

**A bat management plan for Lagan Cement at Killaskillen,
Kinnegad, Co. Meath**



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July 2018

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Summary of Findings

Three bat species were noted throughout the survey area while a further species; Daubenton's bat has been noted within the Biodiversity area. This area is the richest site for bats and the measures here are providing suitable conditions for feeding bats.

None of the buildings were noted as bat roosts within the site in 2018.

Recommendations are included within the report to provide roost options, encourage insect diversity and to avoid measures that would impact negatively upon bats.

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Introduction

Bats live in a range of habitats, from trees to old buildings and need a clean supply of water and insects to eat. Each bat eats approximately 3000 insects per night, so the availability of insects is crucial to their survival. In addition, bats need high temperatures (up to 30C) to breed in during summertime, and low temperatures (7-8C) to hibernate in.

Each species of bat has different requirements, and some are more adaptable than others to human interference. Bats are slow to breed, with one young every year or two, and many species are slow to adapt to change. Recent studies show it takes about 4 years before a brown long eared bat will use a bat box, while a common pipistrelle is more adaptable and will use one immediately. In addition, some bats use cracks and crevices in stone, others prefer wood, and others need a high humidity. Within the quarry there is the potential for addressing bat conservation in the long term. It will be possible to put up roosts and adapt areas for bats, while giving the bats time to find and move into the sites. These measures, both long and short-term will ensure the conservation of the bat population within the site.

To record the bats present, a bat survey took place to identify the species present, their feeding and commuting areas and to look for roost sites.

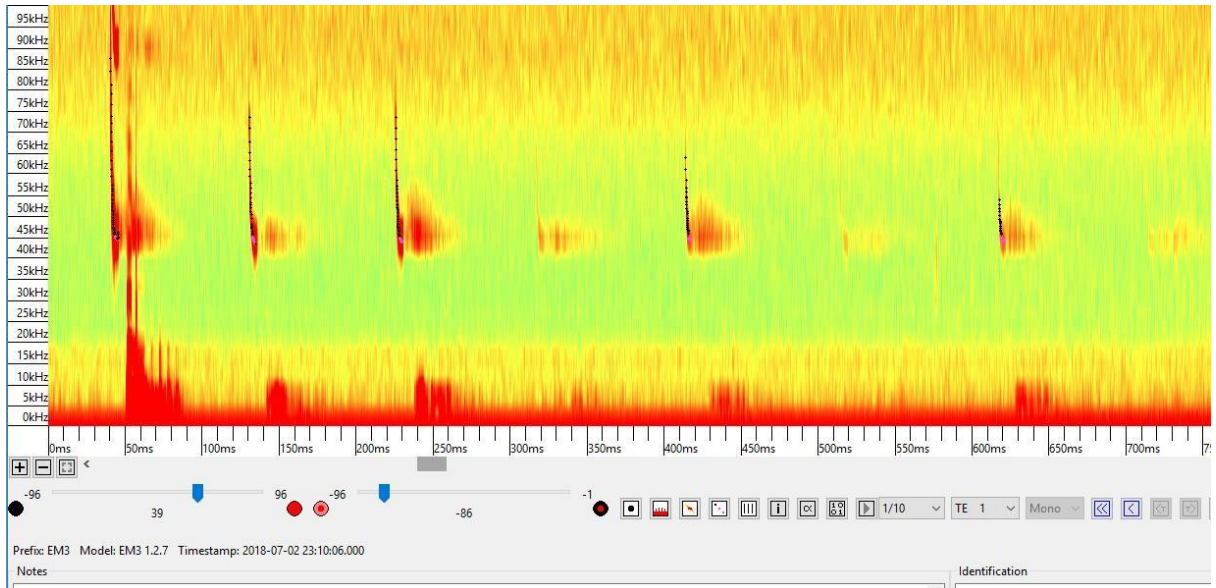
Survey Results

Bats present – feeding and commuting

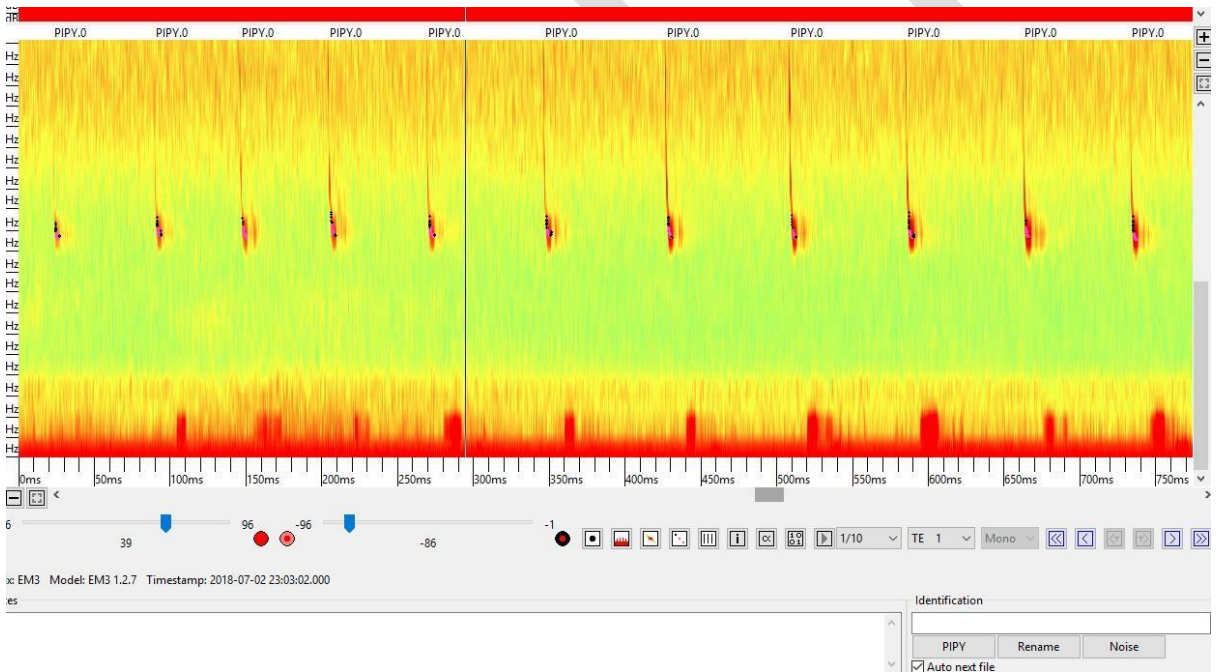
- (1) Leisler's bat – *Nyctalus leisleri*
- (2) Soprano pipistrelle – *Pipistrellus pygmaeus*
- (3) Common pipistrelle – *Pipistrellus pipistrellus*

Common and soprano pipistrelles were found throughout the site, and Leisler's bats were recorded in the biodiversity area. All 3 derelict old buildings were surveyed, but none are currently being used as roosts. For full sound analysis data and detailed methodology, see Appendix I, Appendix II and Appendix III

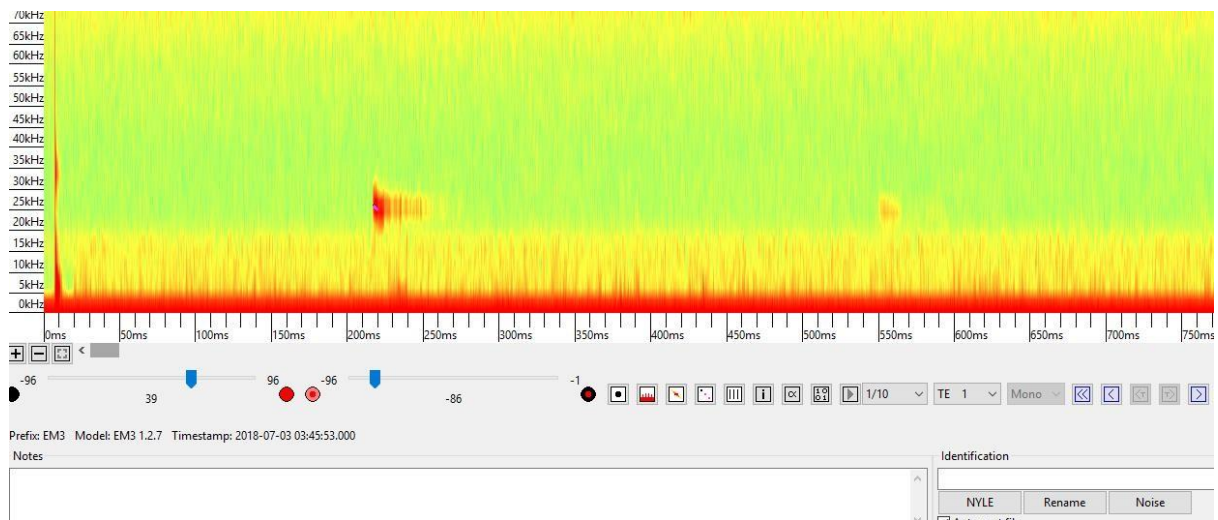
Bat ultrasound recordings of each species found



Soprano pipistrelle feeding to the north of the store shed.



Common pipistrelle feeding by the house behind the main buildings 23.10 hours



Leisler's bat flying by the biodiversity area at 3.45

The 3 derelict buildings were surveyed for bats entering at dawn or leaving at dusk. None of these buildings is currently being used as a roost. Common pipistrelle activity was noted around the roadside building (shown in the following image) but no bat was noted to return to this building prior to dawn and there was no evidence of bat occupancy based on staining, droppings or carcasses.

The ruined house in farmland to the west of the buildings was not in use as a bat roost at the time of this assessment and the adjacent shed has high roost potential. Scrub is beginning to overcrowd the shed and this would lessen the potential for the building if it continues to spread.

Most bat activity occurred over the biodiversity area, although there was good insect availability throughout the site.

Bat Habitat Management Plan

Provision of roosts – Buildings

Three semi derelict buildings, and a small derelict shed are present on the site. These buildings have high potential for bat usage, and measures should be taken to prevent their collapse, while retaining bat access into the buildings. If these buildings are ever scheduled for demolition, a bat survey should precede this.



Roadside building

The stone crevices along this building are ideal for *Myotis* bats. The lower roadside window should be grilled to prevent access by people. Bats will have access through the upper part, and through the entrance within the garden.



