

Appendix 5.5. Bat Surveys Report, 2021a

BAT SURVEYS CONDUCTED AT PROPOSED EXTENSION AND OUTFLOW AREA AT MORTARSTOWN WASTE WATER TREATMENT PLANT AND PUMPING STATION, CARLOW



Report Prepared for

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ABSTRACT

Structure:	Mortarstown Waste Water Treatment Plant and Pumping Station, Carlow
Grid Reference:	Mortarstown Waste Water Treatment Plant S715 747 Pumping Station S715 756
Bat species Present:	Soprano pipistrelle, Common pipistrelle, Leisler's bat, Brown long-eared
Proposed Works:	<u>Mortarstown WWTP</u> Replace existing inlet works with new inlet works Replace existing circular stormwater holding tank Two new rectangular primary settlement tanks Extension to existing blower building Replace existing two final settlement tanks Ancillary site works Movement to north of proposed outfall pipe <u>Kilkenny Road Pump Station</u> Replace existing foul pumps with 2 new foul pumps Replace existing storm water pumps with 2 new pumps Install new stormwater overflow screen + ancillary site works Extension of site to south of existing site
Impact on Bats:	There will be no impact on bats.
Bat Surveys by:	Caroline Shiel
Dates:	6 th May/7 th May 2021

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1. SUMMARY

I was contracted by Julie Larkin of Atkins Global, to conduct additional bat surveys on the site of Mortarstown waste water treatment plant and pumping station. Bat surveys were previously conducted in late September and early October 2020. Since September 2020, there has been some changes in the proposed site layout of (1) the outflow pipe from the Mortarstown plant and (2) the site boundary of the pumping station.

The waste water treatment plant is situated in Mortarstown townland on the southern side of Carlow town, whereas the pumping station is situated immediately west of the R448 Kilkenny Road. There are plans to extend the areas of both the waste water treatment plant and the pumping station.

These additional bat surveys were conducted overnight on 6th /7th May 2021.

2. AIMS OF BAT SURVEY

- (a) To determine the importance of the sites for bats.
- (b) To assess the impact of the proposed extension works on bats using the sites.
- (c) To make recommendations in order to reduce the impact of extension works on bats using the sites.

3. INTRODUCTION

3.1 Bat Species

Bats belong to the Order Chiroptera and to date nine species are recorded as resident in Ireland. These nine species are divided into two families – Family Vespertilionidae which contain nine of our Irish species (Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, Whiskered bat *Myotis mystacinus*, Leisler's bat *Nyctalus leisleri*, Long-eared bat *Plecotus auritus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Common Pipistrelle *Pipistrellus pipistrellus* and Nathusius Pipistrelle *Pipistrellus nathusii*) and one species in the family Rhinolophidae –the Lesser Horseshoe bat *Rhinolophus hipposideros*.

Brandt's bat *Myotis brandii* has only been recorded once in Ireland from a site in Co. Wicklow and is classified as a vagrant. In 2013 a single male Greater horseshoe bat *Rhinolophus ferrumequinum* was recorded in Co. Wexford. This bat was also considered to be a vagrant. During the field season of 2020 recordings were made of a Greater horseshoe bat in Co. Wicklow. Further investigations are on going.

3.2 Legislation

The serious decline in bat populations both in Ireland and across Europe has led to conservation measures and appropriate legislation being drawn up and implemented in an attempt to stabilise population numbers. It is estimated that bat populations across Europe have decreased by up to 60% in the last 30 years. As they are highly specialised animals, bats serve as biological indicators and are often amongst the first animal species to show signs of population change due to the activities of man. Destruction of roosts and foraging areas, coupled with the widespread use of pesticides, are the key reasons for the decline in numbers of bats in Ireland. Efforts should be made to retain known bat colonies and methods to lessen disturbance to these animals should be incorporated into any development.

Bats' dependency on insects has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increased use of pesticides. Their reliance on buildings has also made them vulnerable to building repairs and the use of chemicals for timber treatment. Roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development.

