

**A bat assessment of the site at Drumlin, Drive, Coothill, Co Cavan**



**By Donna Mullen M.P.P.M D.E.N.V.S. P**

**Brian Keeley BSc hons zool**

**Maio, Tierworker, Kells Co Meath**

**Date 13 July 2020**

**[www.wildlifesurveys.net](http://www.wildlifesurveys.net)**

## Summary

Four species of bat were found feeding and commuting. Most bat activity occurred along the eastern and southern hedgerows. The trees on the site are not roosts at present. They are semi mature and have low roosting potential for bats. However, they provide a feeding area and shelter from the rain, and most feeding activity took place by the ash trees.

## Bat species found feeding and commuting on the site

Common pipistrelle -*pipistrellus pipistrellus*

Soprano pipistrelle – *pipistrellus pygmaeus*

Leisler's bat – *nyctalus Leisleri*

Daubenton's bat – *myotis daubentonii*

## Recommendations

(1) Bats will suffer a loss of feeding and shelter if the hedgerow is felled. Semi-mature native shrubs and trees must be used to replace these along the new boundary if the hedgerow is removed. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan - <http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-friendly-planting-code-temporary-draft.pdf>

(2) If bats are discovered at any stage of the development, building work must cease and myself and the wildlife ranger must be contacted.

(3) Daubenton's bats are particularly intolerant of light. A dark sky area must be designated within the development to provide commuting and feeding corridors, and light spillage and pollution must be kept to a minimum with the use of cowls, caps, and low-level bollard lighting where possible.

Lighting design will be in accordance with

[Bats and Lighting](#) – Guidance Notes for Planners, Engineers, Architects, and Developers (Bat Conservation Ireland, 2010).

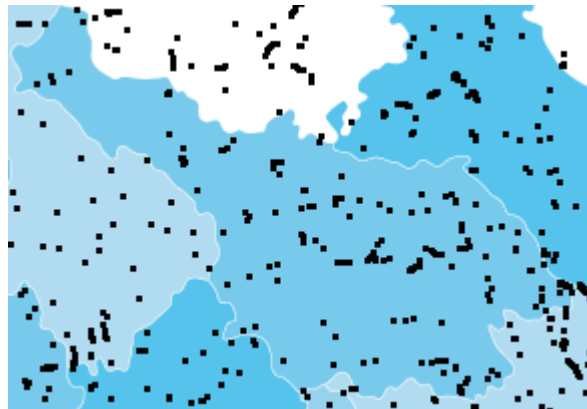
- [Bats and Lighting in the UK](#) – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018).
- [Guidance Notes](#) for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011).
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(4) Four 2F and three 1FF Schwegler bat boxes with built-in timber panel bat boxes must be put in place. These should be placed on trees or posts, at least 3m high,

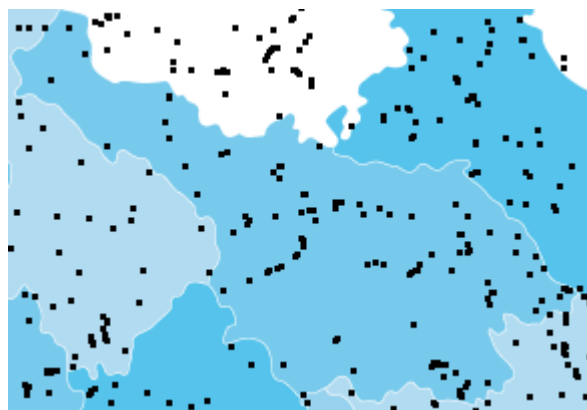
with a clear drop below (as bats need to drop to start their flight). These can be purchased from [www.nhbs.com](http://www.nhbs.com) They must be placed in a dark area.

### **Desktop Survey of the existing environment**

Thanks to Bat Conservation Ireland for their data. All data from this report will be placed on their database.