Building behind storage sheds

Bats have access to this building through missing slates and broken upper windows. However, the upstairs is well finished and provides few opportunities for roosting bats. Addition of timber battens on the inside ceiling of the upper floor would increase the chances of the building being used as a roost.

Fixing timber battens – The houses are in poor condition, but if safety considerations allow, timber battens should be fixed to the ceilings of the houses. They should appear as joists, 15-18mm apart, with a bituminous felt backing. It is important to have the gap between the timbers very narrow, as bats need to feel squashed between both pieces of timber.



Artificial joist boxes

These joist boxes are particularly used by common and soprano pipistrelles, which were recorded flying in the vicinity of the derelict houses on the site.



Pipistrelle in an artificial joist box



The small shed behind main quarry buildings is also suitable for joist boxes
Joist boxes could also be placed in the small shed – with the gap shown above retained for bat access, and in the passageway of the roadside building.



Passageway of roadside building

Bat boxes

The biodiversity area around the lake is ideal for a bat box project. Common, soprano and Leisler's bats were recorded at the lake, however it would be hoped that myotis species would occur here over time.

Unfortunately, there are no mature trees available to attach bat boxes to. We would recommend the placing of 6 timber (telegraph type) poles approximately 5 metres high around the lake, on which bat boxes can hang. Bats need to drop to fly, so the poles should be placed where there is no underlying vegetation to impede the bats.

Bat box types

Four 2F Schwegler bat boxes should be placed on the poles. These boxes are suitable for Whiskered bats and pipistrelles. One 2FN box should also be placed on a pole. This can be used by brown long eared bats.

The Miramare bat box should be put on the final pole. It replicates tree cavities. It would be hoped that these boxes will provide roosting opportunities over time, while the local scrub grows and forms trees with natural cavities.

Many of the stones around the large lake in the biodiversity areas have cracks and crevices. These are important to retain, as they provide natural crevices for roosting bats, particularly myotis species. All these boxes can be purchase from NHBS.com.



Miramare bat box

A second area which is suitable for bat boxes is the area by the offices. Tall trees without underlying branches are ideal. However, the boxes should be kept away from the artificial light in this area. A Chambord wooden box (available from nhbs.com) should be placed on one of the trees in this area.



Chambord wooden bat box



This tree by the offices is suitable for bat boxes.

Addressing Light Pollution-Provision Of Designated Dark Sky Areas

Lighting affects bats in many ways. It can cause loss of roosts. If a roost is illuminated, some species of bats may be unable to use it. Bats such as Daubenton's, Whiskered and Natterer's bats are very sensitive to light pollution. Light can also delay emergence from a roost- Bats sample the light at their roost before emergence. If the light levels are high, they will not emerge. However, most insects are found shortly after dusk, so if the bats emerge late, they miss their optimal feeding time.

Lighting also causes loss of feeding/commuting routes. Some species of bat – most notably Daubenton's and other myotis bats, avoid illuminated areas. Lighting of a commuting area, for example a waterway, may prevent them from commuting from a roost to a feeding site. Bats may waste precious time and energy commuting longer routes to their feeding areas, and in extreme cases may be unable to feed or roost in their preferred location

Moths and other insects are attracted to the ultraviolet spectrum in lights. Some species of bats are tolerant to light and may feed on the insects found under the streetlights. However, insects are drawn from dark areas, and the bats which are sensitive to light may find that their food supply is reduced.

Restricting Lighting In Sensitive Areas

- (1) Dark skies areas will be designated, around waterways and the biodiversity area.
- (2) Any new lighting within the quarry will be capped with hoods, shields or cowls to prevent light spillage.

Increasing insect availability.

Scrub areas within the site were particularly good for insect availability. At the small pond in the biodiversity areas, vegetation has not yet established, and some low banks of earth/topsoil should be placed near the water, with wildflower seed sprinkled on top. This will aid the regeneration of wildflowers and the insects they attract. Bulk orders of native seeds can be ordered from <http://www.wildflowers.ie/>



This area would benefit from the addition of soil and wildflower seeds

Conclusion

The site at Lagan Cement has great potential for bat usage. In 2018, there were no bats in the buildings within the quarry grounds, but all of the buildings have roost potential of varying degrees. Scrub areas behind the mechanical stores shed, the large ponds and wetlands in the biodiversity areas provide excellent insect availability. The lakes provide drinking water, and new bat boxes will provide roosting opportunities. In addition, careful avoidance of lighting in these sensitive areas will allow usage of these sites by light intolerant myotis species.

Appendix I Methodology for bat survey

Methodology for Bat Survey

Bat Survey - Equipment

Exide Lamp

Petzl Tikka Head torch

QMC Mini 3 bat detector

One SM2 Bat plus time expansion detector and analysis software

Two EM3 time expansion detectors and kaleidoscope analysis software

The SM2 detector was placed within the old building south of the site, the EM3's were hand held.

The SM2 detector was left in place for overnight to record bat activity.

Date 7 July 2018

Weather Conditions

15C – 6C dry night. Good insect activity.

Habitat Classification

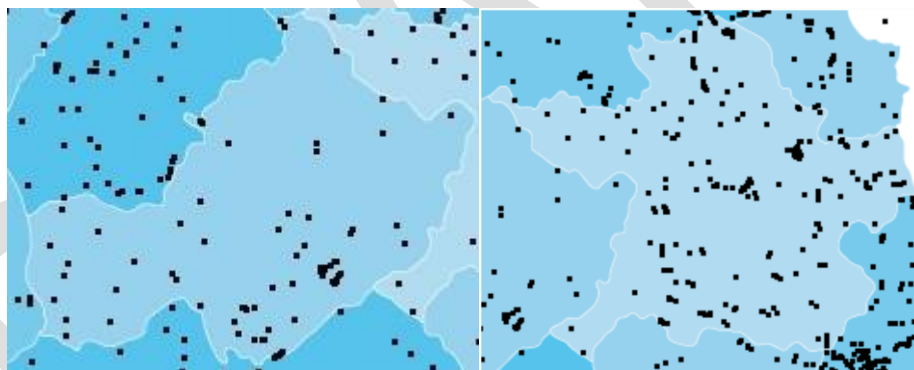
EU2 (artificial underground habitats) GA1(improved agricultural grassland)
WL1(hedgerows) WL2 (treelines) BL1 (stonework) BL3 (buildings) WS1 (Scrub) FW2
(lowland river) ED1 (Exposed sand) FLB (artificial lakes) ED3 (Recolonising bare
ground)

Desktop Study.

Distribution data.



Distribution of common pipistrelles in Westmeath (left) and Meath (right)



Distribution of soprano pipistrelles in Westmeath (left) and Meath (right)



Distribution of Leisler's bats in Westmeath (left) and Meath (right)

Thanks to Bat Conservation Ireland for their data. All data in this report will be logged with them.

