highways england

A47/A11 Thickthorn Junction

Scheme Number: TR010037

Volume 6
6.3 Environmental Statement Appendices
Appendix 8.10 – Polecat Survey Report

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

March 2021

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

The A47/A11 Thickthorn Junction Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES
Appendix 8.10 – Polecat Survey Report

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010037
Application Document Reference	TR010037/APP/6.3
BIM Document Reference	HE551492-GTY-EBD-000-RP-LB-30006
Author:	A47/A11 Thickthorn Junction Project Team, Highways England

Version	Date	Status of Version
Rev 0	March 2021	Application Issue

Table of contents

Photographs

1. Scheme introduction

1.1. Background

1.1.1. Between February and June 2020, Sweco UK Ltd undertook a polecat survey at A47/A11 Thickthorn Junction to establish presence/absence of the species on the study area.

1.1.2. A47/A11 Thickthorn Junction is located on the south-western edge of Norwich, at national grid reference TG 18424 05483, and provides access to the A47 via the A11 for Eaton, Cringleford, Hethersett and Wymondham.

1.1.3. The proposed scheme is designed to provide a new free flow link road connecting the A11 to the A47 Hethersett Bypass. Improvements will also be made to the roundabout connecting to the A11 Newmarket Road.

1.1.4. The survey area (referred to as the study area) comprises the proposed route of the new road layout, with a buffer zone of 100m. The buffer is primarily the existing A47 and agricultural fields with associated hedgerows, stands of trees, small woodlands, farm buildings and residential properties.

2. Ecological background

2.1. Previous studies

Preliminary ecological appraisal

2.1.1. A preliminary ecological appraisal (PEA) was undertaken in 2016 to inform the environmental assessment report (EAR) produced at the option selection stage. The PEA identified records of European polecat *Mustela putorius* in the county since 2014 with 12 confirmed records in 2016.

2.1.2. European polecats use a wide variety of habitats. Habitats on the study area with the potential to support European polecat identified in the PEA include broadleaved semi-natural woodland, arable field margins and hedgerows.

Phase 1 habitat surveys

2.1.3. An extended phase 1 habitat survey was undertaken in 2016 of habitats within 100m of the Proposed Scheme, identifying habitats suitable for supporting protected species and species of conservation concern.

Phase 2 European polecat surveys

2.1.4. In May 2017, a dead potential European polecat was incidentally observed 1.5km north of the A47/A11 Thickthorn Junction along the A47, which informed the requirement to undertake further surveys for European polecat.

2.1.5. It was therefore recommended in the PEA undertaken in 2016 that camera trap surveys continue throughout winter and spring of 2017/2018 to establish presence or absence of European polecats on the study area, and if present, how they use the study area. Surveys were undertaken between August and September 2017 using baited footprint tunnels and camera traps at 10 locations on the study area (the scheme footprint at the time plus a 50m buffer).

2.1.6. No evidence of polecats was found using the baited footprint tunnels. The camera traps revealed the A11 underpass was frequently used by mammals such as Muntjac deer *Muntiacus reevesi*, fox *Vulpes vulpes* and badger *Meles meles*. One unclear image recorded at the A11 underpass appears to show a European polecat or a ferret (*Mustela nigripes*), however the exact species cannot be confirmed from this image.

2.1.7. Incidental sightings of badgers, muntjac deer, red fox, rabbit, hedgehog (*Erinaceus europaeus*) and other small mammals were recorded.

2.1.8. Repeated European polecat surveys were undertaken between March and May 2020, inclusive in order to update the data collected in the summer of 2017 and winter of 2018.

2.2. Legislation

2.2.1. European polecat is listed as a species of principal importance under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. The purpose of the S41 list is to guide decision-makers in having regard to the conservation of biodiversity in England and thus implementing their responsibility under Section 40 of the NERC Act 2006.

2.2.2. Under the Wildlife and Countryside Act (1981) (as amended) Schedule 6 affords the European polecat limited protection. The species may not be killed or taken by certain methods, including self-locking snares, bows, crossbows, explosives (other than ammunition or a firearm) or live decoys.