Common pipistrelle distribution for Cavan



Leisler's bat distribution for Cavan



Soprano pipistrelle distribution for Cavan



Daubenton's bat distribution for Cavan

**Habitat Classification** (Fossitt 2000)

GS2 (Dry meadows)

WL2 (Treelines) semi- mature and mature trees

WL1 (hedgerow)

**Date** –13 July 2020

**Sunrise** – 5.14

**Sunset** –21.53

**Temperature and weather conditions** – 13C – 9C, light rain at dawn.

**Lux levels** – 1 lux at 4.37 am within the site.

**Proposed works** – See planning application

**Complexity of lands and ability to cover ground during surveys** –All areas were accessible

## **Methodology**

Bat Survey - Equipment

Exide Lamps

Pletzl Tikka Head torch

One EM3 time expansion detector and kaleidoscope sound analysis software with GPS – handheld by Donna Mullen

One Mini song meter placed in the hedgerow at the southern corner



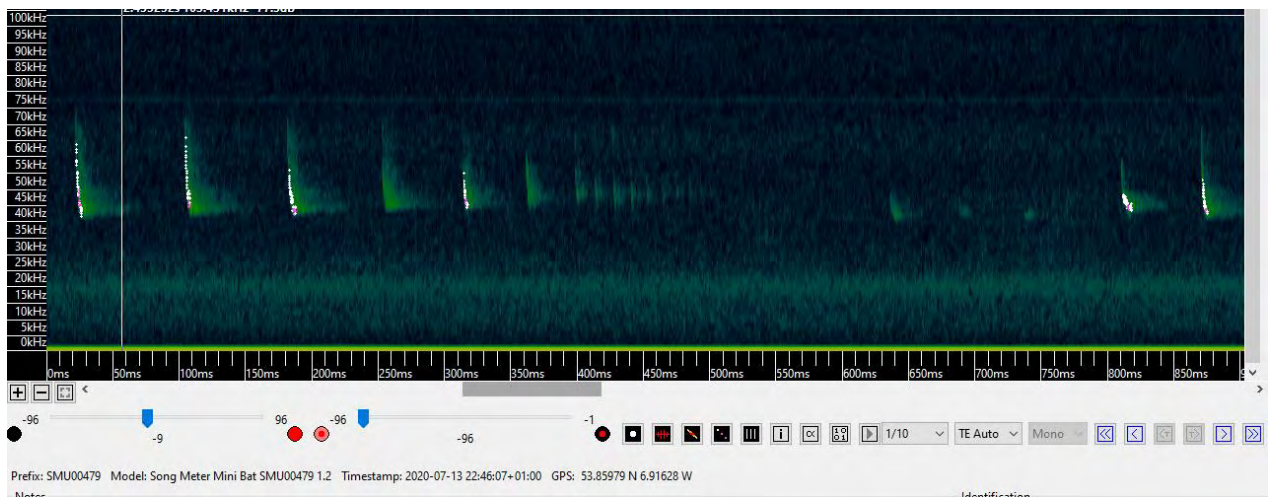
**Mini detector recording overnight**

## Survey

The survey commenced on 13/07/2020 at 21.30. A common pipistrelle was seen along the southern hedgerow. It flew along the hedgerow feeding and then into the housing estate at Griffith Avenue at 22.23.

At 22.36, a soprano pipistrelle was seen feeding along the western hedgerow. At 22.40 a common pipistrelle was seen over the north eastern corner of the site. At 22.44 both a common and soprano pipistrelle were seen feeding by the ash trees at the northern hedgerow. The soprano pipistrelle was social calling. The common pipistrelle then moved to the eastern hedge

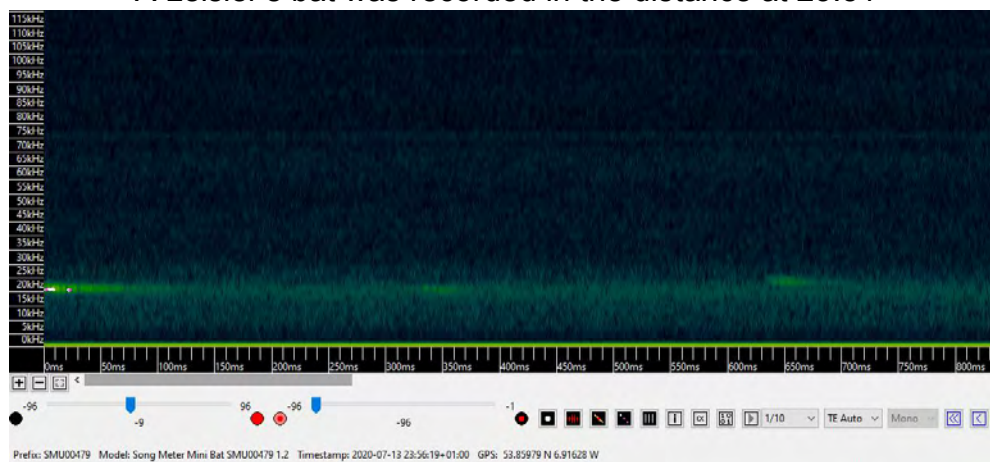
A common pipistrelle was seen feeding along the southern hedgerow at 22.46.