Appendix II – EM3 sound analysis data. Handheld by Donna Mullen

Results
File Help

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111	Data	EM3__20180702_224019.wav	EM3__0_20180702_224019_000	Noise	0	0	0.000000	
112	Data	EM3__20180702_224049.wav	EM3__0_20180702_224049_000	Noise	0	0	0.000000	
113	Data	EM3__20180702_224119.wav	EM3__0_20180702_224119_000	Noise	0	0	0.000000	
114	Data	EM3__20180702_224149.wav	EM3__0_20180702_224149_000	Noise	0	0	0.000000	
115	Data	EM3__20180702_224220.wav	EM3__0_20180702_224220_000	Noise	0	0	0.000000	
116	Data	EM3__20180702_224250.wav	EM3__0_20180702_224250_000	Noise	0	0	0.000000	
117	Data	EM3__20180702_224320.wav	EM3__0_20180702_224320_000	Noise	0	0	0.000000	
118	Data	EM3__20180702_224350.wav	EM3__0_20180702_224350_000	Noise	0	0	0.000000	
119	Data	EM3__20180702_224421.wav	EM3__0_20180702_224421_000	Noise	0	0	0.000000	
120	Data	EM3__20180702_224451.wav	EM3__0_20180702_224451_000	Noise	0	0	0.000000	
121	Data	EM3__20180702_224521.wav	EM3__0_20180702_224521_000	Noise	0	0	0.000000	
122	Data	EM3__20180702_224552.wav	EM3__0_20180702_224552_000	Noise	0	0	0.000000	
123	Data	EM3__20180702_224622.wav	EM3__0_20180702_224622_000	Noise	0	0	0.000000	
124	Data	EM3__20180702_224652.wav	EM3__0_20180702_224652_000	Noise	0	0	0.000000	
125	Data	EM3__20180702_224722.wav	EM3__0_20180702_224722_000	Noise	0	0	0.000000	
126	Data	EM3__20180702_224753.wav	EM3__0_20180702_224753_000	Noise	0	0	0.000000	
127	Data	EM3__20180702_224823.wav	EM3__0_20180702_224823_000	Noise	0	0	0.000000	
128	Data	EM3__20180702_224853.wav	EM3__0_20180702_224853_000	Noise	0	0	0.000000	
129	Data	EM3__20180702_224924.wav	EM3__0_20180702_224924_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
129	Data	EM3__20180702_224924.wav	EM3__0_20180702_224924_000	Noise	0	0	0.000000	
130	Data	EM3__20180702_224954.wav	EM3__0_20180702_224954_000	Noise	0	0	0.000000	
131	Data	EM3__20180702_225024.wav	EM3__0_20180702_225024_000	Noise	0	0	0.000000	
132	Data	EM3__20180702_225054.wav	EM3__0_20180702_225054_000	Noise	0	0	0.000000	
133	Data	EM3__20180702_225125.wav	EM3__0_20180702_225125_000	Noise	0	0	0.000000	
134	Data	EM3__20180702_225155.wav	EM3__0_20180702_225155_000	Noise	0	0	0.000000	
135	Data	EM3__20180702_225225.wav	EM3__0_20180702_225225_000	Noise	0	0	0.000000	
136	Data	EM3__20180702_225255.wav	EM3__0_20180702_225255_000	Noise	0	0	0.000000	
137	Data	EM3__20180702_225326.wav	EM3__0_20180702_225326_000	Noise	0	0	0.000000	
138	Data	EM3__20180702_225356.wav	EM3__0_20180702_225356_000	PINA	4	4	0.316528	
139	Data	EM3__20180702_225426.wav	EM3__0_20180702_225426_000	Noise	0	0	0.000000	
140	Data	EM3__20180702_225520.wav	EM3__0_20180702_225520_000	Noise	0	0	0.000000	
141	Data	EM3__20180702_230000.wav	EM3__0_20180702_230000_000	Noise	0	0	0.000000	
142	Data	EM3__20180702_230031.wav	EM3__0_20180702_230031_000	Noise	0	0	0.000000	
143	Data	EM3__20180702_230101.wav	EM3__0_20180702_230101_000	Noise	0	0	0.000000	
144	Data	EM3__20180702_230131.wav	EM3__0_20180702_230131_000	Noise	0	0	0.000000	
145	Data	EM3__20180702_230202.wav	EM3__0_20180702_230202_000	Noise	0	0	0.000000	
146	Data	EM3__20180702_230232.wav	EM3__0_20180702_230232_000	Noise	0	0	0.000000	
147	Data	EM3__20180702_230302.wav	EM3__0_20180702_230302_000	PIPY	14	14	0.779238	PIPY
148	Data	EM3__20180702_230332.wav	EM3__0_20180702_230332_000	Noise	0	0	0.000000	
149	Data	EM3__20180702_230403.wav	EM3__0_20180702_230403_000	Noise	0	0	0.000000	
150	Data	EM3__20180702_230433.wav	EM3__0_20180702_230433_000	Noise	0	0	0.000000	
151	Data	EM3__20180702_230503.wav	EM3__0_20180702_230503_000	Noise	0	0	0.000000	
152	Data	EM3__20180702_230534.wav	EM3__0_20180702_230534_000	Noise	0	0	0.000000	
153	Data	EM3__20180702_230604.wav	EM3__0_20180702_230604_000	Noise	0	0	0.000000	
154	Data	EM3__20180702_230634.wav	EM3__0_20180702_230634_000	Noise	0	0	0.000000	
155	Data	EM3__20180702_230705.wav	EM3__0_20180702_230705_000	Noise	0	0	0.000000	
156	Data	EM3__20180702_230735.wav	EM3__0_20180702_230735_000	Noise	0	0	0.000000	
157	Data	EM3__20180702_230805.wav	EM3__0_20180702_230805_000	Noise	0	0	0.000000	
158	Data	EM3__20180702_230835.wav	EM3__0_20180702_230835_000	Noise	0	0	0.000000	
159	Data	EM3__20180702_230906.wav	EM3__0_20180702_230906_000	Noise	0	0	0.000000	
160	Data	EM3__20180702_230936.wav	EM3__0_20180702_230936_000	PIPY	36	33	0.384730	PIPY
161	Data	EM3__20180702_231006.wav	EM3__0_20180702_231006_000	PIPI	24	17	0.235351	PIPI
162	Data	EM3__20180702_231037.wav	EM3__0_20180702_231037_000	Noise	0	0	0.000000	Noise
163	Data	EM3__20180702_231107.wav	EM3__0_20180702_231107_000	Noise	0	0	0.000000	
164	Data	EM3__20180702_231137.wav	EM3__0_20180702_231137_000	Noise	0	0	0.000000	
165	Data	EM3__20180702_231208.wav	EM3__0_20180702_231208_000	Noise	0	0	0.000000	
166	Data	EM3__20180702_231238.wav	EM3__0_20180702_231238_000	Noise	0	0	0.000000	
167	Data	EM3__20180702_231308.wav	EM3__0_20180702_231308_000	Noise	0	0	0.000000	
168	Data	EM3__20180702_231338.wav	EM3__0_20180702_231338_000	Noise	0	0	0.000000	
169	Data	EM3__20180702_231409.wav	EM3__0_20180702_231409_000	Noise	0	0	0.000000	
170	Data	EM3__20180702_231439.wav	EM3__0_20180702_231439_000	Noise	0	0	0.000000	
171	Data	EM3__20180702_231509.wav	EM3__0_20180702_231509_000	Noise	0	0	0.000000	
172	Data	EM3__20180702_231540.wav	EM3__0_20180702_231540_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
172	Data	EM3__20180702_231540.wav	EM3__0_20180702_231540_000	Noise	0	0	0.000000	
173	Data	EM3__20180702_231610.wav	EM3__0_20180702_231610_000	Noise	0	0	0.000000	
174	Data	EM3__20180702_231640.wav	EM3__0_20180702_231640_000	Noise	0	0	0.000000	
175	Data	EM3__20180702_231711.wav	EM3__0_20180702_231711_000	PIPY	11	11	0.666137	PIPY
176	Data	EM3__20180702_231741.wav	EM3__0_20180702_231741_000	PIPY	16	15	0.417802	
177	Data	EM3__20180702_231811.wav	EM3__0_20180702_231811_000	Noise	0	0	0.000000	
178	Data	EM3__20180702_231841.wav	EM3__0_20180702_231841_000	Noise	0	0	0.000000	
179	Data	EM3__20180702_231912.wav	EM3__0_20180702_231912_000	PIPI	30	30	0.559417	PIPI
180	Data	EM3__20180702_231942.wav	EM3__0_20180702_231942_000	PIPI	37	37	0.429388	
181	Data	EM3__20180702_232012.wav	EM3__0_20180702_232012_000	Noise	0	0	0.000000	
182	Data	EM3__20180702_232043.wav	EM3__0_20180702_232043_000	Noise	0	0	0.000000	
183	Data	EM3__20180702_232113.wav	EM3__0_20180702_232113_000	Noise	0	0	0.000000	
184	Data	EM3__20180702_232143.wav	EM3__0_20180702_232143_000	Noise	0	0	0.000000	
185	Data	EM3__20180702_232213.wav	EM3__0_20180702_232213_000	Noise	0	0	0.000000	
186	Data	EM3__20180702_232244.wav	EM3__0_20180702_232244_000	Noise	0	0	0.000000	
187	Data	EM3__20180702_232314.wav	EM3__0_20180702_232314_000	Noise	0	0	0.000000	
188	Data	EM3__20180702_232344.wav	EM3__0_20180702_232344_000	Noise	0	0	0.000000	
189	Data	EM3__20180702_232415.wav	EM3__0_20180702_232415_000	Noise	0	0	0.000000	
190	Data	EM3__20180702_232445.wav	EM3__0_20180702_232445_000	PIPI	15	14	0.262585	PIPI
191	Data	EM3__20180702_232515.wav	EM3__0_20180702_232515_000	Noise	0	0	0.000000	
192	Data	EM3__20180702_232545.wav	EM3__0_20180702_232545_000	Noise	0	0	0.000000	
193	Data	EM3__20180702_232616.wav	EM3__0_20180702_232616_000	Noise	0	0	0.000000	
194	Data	EM3__20180702_232646.wav	EM3__0_20180702_232646_000	Noise	0	0	0.000000	
195	Data	EM3__20180702_232716.wav	EM3__0_20180702_232716_000	Noise	0	0	0.000000	
196	Data	EM3__20180702_232747.wav	EM3__0_20180702_232747_000	Noise	0	0	0.000000	
197	Data	EM3__20180702_232817.wav	EM3__0_20180702_232817_000	Noise	0	0	0.000000	
198	Data	EM3__20180702_232847.wav	EM3__0_20180702_232847_000	Noise	0	0	0.000000	
199	Data	EM3__20180702_232918.wav	EM3__0_20180702_232918_000	Noise	0	0	0.000000	
200	Data	EM3__20180702_232948.wav	EM3__0_20180702_232948_000	PIPY	14	10	0.192354	PIPY
201	Data	EM3__20180702_233018.wav	EM3__0_20180702_233018_000	Noise	0	0	0.000000	
202	Data	EM3__20180702_233048.wav	EM3__0_20180702_233048_000	Noise	0	0	0.000000	
203	Data	EM3__20180702_233119.wav	EM3__0_20180702_233119_000	Noise	0	0	0.000000	
204	Data	EM3__20180702_233149.wav	EM3__0_20180702_233149_000	Noise	0	0	0.000000	
205	Data	EM3__20180702_233219.wav	EM3__0_20180702_233219_000	Noise	0	0	0.000000	
206	Data	EM3__20180702_233249.wav	EM3__0_20180702_233249_000	PIPY	8	8	0.739043	PIPY
207	Data	EM3__20180702_233601.wav	EM3__0_20180702_233601_000	Noise	1	0	0.000000	
208	Data	EM3__20180702_233632.wav	EM3__0_20180702_233632_000	Noise	0	0	0.000000	
209	Data	EM3__20180703_033114.wav	EM3__0_20180703_033114_000	PIPI	6	4	0.145175	
210	Data	EM3__20180703_033144.wav	EM3__0_20180703_033144_000	Noise	0	0	0.000000	
211	Data	EM3__20180703_033214.wav	EM3__0_20180703_033214_000	Noise	0	0	0.000000	
212	Data	EM3__20180703_033244.wav	EM3__0_20180703_033244_000	Noise	0	0	0.000000	
213	Data	EM3__20180703_033315.wav	EM3__0_20180703_033315_000	Noise	0	0	0.000000	
214	Data	EM3__20180703_033345.wav	EM3__0_20180703_033345_000	PIPY	29	29	0.626356	PIPY