2.2.3. The Conservation of Habitats and Species Regulations (2017) Schedule 4 sets out a duty to monitor any incidental killings and captures in order to ensure conservation targets are met.

Mistreatment

2.2.4. The Animal Welfare Act 2006 came into force in 2007 and places a duty of care on an individual responsible for an animal. The duty of care is placed on an individual to meet the welfare needs of the animal. The Act states that the following are an animal's welfare needs:

- A suitable environment
- A suitable diet
- The ability to exhibit normal behaviour patterns
- Needs it has to be housed with, or apart from, other animals
- Protection from pain, suffering, injury and disease.

2.2.5. Should mitigation such as capture and translocation of animals by required as a result of the development, the Animal Welfare Act 2006 would apply.

2.2.6. This species is also protected by the Protection of Animals Act 1911, which prohibits any acts of cruelty or mistreatment.

2.3. Aims and objectives

2.3.1. This survey and the report are intended as an update to the polecat surveys undertaken in 2017 and 2018 outlined in Section 2.1.5.

2.3.2. The aim of the survey is to establish the presence or likely absence of polecats on the study area, assess potential impacts of the scheme upon polecats and provide recommendations for undertaking the scheme in compliance with relevant legislation regarding polecats.

2.3.3. The following elements of work were included in the polecat survey programme:

- Field surveys to deploy cameras, swap camera locations and download camera data, and to collect the cameras. These visits were undertaken in the late winter and early spring, between February and June 2020, inclusive.
- Production of the ecological report, detailing the polecat survey results, implications of the scheme on polecats and recommendations for mitigation.

3. Methodology

3.1.1. The locations of the polecat survey remain the same as those locations previously surveyed. The locations were originally determined based on the potential zone of influence over which the scheme may have ecological impacts upon each individual ecological receptor and previously identified habitat suitable for polecats.

3.2. Camera trap survey

3.2.1. The survey area includes all accessible land within the footprint of the scheme plus a 50m buffer zone (the study area).

3.2.2. Bushnell Trophy Cam HD camera traps were deployed at locations within the study area with suitable European polecat habitat. Four camera traps were rotated between ten locations every two weeks throughout the survey period. The survey period extended from 02 February 2020 – 09 June 2020. The camera trap locations chosen for this survey were located in the same areas as those previously surveyed in 2017.

3.2.3. The camera traps were deployed with care to ensure the best possible chance of capturing any European polecats that may pass by. This was achieved by installing the cameras at an appropriate height and angle and ensuring the camera had a visual of suspected mammal pathways.

3.2.4. Locations on the study area with suitable European polecat habitat include arable field margins, hedgerows and areas where there is a high abundance of European rabbits *Oryctolagus cuniculus* as these are chief prey items for the European polecat.

3.2.5. The survey was undertaken by [redacted] ACIEEM (Senior Consultant Ecologist, Sweco), [redacted] GradCIEEM (Graduate Ecologist, Sweco), and [redacted] (Graduate Ecologist, MLM).

3.2.6. Annex A details camera trap locations and grid references and descriptions of each location. Annex B contains the survey dates and species recorded (including incidental sightings) for time periods surveyed at each location. Annex C contains a map of the study area and camera locations.

3.3. Limitations

3.3.1. Camera traps are a good methodology for providing information on the nocturnal movements of mammals which would otherwise be unavailable. However, a limitation of their use in the survey includes the wind blowing vegetation and causing premature activation of the camera which may have caused mammal

passes to be lost. Furthermore, some of the images captured during the survey had condensation on the lens, blurring the images. In addition to this, some of the files were corrupted when downloaded onto a computer. This is not considered a significant limitation as previous surveys in the area did not show any signs of polecats, and there is still a large number of images that are not corrupt from this survey.

3.3.2. Due to Covid-19, the dates of revisits and thus camera rotations were altered to adhere to the government guidance at the time and therefore did not follow the previously adopted rotation intervals.

3.3.3. The results of this survey will remain valid until June 2022. Beyond this period, if works have not commenced, it is recommended that a new review of the ecological conditions is undertaken.

4. Results

4.1. Camera trap observations

4.1.1. A polecat-ferret hybrid *Mustela putorius* × *Mustela putorius furo* was observed at location seven (7) (See Figure 1). No images of European polecats were captured during the survey.