### Feeding buzz of common pipistrelle along the southern hedgerow

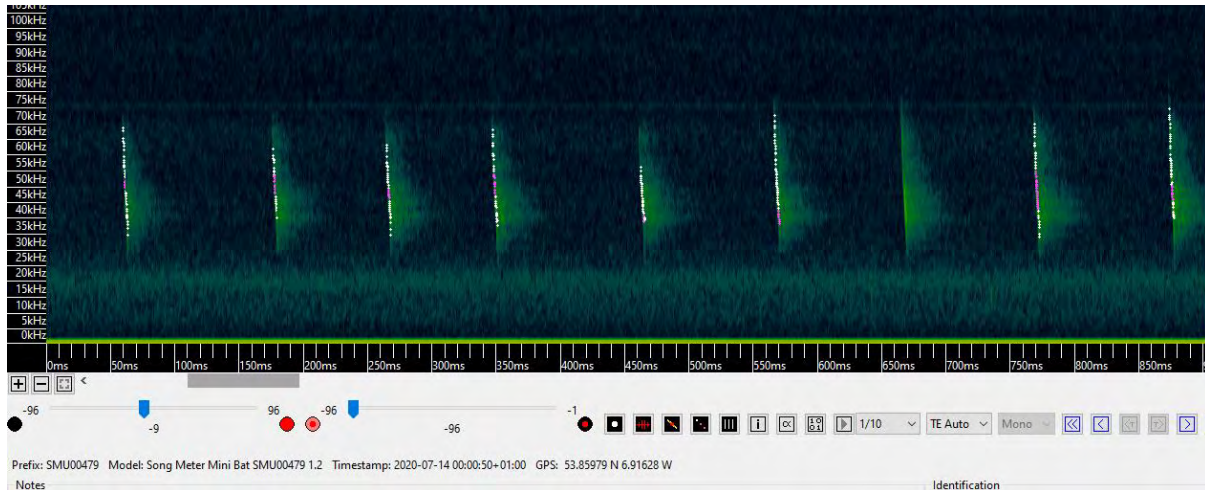
At 22.49 a common pipistrelle was recorded by the entrance gate of the site. It fed along the road until 22.57.