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
218	Data	EM3__20180703_033546.wav	EM3__0_20180703_033546_000	Noise	0	0	0.000000	
219	Data	EM3__20180703_033617.wav	EM3__0_20180703_033617_000	Noise	0	0	0.000000	
220	Data	EM3__20180703_033647.wav	EM3__0_20180703_033647_000	Noise	0	0	0.000000	
221	Data	EM3__20180703_033717.wav	EM3__0_20180703_033717_000	Noise	0	0	0.000000	
222	Data	EM3__20180703_033747.wav	EM3__0_20180703_033747_000	Noise	0	0	0.000000	
223	Data	EM3__20180703_033818.wav	EM3__0_20180703_033818_000	Noise	0	0	0.000000	
224	Data	EM3__20180703_033848.wav	EM3__0_20180703_033848_000	Noise	0	0	0.000000	
225	Data	EM3__20180703_033918.wav	EM3__0_20180703_033918_000	Noise	1	0	0.000000	
226	Data	EM3__20180703_033949.wav	EM3__0_20180703_033949_000	PIPY	18	18	0.543916	PIPY
227	Data	EM3__20180703_034019.wav	EM3__0_20180703_034019_000	PIPY	11	10	0.529574	PIPY
228	Data	EM3__20180703_034049.wav	EM3__0_20180703_034049_000	Noise	0	0	0.000000	
229	Data	EM3__20180703_034120.wav	EM3__0_20180703_034120_000	Noise	0	0	0.000000	
230	Data	EM3__20180703_034150.wav	EM3__0_20180703_034150_000	Noise	0	0	0.000000	
231	Data	EM3__20180703_034220.wav	EM3__0_20180703_034220_000	PIPI	38	27	0.137004	PIPI
232	Data	EM3__20180703_034251.wav	EM3__0_20180703_034251_000	Noise	0	0	0.000000	pipy
233	Data	EM3__20180703_034321.wav	EM3__0_20180703_034321_000	PIPY	27	27	0.600704	PIPY
234	Data	EM3__20180703_034351.wav	EM3__0_20180703_034351_000	PIPY	24	22	0.410162	PIPY
235	Data	EM3__20180703_034422.wav	EM3__0_20180703_034422_000	PIPI	3	3	0.441402	PIPI
236	Data	EM3__20180703_034452.wav	EM3__0_20180703_034452_000	PIPY	9	6	0.272100	PIPY
237	Data	EM3__20180703_034522.wav	EM3__0_20180703_034522_000	PIPY	66	30	0.107057	PIPY
238	Data	EM3__20180703_034553.wav	EM3__0_20180703_034553_000	NYLE	2	2	0.541711	NYLE
239	Data	EM3__20180703_034623.wav	EM3__0_20180703_034623_000	PIPY	26	26	0.739426	PIPY
240	Data	EM3__20180703_034653.wav	EM3__0_20180703_034653_000	PIPY	23	23	0.392527	PIPY
241	Data	EM3__20180703_034724.wav	EM3__0_20180703_034724_000	Noise	0	0	0.000000	
242	Data	EM3__20180703_034754.wav	EM3__0_20180703_034754_000	PIPI	29	20	0.154670	
243	Data	EM3__20180703_034824.wav	EM3__0_20180703_034824_000	PIPI	41	27	0.146730	
244	Data	EM3__20180703_034855.wav	EM3__0_20180703_034855_000	Noise	0	0	0.000000	
245	Data	EM3__20180703_034925.wav	EM3__0_20180703_034925_000	Noise	0	0	0.000000	
246	Data	EM3__20180703_034955.wav	EM3__0_20180703_034955_000	Noise	0	0	0.000000	
247	Data	EM3__20180703_035026.wav	EM3__0_20180703_035026_000	Noise	0	0	0.000000	
248	Data	EM3__20180703_035056.wav	EM3__0_20180703_035056_000	Noise	0	0	0.000000	
249	Data	EM3__20180703_035126.wav	EM3__0_20180703_035126_000	Noise	0	0	0.000000	
250	Data	EM3__20180703_035157.wav	EM3__0_20180703_035157_000	Noise	0	0	0.000000	
251	Data	EM3__20180703_035227.wav	EM3__0_20180703_035227_000	Noise	0	0	0.000000	
252	Data	EM3__20180703_035257.wav	EM3__0_20180703_035257_000	Noise	0	0	0.000000	
253	Data	EM3__20180703_035327.wav	EM3__0_20180703_035327_000	Noise	0	0	0.000000	
254	Data	EM3__20180703_035358.wav	EM3__0_20180703_035358_000	Noise	0	0	0.000000	
255	Data	EM3__20180703_035428.wav	EM3__0_20180703_035428_000	Noise	0	0	0.000000	
256	Data	EM3__20180703_035458.wav	EM3__0_20180703_035458_000	Noise	0	0	0.000000	
257	Data	EM3__20180703_035529.wav	EM3__0_20180703_035529_000	Noise	0	0	0.000000	
258	Data	EM3__20180703_035559.wav	EM3__0_20180703_035559_000	Noise	0	0	0.000000	
259	Data	EM3__20180703_035629.wav	EM3__0_20180703_035629_000	Noise	0	0	0.000000	
260	Data	EM3__20180703_035700.wav	EM3__0_20180703_035700_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
261	Data	EM3__20180703_035730.wav	EM3__0_20180703_035730_000	Noise	0	0	0.000000	
262	Data	EM3__20180703_035800.wav	EM3__0_20180703_035800_000	Noise	0	0	0.000000	
263	Data	EM3__20180703_035831.wav	EM3__0_20180703_035831_000	Noise	0	0	0.000000	
264	Data	EM3__20180703_035901.wav	EM3__0_20180703_035901_000	Noise	0	0	0.000000	
265	Data	EM3__20180703_035931.wav	EM3__0_20180703_035931_000	Noise	0	0	0.000000	
266	Data	EM3__20180703_040001.wav	EM3__0_20180703_040001_000	Noise	0	0	0.000000	
267	Data	EM3__20180703_040032.wav	EM3__0_20180703_040032_000	Noise	0	0	0.000000	
268	Data	EM3__20180703_040102.wav	EM3__0_20180703_040102_000	Noise	0	0	0.000000	
269	Data	EM3__20180703_040132.wav	EM3__0_20180703_040132_000	PIPY	12	10	0.339397	PIPY
270	Data	EM3__20180703_040203.wav	EM3__0_20180703_040203_000	Noise	0	0	0.000000	
271	Data	EM3__20180703_040233.wav	EM3__0_20180703_040233_000	Noise	0	0	0.000000	
272	Data	EM3__20180703_040303.wav	EM3__0_20180703_040303_000	Noise	0	0	0.000000	
273	Data	EM3__20180703_040334.wav	EM3__0_20180703_040334_000	Noise	0	0	0.000000	
274	Data	EM3__20180703_040404.wav	EM3__0_20180703_040404_000	Noise	0	0	0.000000	
275	Data	EM3__20180703_040434.wav	EM3__0_20180703_040434_000	Noise	0	0	0.000000	
276	Data	EM3__20180703_040505.wav	EM3__0_20180703_040505_000	Noise	0	0	0.000000	
277	Data	EM3__20180703_040535.wav	EM3__0_20180703_040535_000	Noise	0	0	0.000000	
278	Data	EM3__20180703_040605.wav	EM3__0_20180703_040605_000	Noise	0	0	0.000000	
279	Data	EM3__20180703_040635.wav	EM3__0_20180703_040635_000	Noise	0	0	0.000000	
280	Data	EM3__20180703_040706.wav	EM3__0_20180703_040706_000	Noise	0	0	0.000000	
281	Data	EM3__20180703_040736.wav	EM3__0_20180703_040736_000	Noise	1	0	0.000000	Noise
282	Data	EM3__20180703_040806.wav	EM3__0_20180703_040806_000	Noise	0	0	0.000000	
283	Data	EM3__20180703_040837.wav	EM3__0_20180703_040837_000	Noise	0	0	0.000000	
284	Data	EM3__20180703_040907.wav	EM3__0_20180703_040907_000	Noise	0	0	0.000000	
285	Data	EM3__20180703_040937.wav	EM3__0_20180703_040937_000	Noise	0	0	0.000000	
286	Data	EM3__20180703_041008.wav	EM3__0_20180703_041008_000	Noise	0	0	0.000000	
287	Data	EM3__20180703_041038.wav	EM3__0_20180703_041038_000	Noise	0	0	0.000000	
288	Data	EM3__20180703_041108.wav	EM3__0_20180703_041108_000	Noise	0	0	0.000000	
289	Data	EM3__20180703_041139.wav	EM3__0_20180703_041139_000	Noise	0	0	0.000000	
290	Data	EM3__20180703_041209.wav	EM3__0_20180703_041209_000	Noise	0	0	0.000000	
291	Data	EM3__20180703_041239.wav	EM3__0_20180703_041239_000	Noise	0	0	0.000000	
292	Data	EM3__20180703_041310.wav	EM3__0_20180703_041310_000	Noise	0	0	0.000000	
293	Data	EM3__20180703_041340.wav	EM3__0_20180703_041340_000	Noise	0	0	0.000000	
294	Data	EM3__20180703_041410.wav	EM3__0_20180703_041410_000	Noise	0	0	0.000000	
295	Data	EM3__20180703_041441.wav	EM3__0_20180703_041441_000	Noise	0	0	0.000000	
296	Data	EM3__20180703_041511.wav	EM3__0_20180703_041511_000	Noise	0	0	0.000000	
297	Data	EM3__20180703_041541.wav	EM3__0_20180703_041541_000	Noise	0	0	0.000000	
298	Data	EM3__20180703_041612.wav	EM3__0_20180703_041612_000	Noise	0	0	0.000000	
299	Data	EM3__20180703_041642.wav	EM3__0_20180703_041642_000	Noise	0	0	0.000000	
300	Data	EM3__20180703_041712.wav	EM3__0_20180703_041712_000	Noise	0	0	0.000000	
301	Data	EM3__20180703_041743.wav	EM3__0_20180703_041743_000	Noise	0	0	0.000000	
302	Data	EM3__20180703_041813.wav	EM3__0_20180703_041813_000	Noise	0	0	0.000000	
303	Data	EM3__20180703_041843.wav	EM3__0_20180703_041843_000	Noise	0	0	0.000000	
304	Data	EM3__20180703_041913.wav	EM3__0_20180703_041913_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
296	Data	EM3__20180703_041511.wav	EM3__0_20180703_041511_000	Noise	0	0	0.000000	
297	Data	EM3__20180703_041541.wav	EM3__0_20180703_041541_000	Noise	0	0	0.000000	
298	Data	EM3__20180703_041612.wav	EM3__0_20180703_041612_000	Noise	0	0	0.000000	
299	Data	EM3__20180703_041642.wav	EM3__0_20180703_041642_000	Noise	0	0	0.000000	
300	Data	EM3__20180703_041712.wav	EM3__0_20180703_041712_000	Noise	0	0	0.000000	
301	Data	EM3__20180703_041743.wav	EM3__0_20180703_041743_000	Noise	0	0	0.000000	
302	Data	EM3__20180703_041813.wav	EM3__0_20180703_041813_000	Noise	0	0	0.000000	
303	Data	EM3__20180703_041843.wav	EM3__0_20180703_041843_000	Noise	0	0	0.000000	
304	Data	EM3__20180703_041913.wav	EM3__0_20180703_041913_000	Noise	0	0	0.000000	
305	Data	EM3__20180703_041944.wav	EM3__0_20180703_041944_000	Noise	0	0	0.000000	
306	Data	EM3__20180703_042014.wav	EM3__0_20180703_042014_000	Noise	0	0	0.000000	
307	Data	EM3__20180703_042044.wav	EM3__0_20180703_042044_000	Noise	0	0	0.000000	
308	Data	EM3__20180703_042115.wav	EM3__0_20180703_042115_000	Noise	0	0	0.000000	
309	Data	EM3__20180703_042145.wav	EM3__0_20180703_042145_000	Noise	0	0	0.000000	
310	Data	EM3__20180703_042215.wav	EM3__0_20180703_042215_000	Noise	0	0	0.000000	
311	Data	EM3__20180703_042246.wav	EM3__0_20180703_042246_000	Noise	0	0	0.000000	
312	Data	EM3__20180703_042316.wav	EM3__0_20180703_042316_000	Noise	0	0	0.000000	
313	Data	EM3__20180703_042347.wav	EM3__0_20180703_042347_000	Noise	0	0	0.000000	
314	Data	EM3__20180703_042417.wav	EM3__0_20180703_042417_000	Noise	0	0	0.000000	
315	Data	EM3__20180703_042447.wav	EM3__0_20180703_042447_000	Noise	0	0	0.000000	
316	Data	EM3__20180703_042517.wav	EM3__0_20180703_042517_000	Noise	0	0	0.000000	
317	Data	EM3__20180703_042548.wav	EM3__0_20180703_042548_000	Noise	0	0	0.000000	
318	Data	EM3__20180703_042618.wav	EM3__0_20180703_042618_000	Noise	0	0	0.000000	
319	Data	EM3__20180703_042648.wav	EM3__0_20180703_042648_000	Noise	0	0	0.000000	
320	Data	EM3__20180703_042719.wav	EM3__0_20180703_042719_000	Noise	0	0	0.000000	
321	Data	EM3__20180703_042749.wav	EM3__0_20180703_042749_000	Noise	0	0	0.000000	
322	Data	EM3__20180703_042819.wav	EM3__0_20180703_042819_000	Noise	0	0	0.000000	
323	Data	EM3__20180703_042850.wav	EM3__0_20180703_042850_000	Noise	0	0	0.000000	
324	Data	EM3__20180703_042920.wav	EM3__0_20180703_042920_000	Noise	0	0	0.000000	
325	Data	EM3__20180703_042950.wav	EM3__0_20180703_042950_000	Noise	0	0	0.000000	
326	Data	EM3__20180703_043021.wav	EM3__0_20180703_043021_000	Noise	0	0	0.000000	
327	Data	EM3__20180703_043051.wav	EM3__0_20180703_043051_000	Noise	0	0	0.000000	
328	Data	EM3__20180703_043121.wav	EM3__0_20180703_043121_000	Noise	0	0	0.000000	
329	Data	EM3__20180703_043152.wav	EM3__0_20180703_043152_000	Noise	0	0	0.000000	
330	Data	EM3__20180703_043222.wav	EM3__0_20180703_043222_000	Noise	0	0	0.000000	
331	Data	EM3__20180703_043252.wav	EM3__0_20180703_043252_000	Noise	0	0	0.000000	
332	Data	EM3__20180703_043323.wav	EM3__0_20180703_043323_000	Noise	0	0	0.000000	
333	Data	EM3__20180703_043353.wav	EM3__0_20180703_043353_000	Noise	0	0	0.000000	
334	Data	EM3__20180703_043424.wav	EM3__0_20180703_043424_000	Noise	0	0	0.000000	
335	Data	EM3__20180703_043454.wav	EM3__0_20180703_043454_000	Noise	0	0	0.000000	
336	Data	EM3__20180703_043524.wav	EM3__0_20180703_043524_000	Noise	0	0	0.000000	
337	Data	EM3__20180703_043554.wav	EM3__0_20180703_043554_000	Noise	0	0	0.000000	
338	Data	EM3__20180703_043625.wav	EM3__0_20180703_043625_000	Noise	0	0	0.000000	