Photograph 1 Polecat-ferret hybrid at location seven (7)

4.2. Incidental observations

4.2.1. Mammal species recorded in the surveys undertaken between March and May 2020, inclusive, include:

- European badger at [redacted]
- Red fox at locations one (1), two (2), three (3), four (4), five (5), seven (7), eight (8), nine (9) and ten (10)
- Rabbits at locations one (1), two (2), three (3), four (4), five (5), seven (7), nine (9) and ten (10)
- Other small mammals at locations one (1), two (2), four (4), seven (7) and ten (10).

4.2.2. Muntjac deer, which are listed as invasive non-native species under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded at all ten (10) of the camera locations.

4.2.3. Hedgehogs, which are protected under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006, were recorded at locations two (2), four (4), seven (7), nine (9) and ten (10).

Photograph 2 European badger at [redacted]

Photograph 3 Muntjac deer at location four (4)

Photograph 4 Red fox at location nine (9)

Photograph 5 Rabbit a location three (3)

4.2.4. The most frequent location for mammals was location seven (7) which is located south of the Thickthorn Junction, adjacent to the rail line and culverted stream just to the east of the A47.

4.2.5. See Annex B: Survey dates and species identification for full lists of species recorded at each location.

5. Conclusion

5.1.1. Whilst no camera images of European polecat were captured during this survey the records of European polecat and the observation of a polecat-ferret hybrid (see section 4.1.1) in the area suggest that European polecats may use the area and be present over the study area. It is recommended that mitigation on the study area for European polecat include the covering of trenches at night to prevent any injury or death of any individuals. The covering of trenches also protects other mammals found over the study area, such as otter (*Lutra lutra*) and badger, from entrapment and therefore harm. If this is not possible a means of escape from any trenches should be provided, such as a ramp at each end of the trench.

5.1.2. The camera trap survey identified a high level of mammal activity around the A11 underpass which provides a corridor to pass the carriageway whilst foraging, commuting and dispersing. It is advised that this underpass remains unobstructed to allow for continuing use by mammals.

6. References

6.1.1. AECOM (2016) A47 Thickthorn Interchange Improvements PCF Stage 2 Environmental Assessment Report Volume 1 – December 2017.