Irish Legislation

Wildlife Act 1976 – In the Republic of Ireland, under Schedule 5 of the Wildlife Act 1976 all bats and their roosts are protected by law. It is an offence to disturb either without the appropriate licence. This Act was further strengthened by the Wildlife Amendment Act 2000.

E.U. Legislation

Under the Habitats Directive 1992 (EEC 92/43), each member state of the E.U. was requested to identify habitats of national importance and priority species of flora and fauna. These habitats are now designated as Special Areas of Conservation (SAC). In Ireland, all bat species, except one are classified as Annex IV species under the Habitats Directive. Annex IV species are species in need of strict protection. The exception is the Lesser Horseshoe bat which is an Annex II species (Priority Species). Annex II species are species requiring the designation of Special Areas of Conservation specifically for their protection. All species of bat in Ireland are strictly protected under the Habitats Directive to include deliberate disturbance of these species, particularly during the periods of breeding, rearing and hibernation. It also specifies deterioration or destruction of breeding or resting places.

International Legislation

Ireland has ratified two international wildlife laws pertaining to bats

- (a) The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1982) – part of this convention stipulates that all bat species and their habitats are to be conserved.
- (b) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, Enacted 1983). This was instigated to protect migrant species across all European boundaries.

4. PROPERTY:

Mortarstown Waste Water Treatment Plant

Grid Reference: S715 747

Mortarstown WWTP is situated on the southern side of Carlow town between the R448 regional road and Green Road. The site entrance is on the Green Road. The current site consists of several buildings and settlement tanks. The buildings include the administration building/site office and storage sheds built in red brick, and a large red brick building, housing inlet works, at the north western corner of the existing site. There are three large circular settlement tanks in the centre of the site (Figure 1).



Figure 1 – aerial view of layout of Mortarstown Waste Water Treatment Plant and proposed extension area to the west of the existing site.



Figure 2 – aerial view of proposed extension area showing position of Songmeter at entrance gate to extension area (red star) and approximate position of existing outflow pipe to River Barrow (red line). The position of the potential tree roost is indicated with a blue star.

The proposal is for two additional settlement tanks to be situated in the southern section of the proposed extension area. The alignment of the proposed outfall pipe will be moved slightly north of the existing outfall pipe. The outfall pipe runs from the Mortarstown plant in a north westerly direction under the R448 regional road and under a wooded area to reach the eastern bank of the River Barrow.

Kilkenny Road Pumping Station

Grid Reference: S715 756

The pumping station is located to the west of the R448, between the road and the River Barrow. It is proposed to extend the area of the pumping station further south.



Figure 3 - Pumping station on Kilkenny Road. The pumping station lies immediately east of the River Barrow. The red line boundary has been extended further south.

5. SURVEY METHODOLOGY

Daylight Inspections

On 6th May 2021, the area in the vicinity of the outflow pipe from Mortarstown WWTP between the R448 and the River Barrow was assessed for roosting and foraging potential for bats. Trees were surveyed to assess their suitability as bat roosts by searching for roost features such as crevices, hollows and splits in the trunk and branches.

The extended area south of the pumping area was surveyed in a similar manner.

Bat Detector Surveys

The previous bat survey (October 2020) had identified the cottage and horse chestnut trees on the lane backing onto the proposed extension area at Mortarstown as having high potential for roosting bats. A dusk bat detector survey was conducted outside this property. This was followed by a bat detector survey at the site of the proposed extension to the pumping station to assess foraging activity in this location.

Bat activity on site was also surveyed by placing a Songmeter detector overnight at the gateway to the proposed extension area (Figure 2).

A dawn bat detector survey was conducted in the vicinity of a large dead beech tree between the R448 and the River Barrow, south of the existing pipeline from Mortarstown.

6. SURVEY CONSTRAINTS

Weather was favourable on the evening of the survey but temperature dropped to 6 C at dawn. This drop in temperature would have resulted in a drop in bat activity.

7. SURVEY RESULTS

7.1 Daylight survey

Only one additional potential bat roost was identified in the vicinity of the outflow pipe – a large dead beech tree with obvious cavities between the R448 and the River Barrow. This tree is on the northern boundary of the garden to the south of the outflow pipe. The position of this tree is indicated in Figure 2.