Appendix III Em3 sound analysis recordings. Handheld by Brian Keeley

Results

File Help

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
1		__20110101_204527.wav	_0_20110101_204527_000	Noise	0	0	0.000000	
2		__20110101_204548.wav	_0_20110101_204548_000	Noise	0	0	0.000000	
3		__20110101_204609.wav	_0_20110101_204609_000	Noise	0	0	0.000000	
4		__20110101_204629.wav	_0_20110101_204629_000	NoID	2	0	0.000000	
5		__20110101_204649.wav	_0_20110101_204649_000	Noise	0	0	0.000000	
6		__20110101_204709.wav	_0_20110101_204709_000	Noise	0	0	0.000000	
7		__20110101_204729.wav	_0_20110101_204729_000	Noise	1	0	0.000000	
8		__20110101_204750.wav	_0_20110101_204750_000	Noise	1	0	0.000000	
9		__20110101_204810.wav	_0_20110101_204810_000	Noise	0	0	0.000000	
10		__20110101_204830.wav	_0_20110101_204830_000	Noise	0	0	0.000000	
11		__20110101_204850.wav	_0_20110101_204850_000	Noise	0	0	0.000000	
12		__20180702_215111.wav	_0_20180702_215111_000	Noise	0	0	0.000000	
13		__20180702_215131.wav	_0_20180702_215131_000	Noise	0	0	0.000000	
14		__20180702_215152.wav	_0_20180702_215152_000	Noise	0	0	0.000000	
15		__20180702_215212.wav	_0_20180702_215212_000	Noise	0	0	0.000000	
16		__20180702_215232.wav	_0_20180702_215232_000	Noise	0	0	0.000000	
17		__20180702_215252.wav	_0_20180702_215252_000	Noise	0	0	0.000000	
18		__20180702_215313.wav	_0_20180702_215313_000	Noise	0	0	0.000000	
19		__20180702_215333.wav	_0_20180702_215333_000	NoID	2	0	0.000000	
20		__20180702_215353.wav	_0_20180702_215353_000	Noise	0	0	0.000000	
21		__20180702_215414.wav	_0_20180702_215414_000	Noise	0	0	0.000000	
22		__20180702_215434.wav	_0_20180702_215434_000	Noise	0	0	0.000000	
23		__20180702_215454.wav	_0_20180702_215454_000	Noise	0	0	0.000000	
24		__20180702_215514.wav	_0_20180702_215514_000	Noise	0	0	0.000000	
25		__20180702_215535.wav	_0_20180702_215535_000	Noise	0	0	0.000000	
26		__20180702_215555.wav	_0_20180702_215555_000	Noise	0	0	0.000000	
27		__20180702_215615.wav	_0_20180702_215615_000	Noise	0	0	0.000000	
28		__20180702_215635.wav	_0_20180702_215635_000	Noise	0	0	0.000000	
29		__20180702_215656.wav	_0_20180702_215656_000	Noise	0	0	0.000000	
30		__20180702_215716.wav	_0_20180702_215716_000	Noise	0	0	0.000000	
31		__20180702_215736.wav	_0_20180702_215736_000	MYBE	2	2	0.304568	Noise
32		__20180702_215757.wav	_0_20180702_215757_000	Noise	0	0	0.000000	
33		__20180702_215817.wav	_0_20180702_215817_000	Noise	0	0	0.000000	
34		__20180702_215837.wav	_0_20180702_215837_000	Noise	0	0	0.000000	
35		__20180702_215858.wav	_0_20180702_215858_000	Noise	0	0	0.000000	
36		__20180702_215918.wav	_0_20180702_215918_000	Noise	0	0	0.000000	
37		__20180702_215938.wav	_0_20180702_215938_000	Noise	0	0	0.000000	
38		__20180702_215958.wav	_0_20180702_215958_000	Noise	0	0	0.000000	
39		__20180702_220019.wav	_0_20180702_220019_000	Noise	0	0	0.000000	
40		__20180702_220039.wav	_0_20180702_220039_000	Noise	0	0	0.000000	
41		__20180702_220059.wav	_0_20180702_220059_000	Noise	0	0	0.000000	
42		__20180702_220120.wav	_0_20180702_220120_000	Noise	0	0	0.000000	
43		__20180702_220140.wav	_0_20180702_220140_000	Noise	0	0	0.000000	
44		20180702_220200.wav	0_20180702_220200_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
44		__20180702_220200.wav	__0_20180702_220200_000	Noise	0	0	0.000000	
45		__20180702_220221.wav	__0_20180702_220221_000	Noise	0	0	0.000000	
46		__20180702_220241.wav	__0_20180702_220241_000	Noise	0	0	0.000000	
47		__20180702_220301.wav	__0_20180702_220301_000	Noise	0	0	0.000000	
48		__20180702_220321.wav	__0_20180702_220321_000	Noise	0	0	0.000000	
49		__20180702_220342.wav	__0_20180702_220342_000	Noise	1	0	0.000000	
50		__20180702_220402.wav	__0_20180702_220402_000	Noise	0	0	0.000000	
51		__20180702_220422.wav	__0_20180702_220422_000	Noise	0	0	0.000000	
52		__20180702_220443.wav	__0_20180702_220443_000	Noise	0	0	0.000000	
53		__20180702_220503.wav	__0_20180702_220503_000	Noise	0	0	0.000000	
54		__20180702_220523.wav	__0_20180702_220523_000	Noise	1	0	0.000000	
55		__20180702_220543.wav	__0_20180702_220543_000	Noise	0	0	0.000000	
56		__20180702_220604.wav	__0_20180702_220604_000	Noise	0	0	0.000000	
57		__20180702_220624.wav	__0_20180702_220624_000	Noise	0	0	0.000000	
58		__20180702_220644.wav	__0_20180702_220644_000	Noise	0	0	0.000000	
59		__20180702_220705.wav	__0_20180702_220705_000	NoID	2	0	0.000000	
60		__20180702_220725.wav	__0_20180702_220725_000	NoID	2	0	0.000000	
61		__20180702_220745.wav	__0_20180702_220745_000	Noise	0	0	0.000000	
62		__20180702_220805.wav	__0_20180702_220805_000	Noise	0	0	0.000000	
63		__20180702_220826.wav	__0_20180702_220826_000	Noise	0	0	0.000000	
64		__20180702_220846.wav	__0_20180702_220846_000	Noise	0	0	0.000000	
65		__20180702_220906.wav	__0_20180702_220906_000	Noise	1	0	0.000000	
66		__20180702_220927.wav	__0_20180702_220927_000	Noise	0	0	0.000000	
67		__20180702_220947.wav	__0_20180702_220947_000	Noise	0	0	0.000000	
68		__20180702_221007.wav	__0_20180702_221007_000	Noise	0	0	0.000000	
69		__20180702_221028.wav	__0_20180702_221028_000	Noise	0	0	0.000000	
70		__20180702_221048.wav	__0_20180702_221048_000	Noise	0	0	0.000000	
71		__20180702_221108.wav	__0_20180702_221108_000	Noise	0	0	0.000000	
72		__20180702_221128.wav	__0_20180702_221128_000	Noise	0	0	0.000000	
73		__20180702_221149.wav	__0_20180702_221149_000	Noise	0	0	0.000000	
74		__20180702_221209.wav	__0_20180702_221209_000	Noise	0	0	0.000000	
75		__20180702_221229.wav	__0_20180702_221229_000	Noise	0	0	0.000000	
76		__20180702_221250.wav	__0_20180702_221250_000	Noise	0	0	0.000000	
77		__20180702_221310.wav	__0_20180702_221310_000	Noise	0	0	0.000000	
78		__20180702_221330.wav	__0_20180702_221330_000	Noise	0	0	0.000000	
79		__20180702_221351.wav	__0_20180702_221351_000	Noise	0	0	0.000000	
80		__20180702_221411.wav	__0_20180702_221411_000	Noise	0	0	0.000000	
81		__20180702_221431.wav	__0_20180702_221431_000	Noise	0	0	0.000000	
82		__20180702_221451.wav	__0_20180702_221451_000	Noise	0	0	0.000000	
83		__20180702_221512.wav	__0_20180702_221512_000	Noise	0	0	0.000000	
84		__20180702_221532.wav	__0_20180702_221532_000	Noise	0	0	0.000000	
85		__20180702_221552.wav	__0_20180702_221552_000	Noise	0	0	0.000000	
86		__20180702_221613.wav	__0_20180702_221613_000	Noise	0	0	0.000000	