6.1.2. AECOM (2017) Thickthorn Junction Badger and Polecat Survey – November 2017.

6.1.3. AECOM (2017) A47 Thickthorn Junction Improvements Water Vole and Otter Survey Report – November 2017.

6.1.4. Sweco UK (2018) A47/A11 Thickthorn Junction Polecat Survey Report.

Annex A. Camera trap locations

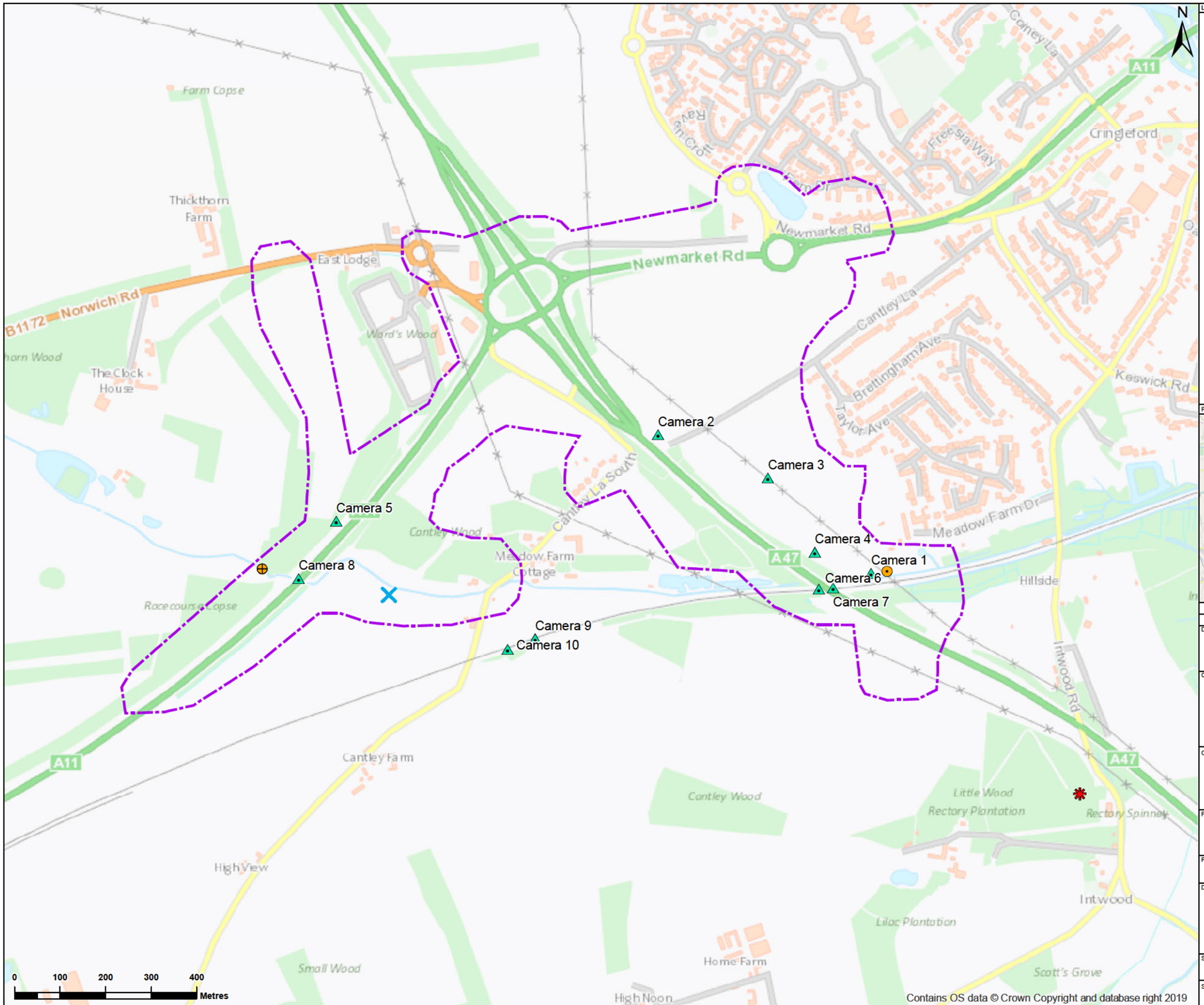
Location	Ordnance Survey (OS) Grid Reference	Description
1	TG 19175 04870	Adjacent to the northern edge of the rail line, east of the A47. Camera placed on tree-line, facing south towards stream and rail line. Tree line, stream and rail line may act as corridor for European polecat.
2	TG 18760 05119	Along the Cantley Lane footbridge over the A47. Land adjacent to the footbridge woodland. The footbridge and path leading to it may act as a commuting corridor for European polecat.
3	TG 18945 05061	To the south of A11 and east of A47. Camera placed on hedgerow between two (2) arable fields, facing east. Hedgerow may act as corridor for European polecat dispersal. Area is heavily populated by rabbits, prey items of European polecat.
4	TG 19019 04933	Adjacent to the A47 south of the Thickthorn Junction, just north of the rail line. Camera placed in woodland facing north-west on a small clearing. European polecats use a wide range of habitats and will inhabit woodland. Woodland along edge of A47 may act as corridor for dispersal and commuting.
5	TG 17962 04937	To the south-west of the Thickthorn Junction, adjacent to the northern verge of the A11. Camera placed on fence line facing west on planted scattered trees. Mammal tracks present throughout the area. Rabbits are present in the area, providing a food source for European polecat. The location is near the A11 underpass, which European polecat may use to overcome the barrier of the road.
6	TG 19054 04845	To the south of the Thickthorn Junction, directly adjacent to the A47 to the east and the rail line to the south. Camera was placed on a tree facing south on the stream and rail line. The rail line and stream may be used by European polecat as commuting corridors.
7	TG 19105 04847	To the south of the Thickthorn Junction, adjacent to the rail line and culverted stream just to the east of the A47. Camera placed on a tree facing north-east in the woodland. The stream and rail line may provide a corridor for commuting European polecats.
8	TG 17901 04870	To the south-west of the Thickthorn Junction, to the north of the A11. The camera was placed just to the east of the A11 underpass, on a tree facing east on planted scattered trees. European polecat may use the A11 underpass to overcome the barrier of the road. Rabbits are present in the area and there are several mammal tracks.
9	TG 18126 04639	To the south-west of the Thickthorn Junction, on the northern edge of the rail line. The camera was placed on the fence between the rail line and arable field margin, facing east. The area is heavily populated with rabbits providing a food source for European polecat. The arable field margin and rail line may be used as a commuting passage.
10	TG 18066 04615	To the south-west of the Thickthorn Junction, on the northern edge of the rail line, west of location nine (9). The camera was placed on the fence between the rail line and arable field margin, facing east. The area is heavily populated with rabbits providing a food source for European polecat. The arable field margin and rail line may be used as a commuting passage.