A Leisler's bat was recorded in the distance at 23.51



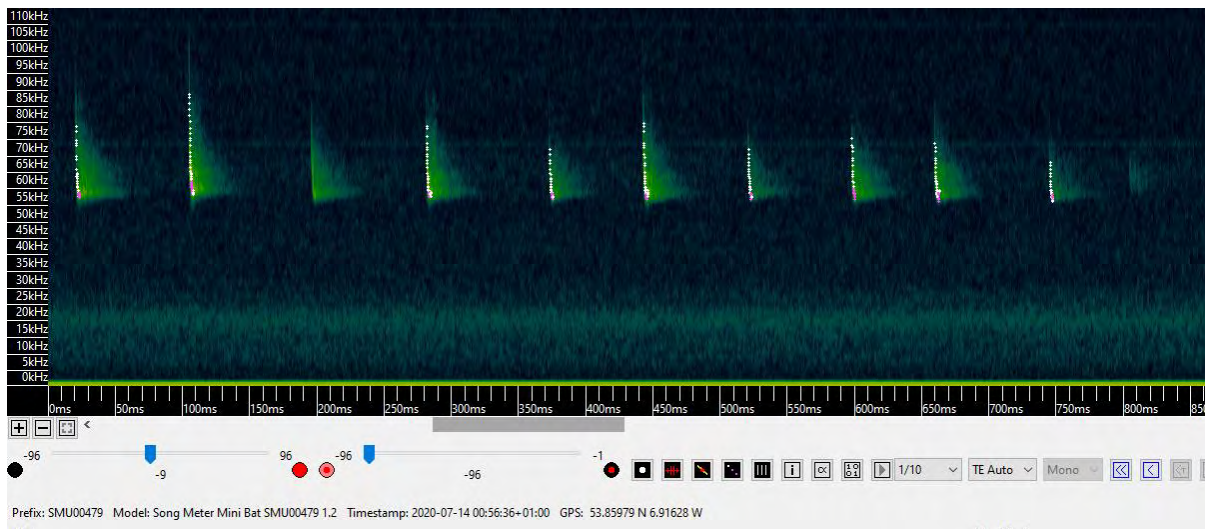
### Leisler's bat

A Daubenton's bat passed along the southern hedgerow at 00.50.



### Daubenton's bat at 00.50

A soprano pipistrelle fed along the southern hedgerow at 00.56 and at intervals throughout the night until 4.29.



### Soprano pipistrelle at the southern hedgerow

A common pipistrelle was seen by the entrance gate at 4.20. There was light to heavy rain. A second common pipistrelle was seen feeding along the western hedge at 4.43, when it flew west, off the site.

## Bat Activity recorded on site



Blue triangle – Daubenton's bat

Green triangle – Leisler's bat

Red triangle – Common pipistrelle

Yellow triangle – Soprano pipistrelle

Red arrow – Common pipistrelle feeding/commuting

Yellow arrow – Soprano pipistrelle feeding/ commuting

## Results

Four species of bat were found feeding and commuting. Most bat activity occurred along the eastern and southern hedgerows. The trees on the site are not roosts at present. They are semi mature and have low roosting potential for bats. However, they provide a feeding area and shelter from the rain, and most feeding activity took place by the ash trees.



## Potential impact on roosts, flight paths and feeding areas

(1) Roost loss - No roosts were found on this occasion. Provision of bat boxes will lead to a long-term positive effect on individual bats.

(2) Loss of feeding – Four species fed overnight. With retention or replacement of trees and hedgerows, and planting from the All-Ireland pollinator plan, there will be a long-term neutral effect on individual bats

(3) Light pollution – Lux levels on the site are 0- 1 lux throughout the night. Even with mitigation, there is likely to be some light spillage on the site in the future. This will have a mild long-term negative effect on individual bats, particularly the Daubenton's bat.

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## Mitigation

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## **Bat Biology**

Female bats gather in groups known as maternity roosts in summer to have their young. They generally have one baby each year, so are slow to reproduce, and disturbance of a maternity roost can be catastrophic.

In winter bats move to old stonework, trees, and caves to hibernate. They are especially vulnerable here as they are slow to awaken, and if tree felling is carried out, they can easily be killed.

## **Legislation**

Bats are protected under the 1996 Wildlife Act, the 2000 Wildlife (Amendment) Act, Stat Ist 94 of 1997, Stat Ist 378 of 2005, The Habitats Directive, The Bonn and Bern Convention, and the Euro bats agreement.

The European Community (Natural Habitats) Regulations S.I. No 94 of 1997 states:

23(1) The minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the animal species set out in Part 1 of the First Schedule prohibiting –

a) All forms of deliberate capture or killing of specimens of those species in the wild.

1. The deterioration or destruction of breeding sites or resting places of those species.

The EU Habitats Directive

Article 12(1) of the ‘Council Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (Habitats Directive) states:

“Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV(a) and their natural range, prohibiting:

a) all forms of deliberate capture or killing of specimens of these species in the wild.

- b) deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation, and migration.
- c) deliberate destruction or taking of eggs from the wild.
- d. deterioration or destruction of breeding sites or resting places.”

The EU Habitats Directive (92/43/EEC) lists all Irish bat species in Annex IV and one Irish species, the lesser horseshoe bat (*Rhinolophus hipposideros*), in Annex II. Annex II includes animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation (SACs) because they are endangered, rare, vulnerable, or endemic. Annex IV includes various species that require strict protection. Article 11 of the Habitats Directive requires member states to monitor all species listed in the Habitats Directive and Article 17 requires States to report to the EU on the findings of monitoring schemes.