87		__20180702_221633.wav	__0_20180702_221633_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
87		_20180702_221633.wav	_0_20180702_221633_000	Noise	0	0	0.000000	
88		_20180702_221653.wav	_0_20180702_221653_000	Noise	0	0	0.000000	
89		_20180702_221714.wav	_0_20180702_221714_000	Noise	0	0	0.000000	
90		_20180702_221734.wav	_0_20180702_221734_000	Noise	0	0	0.000000	
91		_20180702_221754.wav	_0_20180702_221754_000	Noise	0	0	0.000000	
92		_20180702_221815.wav	_0_20180702_221815_000	Noise	0	0	0.000000	
93		_20180702_221835.wav	_0_20180702_221835_000	Noise	0	0	0.000000	
94		_20180702_221855.wav	_0_20180702_221855_000	Noise	0	0	0.000000	
95		_20180702_221915.wav	_0_20180702_221915_000	Noise	0	0	0.000000	
96		_20180702_221936.wav	_0_20180702_221936_000	Noise	0	0	0.000000	
97		_20180702_221956.wav	_0_20180702_221956_000	Noise	0	0	0.000000	
98		_20180702_222016.wav	_0_20180702_222016_000	Noise	0	0	0.000000	
99		_20180702_222037.wav	_0_20180702_222037_000	Noise	0	0	0.000000	
100		_20180702_222057.wav	_0_20180702_222057_000	Noise	0	0	0.000000	
101		_20180702_222117.wav	_0_20180702_222117_000	Noise	0	0	0.000000	
102		_20180702_222138.wav	_0_20180702_222138_000	Noise	0	0	0.000000	
103		_20180702_222158.wav	_0_20180702_222158_000	Noise	0	0	0.000000	
104		_20180702_222218.wav	_0_20180702_222218_000	Noise	0	0	0.000000	
105		_20180702_222239.wav	_0_20180702_222239_000	Noise	0	0	0.000000	
106		_20180702_222259.wav	_0_20180702_222259_000	Noise	0	0	0.000000	
107		_20180702_222319.wav	_0_20180702_222319_000	Noise	0	0	0.000000	
108		_20180702_222339.wav	_0_20180702_222339_000	Noise	0	0	0.000000	
109		_20180702_222400.wav	_0_20180702_222400_000	Noise	0	0	0.000000	
110		_20180702_222420.wav	_0_20180702_222420_000	Noise	0	0	0.000000	
111		_20180702_222440.wav	_0_20180702_222440_000	Noise	0	0	0.000000	
112		_20180702_222501.wav	_0_20180702_222501_000	Noise	0	0	0.000000	
113		_20180702_222521.wav	_0_20180702_222521_000	Noise	0	0	0.000000	
114		_20180702_222541.wav	_0_20180702_222541_000	Noise	0	0	0.000000	
115		_20180702_222602.wav	_0_20180702_222602_000	Noise	0	0	0.000000	
116		_20180702_222622.wav	_0_20180702_222622_000	Noise	0	0	0.000000	
117		_20180702_222642.wav	_0_20180702_222642_000	Noise	0	0	0.000000	
118		_20180702_222703.wav	_0_20180702_222703_000	Noise	0	0	0.000000	
119		_20180702_222723.wav	_0_20180702_222723_000	Noise	0	0	0.000000	
120		_20180702_222743.wav	_0_20180702_222743_000	Noise	0	0	0.000000	
121		_20180702_222803.wav	_0_20180702_222803_000	Noise	0	0	0.000000	
122		_20180702_222824.wav	_0_20180702_222824_000	Noise	0	0	0.000000	
123		_20180702_222844.wav	_0_20180702_222844_000	Noise	0	0	0.000000	
124		_20180702_222904.wav	_0_20180702_222904_000	Noise	0	0	0.000000	
125		_20180702_222925.wav	_0_20180702_222925_000	Noise	0	0	0.000000	
126		_20180702_222945.wav	_0_20180702_222945_000	Noise	0	0	0.000000	
127		_20180702_223005.wav	_0_20180702_223005_000	Noise	0	0	0.000000	
128		_20180702_223026.wav	_0_20180702_223026_000	Noise	0	0	0.000000	
129		_20180702_223046.wav	_0_20180702_223046_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
128		__20180702_223026.wav	__0_20180702_223026_000	Noise	0	0	0.000000	
129		__20180702_223046.wav	__0_20180702_223046_000	Noise	0	0	0.000000	
130		__20180702_223106.wav	__0_20180702_223106_000	Noise	0	0	0.000000	
131		__20180702_223127.wav	__0_20180702_223127_000	Noise	0	0	0.000000	
132		__20180702_223147.wav	__0_20180702_223147_000	Noise	0	0	0.000000	
133		__20180702_223207.wav	__0_20180702_223207_000	Noise	0	0	0.000000	
134		__20180702_223228.wav	__0_20180702_223228_000	Noise	0	0	0.000000	
135		__20180702_223248.wav	__0_20180702_223248_000	Noise	0	0	0.000000	
136		__20180702_223308.wav	__0_20180702_223308_000	Noise	0	0	0.000000	
137		__20180702_223329.wav	__0_20180702_223329_000	Noise	0	0	0.000000	
138		__20180702_223349.wav	__0_20180702_223349_000	Noise	0	0	0.000000	
139		__20180702_223409.wav	__0_20180702_223409_000	Noise	0	0	0.000000	
140		__20180702_223429.wav	__0_20180702_223429_000	Noise	0	0	0.000000	
141		__20180702_223450.wav	__0_20180702_223450_000	Noise	0	0	0.000000	
142		__20180702_223510.wav	__0_20180702_223510_000	Noise	0	0	0.000000	
143		__20180702_223530.wav	__0_20180702_223530_000	Noise	0	0	0.000000	
144		__20180702_223550.wav	__0_20180702_223550_000	Noise	0	0	0.000000	
145		__20180702_223611.wav	__0_20180702_223611_000	Noise	0	0	0.000000	
146		__20180702_223631.wav	__0_20180702_223631_000	Noise	0	0	0.000000	
147		__20180702_223651.wav	__0_20180702_223651_000	MYBE	3	2	0.164777	cpip
148		__20180702_223712.wav	__0_20180702_223712_000	Noise	0	0	0.000000	
149		__20180702_223732.wav	__0_20180702_223732_000	Noise	0	0	0.000000	
150		__20180702_223753.wav	__0_20180702_223753_000	Noise	0	0	0.000000	
151		__20180702_223813.wav	__0_20180702_223813_000	Noise	0	0	0.000000	
152		__20180702_223833.wav	__0_20180702_223833_000	PIPI	10	6	0.194451	
153		__20180702_223853.wav	__0_20180702_223853_000	PIPI	55	29	0.155234	
154		__20180702_223914.wav	__0_20180702_223914_000	Noise	0	0	0.000000	
155		__20180702_223934.wav	__0_20180702_223934_000	PIPI	8	6	0.316433	
156		__20180702_223954.wav	__0_20180702_223954_000	Noise	0	0	0.000000	
157		__20180702_224015.wav	__0_20180702_224015_000	Noise	0	0	0.000000	
158		__20180702_224035.wav	__0_20180702_224035_000	Noise	0	0	0.000000	
159		__20180702_224055.wav	__0_20180702_224055_000	Noise	0	0	0.000000	
160		__20180702_224116.wav	__0_20180702_224116_000	Noise	0	0	0.000000	
161		__20180702_224136.wav	__0_20180702_224136_000	Noise	0	0	0.000000	
162		__20180702_224156.wav	__0_20180702_224156_000	Noise	0	0	0.000000	
163		__20180702_224217.wav	__0_20180702_224217_000	Noise	0	0	0.000000	
164		__20180702_224237.wav	__0_20180702_224237_000	Noise	0	0	0.000000	
165		__20180702_224257.wav	__0_20180702_224257_000	Noise	0	0	0.000000	
166		__20180702_224318.wav	__0_20180702_224318_000	Noise	0	0	0.000000	
167		__20180702_224338.wav	__0_20180702_224338_000	Noise	0	0	0.000000	
168		__20180702_224358.wav	__0_20180702_224358_000	Noise	0	0	0.000000	
169		__20180702_224419.wav	__0_20180702_224419_000	Noise	0	0	0.000000	
170		__20180702_224439.wav	__0_20180702_224439_000	Noise	0	0	0.000000	
171		__20180702_224459.wav	__0_20180702_224459_000	PIPI	9	7	0.202992	PIPI