Annex B. Survey dates and species identification

12/02/2020 – 24/02/2020					
Location	2	3	4	8	9
Grid Reference	TG 18760 05119	TG 18945 05061	TG 19019 04933	TG 17901 04870	TG 18126 04639
Polecat	[redacted]				
Badger					
Muntjac		Present		Present	
Red Fox			Present		Present
Rabbit		Present	Present		Present
Other	Present				
24/02/2020 – 11/03/2020					
Location	1	2	5	7	10
Grid Reference	TG 19175 04870	TG 18760 05119	TG 17962 04937	TG 19105 04847	TG 18066 04615
Polecat	[redacted]				
Badger					
Muntjac	Present	Present	Present	Present	Present
Red Fox		Present	Present		
Rabbit	Present	Present	Present		Present
Other		Present			Present
11/03/2020 – 26/05/2020					

Location	3	4	7	8	9
Grid Reference	TG 18945 05061	TG 19019 04933	TG 19105 04847	TG 17901 04870	TG 18126 04639
Polecat	[redacted]				
Badger	[redacted]				
Muntjac	Present	Present	Present	Present	Present
Red Fox	Present	Present	Present	Present	Present
Rabbit	Present	Present	Present		Present
Other		Present	Present		
26/05/2020 – 09/06/2020					
Location	1	2	5	6	10
Grid Reference	TG 19175 04870	TG 18760 05119	TG 17962 04937	TG 19054 04845	TG 18066 04615
Polecat	[redacted]				
Badger					
Muntjac		Present	Present	Present	
Red Fox		Present	Present		Present
Rabbit	Present		Present		Present
Other	Present				Present

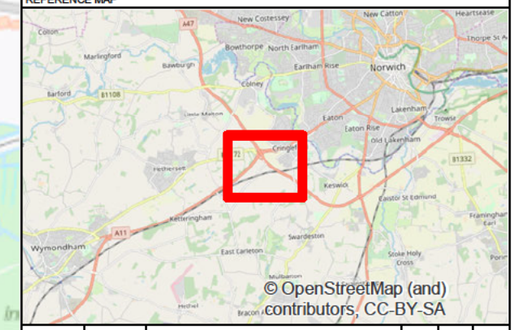
Annex C. Polecat survey camera locations and incidental sightings



LEGEND

- Polecat camera locations
- Otter spraints (incidental sighting)
- Otter anal jelly (incidental sighting)
- [redacted]
- Invasive non native species
- Main study area - polecat survey

REFERENCE MAP



REV	DATE	REVISION NOTE	ORG	CHK'D	APP'D
P03	27/11/2019	RESTRICTION CHANGE	AC	AW	DW

DESIGNER: SWECO

CONTRACTOR: GallifordTry

CLIENT: highways england

PROJECT TITLE: A47/A11 THICKTHORN JUNCTION

PROJECT STAGE: PCF STAGE 3

DRAWING TITLE: POLECAT SURVEY CAMERA LOCATIONS AND INCIDENTAL SIGHTINGS

SUITABILITY: FOR INFORMATION

SHEET SIZE	SCALE	STATUS
A3	1:8,000	S0

DRAWING NUMBER: HE551492-GTY-EBD-000-DR-LB-30002