No potential roost sites were recorded in the extension area south of the pumping station.

7.2 Bat Detector Surveys

Mortarstown

Date = 06/05/21, Sunset = 21.04, Weather = Clear, calm & dry, Temperature = 12C

A dusk bat detector survey was conducted outside the cottage on the lane on western boundary of proposed extension area at Mortarstown WWTP. No bats were recorded emerging from the house or from the trees. Several Soprano and Common pipistrelles were recorded foraging along the lane in front of the house during the dusk survey.



Figure 4 – showing position of the cottage backing onto site (blue star). A dusk bat detector survey was conducted outside this property

Date – 07/05/21, Sunrise = 05.43, Weather = Clear, calm & dry, Temperature = 6C
 A dawn bat detector survey was conducted on 7th May 2021 beside this beech tree. No bats were recorded returning to the tree at dawn.



Photo 1 – dead beech tree to south of outflow pipe

Pumping Station

A bat detector survey of the proposed extension area to the south of Kilkenny road pumping station was conducted on 6th May 2021. No bat activity was recorded in the extension area as the habitat is too cluttered. Both Common and Soprano pipistrelles were recorded foraging in the open area of the pumping station itself and along the R448 road.

7.3 Remote Bat Detector Survey

Calls recorded on the Songmeter 4 remote bat detector were analysed. The total number of calls was 51 (8 Soprano pipistrelle, 30 Common pipistrelle, 6 Leisler's, 7 Brown long-eared). The majority of the bat activity was recorded before midnight. Activity dropped off as temperatures fell overnight.

Time	Pumping Station
21.00 - 21.30	1 Soprano pipistrelle (21.28 – first bat)
21.30 – 22.00	14 Common pipistrelle, 5 Leisler's
22.00 - 22.30	6 Common pipistrelle, 1 Soprano pipistrelle, 1 Brown Long-eared
22.30 – 23.00	4 Common pipistrelle, 4 Soprano pipistrelles, 1 Brown long-eared
23.00 – 23.30	2 Common pipistrelle, 1 Leisler's
23.30 – 00.00	2 Common pipistrelles, 1 Soprano pipistrelle

00.00 – 00.30	1 Common pipistrelle, 1 Brown long-eared
00.30 – 01.00	0 calls
01.00 – 01.30	1 Brown long-eared
01.30 – 02.00	1 Soprano pipistrelle
02.00 – 02.30	1 Common pipistrelle
02.30 – 03.00	2 Brown long-eared
03.00 – 03.30	0 calls
03.30 – 04.00	1 Brown long-eared (last bat = 03.54)
04.00 – 04.30	Birds
04.30 – 05.00	Birds

Table 1 – Results from the Songmeter placed at western entrance to proposed extension area at Mortarstown WWTP (Sunset = 21.04, Sunrise = 05.43)

9. RECOMMENDATIONS AND MITIGATION MEASURES

9.1 Derogation Licence

The proposed extension project does not require a derogation licence from the National Parks and Wildlife Service. No bat roosts were recorded on site or adjacent to the site.

10. BIBLIOGRAPHY

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PHOTOGRAPHS



Photo 1 – Microphone of Songmeter 4 position at western entrance to proposed extension area at Mortarstown WWTP



Photo 2 – entrance gate to proposed extension area at Mortarstown. Position of Songmeter is indicated



Photo 3 – lane to west of proposed extension area at Mortarstown. Soprano and Common pipistrelles were recorded foraging along this lane



Photo 4 – area in vicinity of outflow pipe to west of R448 road



Photo 5 – Japanese knotweed growing in wooded area to west of R448



Photo 6 – River Barrow in vicinity of outflow pipe. Note presence of Japanese knotweed



Photo 7 – dead beech tree to south of outflow pipe where dawn bat detector survey was conducted



Photo 8 – crevices and cavities in dead beech tree



Photo 9 – cottage on lane west of proposed extension area at Mortarstown WWTP where dusk bat detector survey was conducted



Photo 10 – rear of cottage on lane west of proposed extension area at Mortarstown WWTP where dusk bat detector survey was conducted



Photo 11 – area to south of Pumping Station for proposed extension