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
172		_20180702_224520.wav	_0_20180702_224520_000	PIPI	60	35	0.112917	PIPI
173		_20180702_224540.wav	_0_20180702_224540_000	PIPI	26	18	0.179458	PIPI
174		_20180702_224600.wav	_0_20180702_224600_000	PIPI	66	35	0.109889	PIPI
175		_20180702_224621.wav	_0_20180702_224621_000	PIPI	108	58	0.197736	PIPI
176		_20180702_224641.wav	_0_20180702_224641_000	Noise	0	0	0.000000	
177		_20180702_224701.wav	_0_20180702_224701_000	PIPI	10	6	0.176014	PIPI
178		_20180702_224722.wav	_0_20180702_224722_000	Noise	1	0	0.000000	Noise
179		_20180702_224742.wav	_0_20180702_224742_000	Noise	0	0	0.000000	Noise
180		_20180702_224802.wav	_0_20180702_224802_000	EPSE	3	2	0.140957	Noise
181		_20180702_224823.wav	_0_20180702_224823_000	PIPI	14	6	0.148342	PIPI
182		_20180702_224843.wav	_0_20180702_224843_000	PIPI	31	18	0.240626	PIPI
183		_20180702_224903.wav	_0_20180702_224903_000	Noise	0	0	0.000000	Noise
184		_20180702_224924.wav	_0_20180702_224924_000	PIPI	17	15	0.403916	PIPI
185		_20180702_224944.wav	_0_20180702_224944_000	NYLE	2	2	0.193859	Noise
186		_20180702_225004.wav	_0_20180702_225004_000	NYLE	8	5	0.082491	Noise
187		_20180702_225025.wav	_0_20180702_225025_000	NYLE	2	2	0.195803	NYLE
188		_20180702_225045.wav	_0_20180702_225045_000	Noise	1	0	0.000000	
189		_20180702_225105.wav	_0_20180702_225105_000	Noise	0	0	0.000000	
190		_20180702_225126.wav	_0_20180702_225126_000	Noise	0	0	0.000000	
191		_20180702_225146.wav	_0_20180702_225146_000	Noise	0	0	0.000000	
192		_20180702_225206.wav	_0_20180702_225206_000	Noise	0	0	0.000000	
193		_20180702_225226.wav	_0_20180702_225226_000	Noise	0	0	0.000000	
194		_20180702_225247.wav	_0_20180702_225247_000	PIPI	24	11	0.149781	
195		_20180702_225307.wav	_0_20180702_225307_000	PIPI	7	7	0.662528	
196		_20180702_225328.wav	_0_20180702_225328_000	PIPI	14	8	0.143516	
197		_20180702_225348.wav	_0_20180702_225348_000	Noise	0	0	0.000000	
198		_20180702_225408.wav	_0_20180702_225408_000	Noise	0	0	0.000000	
199		_20180702_225429.wav	_0_20180702_225429_000	Noise	0	0	0.000000	
200		_20180702_225449.wav	_0_20180702_225449_000	PIPI	9	7	0.383330	
201		_20180702_225509.wav	_0_20180702_225509_000	PIPY	35	23	0.182025	
202		_20180702_225530.wav	_0_20180702_225530_000	Noise	0	0	0.000000	
203		_20180702_225550.wav	_0_20180702_225550_000	Noise	0	0	0.000000	
204		_20180702_225610.wav	_0_20180702_225610_000	Noise	0	0	0.000000	
205		_20180702_225631.wav	_0_20180702_225631_000	Noise	0	0	0.000000	
206		_20180702_225651.wav	_0_20180702_225651_000	Noise	0	0	0.000000	
207		_20180702_225711.wav	_0_20180702_225711_000	Noise	0	0	0.000000	
208		_20180702_225732.wav	_0_20180702_225732_000	Noise	0	0	0.000000	
209		_20180702_225752.wav	_0_20180702_225752_000	Noise	0	0	0.000000	
210		_20180702_225812.wav	_0_20180702_225812_000	Noise	1	0	0.000000	
211		_20180702_225833.wav	_0_20180702_225833_000	Noise	0	0	0.000000	
212		_20180702_225853.wav	_0_20180702_225853_000	Noise	0	0	0.000000	
213		_20180702_225913.wav	_0_20180702_225913_000	PIPY	7	4	0.175136	
214		_20180702_225934.wav	_0_20180702_225934_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
215		__20180702_225954.wav	__0_20180702_225954_000	Noise	0	0	0.000000	
216		__20180702_230014.wav	__0_20180702_230014_000	Noise	0	0	0.000000	
217		__20180702_230035.wav	__0_20180702_230035_000	Noise	0	0	0.000000	
218		__20180702_230055.wav	__0_20180702_230055_000	Noise	0	0	0.000000	
219		__20180702_230115.wav	__0_20180702_230115_000	Noise	1	0	0.000000	
220		__20180702_230136.wav	__0_20180702_230136_000	Noise	0	0	0.000000	
221		__20180702_230156.wav	__0_20180702_230156_000	PINA	4	4	0.368785	
222		__20180702_230216.wav	__0_20180702_230216_000	Noise	1	0	0.000000	
223		__20180702_230237.wav	__0_20180702_230237_000	Noise	0	0	0.000000	
224		__20180702_230257.wav	__0_20180702_230257_000	Noise	1	0	0.000000	
225		__20180702_230317.wav	__0_20180702_230317_000	Noise	1	0	0.000000	
226		__20180702_230338.wav	__0_20180702_230338_000	PINA	4	4	0.332789	
227		__20180702_230358.wav	__0_20180702_230358_000	MYBE	8	4	0.079124	
228		__20180702_230418.wav	__0_20180702_230418_000	PINA	4	3	0.125407	
229		__20180702_230439.wav	__0_20180702_230439_000	NoID	3	0	0.000000	
230		__20180702_230459.wav	__0_20180702_230459_000	Noise	0	0	0.000000	
231		__20180702_230519.wav	__0_20180702_230519_000	Noise	0	0	0.000000	
232		__20180702_230539.wav	__0_20180702_230539_000	PIPI	18	17	0.318679	
233		__20180702_230600.wav	__0_20180702_230600_000	Noise	0	0	0.000000	
234		__20180702_230620.wav	__0_20180702_230620_000	Noise	0	0	0.000000	
235		__20180702_230641.wav	__0_20180702_230641_000	Noise	0	0	0.000000	
236		__20180702_230701.wav	__0_20180702_230701_000	Noise	1	0	0.000000	
237		__20180702_230721.wav	__0_20180702_230721_000	Noise	0	0	0.000000	
238		__20180702_230741.wav	__0_20180702_230741_000	Noise	0	0	0.000000	
239		__20180702_230802.wav	__0_20180702_230802_000	Noise	0	0	0.000000	
240		__20180702_230822.wav	__0_20180702_230822_000	Noise	1	0	0.000000	
241		__20180702_230843.wav	__0_20180702_230843_000	Noise	0	0	0.000000	
242		__20180702_230903.wav	__0_20180702_230903_000	PIPY	13	13	0.518731	
243		__20180702_230923.wav	__0_20180702_230923_000	Noise	0	0	0.000000	
244		__20180702_230944.wav	__0_20180702_230944_000	Noise	0	0	0.000000	
245		__20180702_231004.wav	__0_20180702_231004_000	PIPI	23	11	0.141668	
246		__20180702_231024.wav	__0_20180702_231024_000	Noise	0	0	0.000000	
247		__20180702_231045.wav	__0_20180702_231045_000	Noise	0	0	0.000000	
248		__20180702_231105.wav	__0_20180702_231105_000	PIPY	48	46	0.377129	
249		__20180702_231125.wav	__0_20180702_231125_000	Noise	0	0	0.000000	
250		__20180702_231146.wav	__0_20180702_231146_000	Noise	0	0	0.000000	
251		__20180702_231206.wav	__0_20180702_231206_000	Noise	0	0	0.000000	
252		__20180702_231226.wav	__0_20180702_231226_000	Noise	0	0	0.000000	
253		__20180702_231247.wav	__0_20180702_231247_000	PIPI	38	29	0.192819	
254		__20180702_231307.wav	__0_20180702_231307_000	Noise	0	0	0.000000	
255		__20180702_231327.wav	__0_20180702_231327_000	Noise	0	0	0.000000	
256		__20180702_231348.wav	__0_20180702_231348_000	Noise	0	0	0.000000	
257		__20180702_231408.wav	__0_20180702_231408_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
257		_20180702_231408.wav	_0_20180702_231408_000	Noise	0	0	0.000000	
258		_20180702_231428.wav	_0_20180702_231428_000	Noise	0	0	0.000000	
259		_20180702_231449.wav	_0_20180702_231449_000	Noise	0	0	0.000000	
260		_20180702_231509.wav	_0_20180702_231509_000	PIPY	20	17	0.394376	
261		_20180702_231529.wav	_0_20180702_231529_000	PIPI	21	13	0.133724	
262		_20180702_231550.wav	_0_20180702_231550_000	Noise	0	0	0.000000	
263		_20180702_231610.wav	_0_20180702_231610_000	PIPI	35	34	0.356374	PIPI
264		_20180702_231630.wav	_0_20180702_231630_000	PIPI	7	5	0.118466	PIPI
265		_20180702_231651.wav	_0_20180702_231651_000	PIPI	2	2	0.304766	PIPI
266		_20180702_231711.wav	_0_20180702_231711_000	PIPY	31	31	0.286890	PIPY
267		_20180702_231731.wav	_0_20180702_231731_000	PIPI	10	10	0.479737	PIPI
268		_20180702_231752.wav	_0_20180702_231752_000	PINA	29	11	0.113955	cpip
269		_20180702_231812.wav	_0_20180702_231812_000	NYLE	15	5	0.028263	NYLE
270		_20180702_231832.wav	_0_20180702_231832_000	PIPY	2	2	0.718793	PIPY
271		_20180702_231853.wav	_0_20180702_231853_000	PIPY	83	80	0.515340	PIPY
272		_20180702_231913.wav	_0_20180702_231913_000	PIPY	13	12	0.590159	PIPY
273		_20180702_231933.wav	_0_20180702_231933_000	NYLE	5	5	0.248618	NYLE
274		_20180702_231954.wav	_0_20180702_231954_000	Noise	0	0	0.000000	Noise
275		_20180702_232014.wav	_0_20180702_232014_000	Noise	0	0	0.000000	
276		_20180702_232035.wav	_0_20180702_232035_000	Noise	0	0	0.000000	
277		_20180702_232055.wav	_0_20180702_232055_000	Noise	0	0	0.000000	
278		_20180702_232116.wav	_0_20180702_232116_000	PIPI	9	9	0.409484	
279		_20180702_232136.wav	_0_20180702_232136_000	PIPI	6	6	0.329708	
280		_20180702_232157.wav	_0_20180702_232157_000	Noise	0	0	0.000000	
281		_20180702_232217.wav	_0_20180702_232217_000	Noise	0	0	0.000000	
282		_20180702_232237.wav	_0_20180702_232237_000	Noise	0	0	0.000000	
283		_20180702_232258.wav	_0_20180702_232258_000	Noise	0	0	0.000000	
284		_20180702_232318.wav	_0_20180702_232318_000	Noise	0	0	0.000000	
285		_20180702_232338.wav	_0_20180702_232338_000	Noise	0	0	0.000000	
286		_20180702_232359.wav	_0_20180702_232359_000	PIPY	20	19	0.324974	
287		_20180702_232419.wav	_0_20180702_232419_000	PIPY	33	29	0.290799	
288		_20180702_232439.wav	_0_20180702_232439_000	Noise	0	0	0.000000	
289		_20180702_232500.wav	_0_20180702_232500_000	Noise	0	0	0.000000	
290		_20180702_232520.wav	_0_20180702_232520_000	Noise	0	0	0.000000	
291		_20180702_232540.wav	_0_20180702_232540_000	Noise	0	0	0.000000	
292		_20180702_232601.wav	_0_20180702_232601_000	Noise	0	0	0.000000	
293		_20180702_232621.wav	_0_20180702_232621_000	Noise	0	0	0.000000	
294		_20180702_232641.wav	_0_20180702_232641_000	PIPI	39	31	0.198468	
295		_20180702_232702.wav	_0_20180702_232702_000	Noise	0	0	0.000000	
296		_20180702_232722.wav	_0_20180702_232722_000	Noise	0	0	0.000000	
297		_20180702_232742.wav	_0_20180702_232742_000	Noise	0	0	0.000000	
298		_20180702_232803.wav	_0_20180702_232803_000	PIPI	4	3	0.225684	PIPI
299		_20180702_232823.wav	_0_20180702_232823_000	Noise	0	0	0.000000	Noise

