity was recorded here. It is possible that Otters may occupy this site in future. Between one and four Otters were regularly recorded at OH3 which lies c.75m east of OH2 throughout March – September.

### ***Otter Holt (OH3)***



***Plate 3 - Otter Holt (OH3) in south east of study area within woodland***

Old and fresh spraint were recorded at this site. During camera monitoring, Otters were regularly recorded (1- 4 individuals including adults and mature juveniles) passing this location and often sprainting here. The burrows were currently used by Brown Rat and there was no indication (during camera monitoring from March to September) that this was being actively used by the Otters other than for sprainting and as a commuting route.



***Plate 4 – Video still showing Adult Otter and two young at holt (OH3)***



***Plate 5 – Video still showing two Otters at holt (OH3)***

Between 1 and 4 Otters were captured in footage at holt (OH3) during March to September 2016. The Otters inspected this entrance to the holt and then left the area without entering or exiting the entrance. They were recorded on numerous occasions in this area and regularly spraint at this location (as seen in Plate 6 below).



***Plate 6 – Adult Otter sprainting at holt (OH3).***

***Otter Holt (OH4)***



***Plate 7 - Otter Holt (OH4) on north eastern drainage ditch bank beside Enniscorthy Train Station***

Otter activity was briefly recorded on the trail camera in this location on one occasion on the 26<sup>th</sup> February and another brief occasion on 26<sup>th</sup> April 2016. No recordings of Otters entering or exiting this

holt throughout March – September were made. No spraint or prints were recorded here throughout the surveys. Although this holt was briefly visited occasionally by Otter in February and April, it was not considered to be currently active (in 2016).



***Plate 8– A single Otter recorded during a brief pass at Otter Holt (OH4)***

***Otter Resting Site (Northern Floodplain)***



***Plate 9- Otter Resting Site (on northern floodplain) Shallow mammal burrow and slide***

Several Otter prints were noted here along with Otter spraint and a slide into the river. Although the burrow showed recent signs of digging<sup>6</sup>, it only reached c.3 foot deep. As such, this entrance was suspected as being a resting site rather than a holt in this instance.

***Otter Resting Site (South of Southern Floodplain – adjacent to OH2)***



***Plate 10 - Otter Resting Site (South of southern floodplain – adjacent to OH2)***

This Otter resting site lies within scrub and flood debris immediately adjacent to the River Slaney (west) and a tributary ditch (north). Mammal paths and old Otter spraints were noted here in March 2016. Further visits did not indicate regular use by Otter here (no further spraint or prints were noted). Otters are regularly using the adjacent habitats near OH3 as a commuting and sprainting area and have been recorded foraging in the River Slaney adjacent in 2016.

### **5.2.2 BADGER**

No Badger setts were recorded within the Zone of Influence for the proposed Scheme.

Badger activity was much less notable than Otter within the Survey Area. A badger latrine was noted within the conifer plantation in the north west of the Survey Area. A Badger print was noted along the upper track within the northern floodplain (this track runs parallel to the railway line fence). Badgers were recorded on the wildlife cameras on two occasions in June and August 2016 within the woodland south of the southern floodplain passing OH3.

<sup>6</sup> Otters occasionally dig their own burrows but more often use existing hollows or mammal burrows. [http://mulkearlife.com/wp-content/uploads/2015/05/MulkearlIFE\\_BP\\_OTTERS-FINAL.pdf](http://mulkearlife.com/wp-content/uploads/2015/05/MulkearlIFE_BP_OTTERS-FINAL.pdf) and <http://www.mammals-in-ireland.ie/species/otter>



**Plate 11 – Video still of Badger passing OH3 during August 2016**

### **5.2.3 OTHER MAMMALS**

As well as some Badger activity (See Plate 11) and high Otter activity (See Plates 1 – 10) within the Survey Area, the surveys also recorded the following mammals:

- An adult Fox and its young were recorded investigating OH3 in August 2016 (See Plate 12). Fox appear to have a den in the centre of the woodland alongside the southern floodplain.
- Rabbit were noted within the scrub and woodland and along embankments in the north and southern floodplains (and were recorded on the camera at OH4).
- House mouse (a single corpse was recorded on the pavement north of the southern floodplain).
- Hedgehog (recorded on motion camera adjacent to OH4 in August 2016, and a single corpse was recorded on the eastern side of the Survey Area (see Figure 2 above).
- Domestic Cats were regularly recorded on the motion sensor cameras, particularly at OH4 on the northern floodplain (this location is immediately adjacent to residential properties around Enniscorthy Railway Station).
- Brown Rat were common throughout the Survey Area and evidence of their presence were recorded on most surveys, and regularly during the motion sensor camera surveys. Brown Rat were occupying OH3 in 2016 (recorded entering and exiting burrow during the trail camera surveys).



**Plate 12 – Video still of Fox marking at OH3 during August 2016**

- Invasive species listed on the Third Schedule Part 2A of Section 49 of the European Communities (Birds and Habitats) Regulations 2010 recorded within the Survey Area included Grey Squirrel (woodlands south of Southern Floodplain) and Mink (prints recorded c. 250m north of the Urrin inflow).

## **6 SUMMARY OF RESULTS**

To summarise, the results of the mammal surveys indicate that the Survey Area supports a wide variety of terrestrial and riparian/marine mammals. It is particularly well used by Otter and occasionally by foraging Badger and Harbour Seal.

The mammal burrows indicated on Figure 2 above included a Rabbit warren on the northern floodplain (west bank of back ditch), a mammal burrow on the southern floodplain currently in use by Brown rat (northern end of woodland on eastern side of southern floodplain); and a mammal burrow (likely Fox den) to the south of this.

Otter holts within the Survey Area have not been proven to be actively used in 2016 as no otters were seen to enter or leave the entrances. However Otter visit OH4 on occasion and OH3 on a regular basis. The surveys have shown that Otter make use of the entire Survey Area for foraging and commuting on a regular basis. Locals have reported seeing a large family of Otter close to Edermine Bridge.

Badger setts have not been recorded within the Survey Area, however this species is known to forage within the vicinity of the proposed Scheme and a main sett has been identified south of the River Boro (c.2.6km south of the Survey Area).

Harbour Seal occasionally travel upstream of the Riverside Hotel in order to forage. This occurs very sporadically and only single individuals have been noted at one time in 2016.

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