### The Bern and Bonn Conventions

Ireland is also a signatory to a number of conservation agreements pertaining to bats such as the Bern and Bonn Conventions. The European Bats Agreement (EUROBATS) is an agreement under the Bonn Convention. Ireland and the UK are two of the 31 signatories. The Agreement has an Action Plan with priorities for implementation. Devising strategies for monitoring of populations of selected bat species in Europe is among the resolutions of EUROBATS.

#### 1.3.1 The Berne Convention

Article 6 of the “Convention on the Conservation of European Wildlife and Natural Habitats’ (Berne Convention) reads:

“Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the special protection of the wild fauna species specified in Appendix II. The following will in particular be prohibited for these species:

- a) all forms of deliberate capture and keeping and deliberate killing.
- b) the deliberate damage to or destruction of breeding or resting sites.
- c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention; ...

Appendix II lists strictly protected fauna species and this list includes “Microchiroptera, all species except *Pipistrellus pipistrelles*”.

### The EUROBATS Agreement

The ‘Agreement on the Conservation of Populations of European Bats’ (EUROBATS) was negotiated under the ‘Convention for the Conservation of

Migratory Wild Species' (Bonn Convention) and came into force in January 1994. The legal protection of bats and their habitats are given in Article III as fundamental obligations:

“1. Each Party shall prohibit the deliberate capture, keeping or killing of bats except under permit from its competent authority

2. Each Party shall identify those sites within its own area of jurisdiction which are important for the conservation status, including for the shelter and protection, of bats. It shall, taking into account as necessary economic and social considerations, protect such sites from damage or disturbance. In addition, each Party shall endeavour to identify and protect important feeding areas for bats from damage or disturbance.”

The Agreement covers all European bat species.

**Contact Details:**

The phone number for Bat Conservation Ireland is 086 4049468. Their website is [www.batconservationireland.org](http://www.batconservationireland.org). I can be contacted at 087 7454233. My email is [donnamullen@wildlifesurveys.net](mailto:donnamullen@wildlifesurveys.net) and web site is [www.wildlifesurveys.net](http://www.wildlifesurveys.net)

# Appendix 1

## Song meter mini sound analysis

File Help

	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
1	SMU00479_20200714_000050_000.wav		MYODAU	33	31	0.939000	MYODAU
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35	SMU00479_20200713_215201_000.wav		Noise				
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37	SMU00479_20200713_215332_000.wav		Noise				
38	SMU00479_20200713_215347_000.wav		Noise				
39	SMU00479_20200713_215617_000.wav		Noise				
40	SMU00479_20200713_215822_000.wav		Noise				
41	SMU00479_20200713_215403_000.wav		Noise				
42	SMU00479_20200713_215746_000.wav		Noise				
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44	SMU00479_20200713_215751_000.wav		Noise				
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	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
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148	SMU00479_20200713_223344_000.wav		PIPIPI	22	22	1.000000	
149	SMU00479_20200713_225324_000.wav		PIPIPI	22	22	1.000000	
150	SMU00479_20200713_225293_000.wav		PIPIPI	33	22	0.667000	
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165	SMU00479_20200713_225945_000.wav		PIPIPI	11	11	1.000000	
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189	SMU00479_20200713_224057_000.wav		PIPPYG	6	6	1.000000	
190	SMU00479_20200713_214559_000.wav		PIPPYG	3	3	1.000000	

## Appendix II

### Sound analysis of handheld EM3 Detector

Results  
File Help

	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
1	EM3_20200713_222113_000.wav		NoID	8	0	0.000000	PIPPYG
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3	EM3_20200713_222128_000.wav		NoID	6	0	0.000000	PIPPIP
4	EM3_20200713_222158_000.wav		NoID	3	0	0.000000	Noise
5	EM3_20200713_222859_000.wav		NoID	20	0	0.000000	PIPPIP
6	EM3_20200713_213236_000.wav		Noise				Noise
7	EM3_20200713_213306_000.wav		Noise				Noise
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9	EM3_20200713_213336_000.wav		Noise				
10	EM3_20200713_213436_000.wav		Noise				
11	EM3_20200713_213536_000.wav		Noise				
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43	EM3_20200713_213822_000.wav		Noise				
44	EM3_20200713_213150_000.wav		Noise				
45	EM3_20200713_213221_000.wav		Noise				
46	EM3_20200713_213852_000.wav		Noise				
47	EM3_20200713_213952_000.wav		Noise				

	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
339	EM3__20200714_044139_000.wav		Noise				
340	EM3__20200714_043824_000.wav		Noise				
341	EM3__20200714_044210_000.wav		Noise				
342	EM3__20200714_043854_000.wav		Noise				
343	EM3__20200714_043924_000.wav		Noise				
344	EM3__20200714_043954_000.wav		Noise				
345	EM3__20200714_044024_000.wav		Noise				
346	EM3__20200714_044054_000.wav		Noise				
347	EM3__20200714_044124_000.wav		Noise				
348	EM3__20200714_044154_000.wav		Noise				
349	EM3__20200714_044225_000.wav		Noise				
350	EM3__20200713_222613_000.wav		PIPNAT	2	2	1.000000	PIPPIP
351	EM3__20200713_222443_000.wav		PIPPIP	51	51	1.000000	
352	EM3__20200713_222313_000.wav		PIPPIP	44	42	0.955000	
353	EM3__20200713_221957_000.wav		PIPPIP	41	40	0.976000	
354	EM3__20200713_221842_000.wav		PIPPIP	32	32	1.000000	
355	EM3__20200713_222027_000.wav		PIPPIP	32	32	1.000000	
356	EM3__20200713_221857_000.wav		PIPPIP	29	26	0.897000	
357	EM3__20200713_222043_000.wav		PIPPIP	31	23	0.742000	
358	EM3__20200713_221827_000.wav		PIPPIP	19	18	0.947000	
359	EM3__20200713_221226_000.wav		PIPPIP	17	17	1.000000	
360	EM3__20200713_222453_000.wav		PIPPIP	14	14	1.000000	
361	EM3__20200713_221241_000.wav		PIPPIP	10	10	1.000000	
362	EM3__20200713_222012_000.wav		PIPPIP	9	9	1.000000	
363	EM3__20200713_221211_000.wav		PIPPIP	8	8	1.000000	
364	EM3__20200713_222428_000.wav		PIPPIP	7	7	1.000000	
365	EM3__20200713_222343_000.wav		PIPPIP	6	6	1.000000	
366	EM3__20200713_220941_000.wav		PIPPIP	6	3	0.500000	
367	EM3__20200713_221942_000.wav		PIPPIP	2	2	1.000000	
368	EM3__20200713_222213_000.wav		PIPPIP	2	2	1.000000	
369	EM3__20200714_042207_000.wav		PIPPYG	50	50	1.000000	
370	EM3__20200713_221642_000.wav		PIPPYG	37	37	1.000000	
371	EM3__20200713_221527_000.wav		PIPPYG	32	32	1.000000	
372	EM3__20200713_221612_000.wav		PIPPYG	28	28	1.000000	
373	EM3__20200713_222058_000.wav		PIPPYG	37	28	0.757000	
374	EM3__20200713_221657_000.wav		PIPPYG	26	26	1.000000	
375	EM3__20200713_221712_000.wav		PIPPYG	25	25	1.000000	
376	EM3__20200713_221542_000.wav		PIPPYG	22	22	1.000000	
377	EM3__20200713_221627_000.wav		PIPPYG	20	20	1.000000	
378	EM3__20200713_221512_000.wav		PIPPYG	19	19	1.000000	
379	EM3__20200713_223314_000.wav		PIPPYG	17	17	1.000000	
380	EM3__20200713_221727_000.wav		PIPPYG	14	14	1.000000	
381	EM3__20200713_222243_000.wav		PIPPYG	13	13	1.000000	
382	EM3__20200713_222258_000.wav		PIPPYG	26	11	0.423000	
383	EM3__20200714_042222_000.wav		PIPPYG	10	10	1.000000	
384	EM3__20200713_222228_000.wav		PIPPYG	9	9	1.000000	