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
298		_20180702_232803.wav	_0_20180702_232803_000	PIPI	4	3	0.225684	PIPI
299		_20180702_232823.wav	_0_20180702_232823_000	Noise	0	0	0.000000	Noise
300		_20180702_232844.wav	_0_20180702_232844_000	PIPI	91	54	0.123890	PIPI
301		_20180702_232904.wav	_0_20180702_232904_000	PINA	32	18	0.058655	spip
302		_20180702_232924.wav	_0_20180702_232924_000	PINA	18	14	0.277469	cpip
303		_20180702_232945.wav	_0_20180702_232945_000	PIPI	10	10	0.525916	PIPI
304		_20180702_233005.wav	_0_20180702_233005_000	Noise	0	0	0.000000	Noise
305		_20180702_233025.wav	_0_20180702_233025_000	Noise	0	0	0.000000	Noise
306		_20180702_233046.wav	_0_20180702_233046_000	Noise	0	0	0.000000	Noise
307		_20180702_233106.wav	_0_20180702_233106_000	Noise	0	0	0.000000	
308		_20180702_233126.wav	_0_20180702_233126_000	Noise	1	0	0.000000	
309		_20180702_233147.wav	_0_20180702_233147_000	Noise	0	0	0.000000	
310		_20180702_233207.wav	_0_20180702_233207_000	Noise	0	0	0.000000	
311		_20180702_233228.wav	_0_20180702_233228_000	NoID	2	0	0.000000	
312		_20180702_233248.wav	_0_20180702_233248_000	Noise	1	0	0.000000	
313		_20180702_233308.wav	_0_20180702_233308_000	Noise	0	0	0.000000	
314		_20180702_233328.wav	_0_20180702_233328_000	Noise	1	0	0.000000	
315		_20180702_233349.wav	_0_20180702_233349_000	NYLE	4	3	0.170781	NYLE
316		_20180702_233409.wav	_0_20180702_233409_000	NYLE	2	2	0.194428	Noise
317		_20180702_233430.wav	_0_20180702_233430_000	NYLE	3	3	0.194368	Noise
318		_20180702_233450.wav	_0_20180702_233450_000	PIPI	4	2	0.063123	Noise
319		_20180702_233510.wav	_0_20180702_233510_000	Noise	0	0	0.000000	Noise
320		_20180702_233531.wav	_0_20180702_233531_000	PIPI	18	16	0.473293	PIPI
321		_20180702_233551.wav	_0_20180702_233551_000	PIPI	34	30	0.365456	PIPI
322		_20180702_233612.wav	_0_20180702_233612_000	Noise	0	0	0.000000	Noise
323		_20180702_233632.wav	_0_20180702_233632_000	NoID	2	0	0.000000	Noise
324		_20180702_233652.wav	_0_20180702_233652_000	NYLE	3	3	0.194579	Noise
325		_20180702_233713.wav	_0_20180702_233713_000	PIPI	53	32	0.198986	Noise
326		_20180702_233733.wav	_0_20180702_233733_000	PIPI	57	34	0.131988	PIPI
327		_20180702_233753.wav	_0_20180702_233753_000	Noise	1	0	0.000000	Noise
328		_20180702_233814.wav	_0_20180702_233814_000	NYLE	4	2	0.093728	Noise
329		_20180702_233834.wav	_0_20180702_233834_000	NYLE	3	3	0.275477	Noise
330		_20180702_233854.wav	_0_20180702_233854_000	NYLE	3	3	0.194477	Noise
331		_20180702_233915.wav	_0_20180702_233915_000	PIPI	14	9	0.103455	Noise
332		_20180702_233935.wav	_0_20180702_233935_000	PIPY	29	24	0.260293	Noise
333		_20180702_233955.wav	_0_20180702_233955_000	Noise	0	0	0.000000	
334		_20180702_234016.wav	_0_20180702_234016_000	Noise	0	0	0.000000	
335		_20180702_234036.wav	_0_20180702_234036_000	NoID	2	0	0.000000	
336		_20180702_234056.wav	_0_20180702_234056_000	Noise	0	0	0.000000	
337		_20180702_234117.wav	_0_20180702_234117_000	PIPY	44	43	0.359211	
338		_20180702_234137.wav	_0_20180702_234137_000	PIPI	33	27	0.260628	
339		_20180702_234157.wav	_0_20180702_234157_000	Noise	0	0	0.000000	
340		_20180702_234218.wav	_0_20180702_234218_000	Noise	0	0	0.000000	
341		_20180702_234238.wav	_0_20180702_234238_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
341		_20180702_234238.wav	_0_20180702_234238_000	Noise	0	0	0.000000	
342		_20180702_234259.wav	_0_20180702_234259_000	Noise	0	0	0.000000	
343		_20180702_234319.wav	_0_20180702_234319_000	PIPI	27	17	0.261709	PIPI
344		_20180702_234340.wav	_0_20180702_234340_000	PIPY	9	6	0.334955	PIPY
345		_20180702_234400.wav	_0_20180702_234400_000	PIPY	12	12	0.714137	PIPY
346		_20180702_234420.wav	_0_20180702_234420_000	Noise	0	0	0.000000	
347		_20180702_234441.wav	_0_20180702_234441_000	Noise	0	0	0.000000	
348		_20180702_234501.wav	_0_20180702_234501_000	Noise	0	0	0.000000	
349		_20180702_234521.wav	_0_20180702_234521_000	Noise	0	0	0.000000	
350		_20180702_234542.wav	_0_20180702_234542_000	Noise	0	0	0.000000	
351		_20180702_234602.wav	_0_20180702_234602_000	PIPY	7	6	0.494493	PIPY
352		_20180702_234622.wav	_0_20180702_234622_000	Noise	0	0	0.000000	Noise
353		_20180702_234643.wav	_0_20180702_234643_000	Noise	1	0	0.000000	Noise
354		_20180702_234703.wav	_0_20180702_234703_000	Noise	0	0	0.000000	Noise
355		_20180703_034006.wav	_0_20180703_034006_000	Noise	0	0	0.000000	Noise
356		_20180703_034026.wav	_0_20180703_034026_000	PIPI	13	12	0.536876	PIPI
357		_20180703_034046.wav	_0_20180703_034046_000	Noise	0	0	0.000000	Noise
358		_20180703_034106.wav	_0_20180703_034106_000	Noise	0	0	0.000000	Noise
359		_20180703_034128.wav	_0_20180703_034128_000	PIPI	32	27	0.376371	PIPI
360		_20180703_034148.wav	_0_20180703_034148_000	PIPI	5	5	0.406391	PIPI
361		_20180703_034209.wav	_0_20180703_034209_000	Noise	0	0	0.000000	Noise
362		_20180703_034229.wav	_0_20180703_034229_000	Noise	0	0	0.000000	
363		_20180703_034249.wav	_0_20180703_034249_000	Noise	0	0	0.000000	
364		_20180703_034310.wav	_0_20180703_034310_000	Noise	0	0	0.000000	
365		_20180703_034330.wav	_0_20180703_034330_000	Noise	0	0	0.000000	
366		_20180703_034350.wav	_0_20180703_034350_000	Noise	0	0	0.000000	
367		_20180703_034411.wav	_0_20180703_034411_000	Noise	0	0	0.000000	
368		_20180703_034431.wav	_0_20180703_034431_000	Noise	0	0	0.000000	
369		_20180703_034451.wav	_0_20180703_034451_000	Noise	0	0	0.000000	
370		_20180703_034512.wav	_0_20180703_034512_000	Noise	0	0	0.000000	
371		_20180703_034532.wav	_0_20180703_034532_000	Noise	0	0	0.000000	
372		_20180703_034552.wav	_0_20180703_034552_000	Noise	0	0	0.000000	
373		_20180703_034613.wav	_0_20180703_034613_000	Noise	0	0	0.000000	
374		_20180703_034633.wav	_0_20180703_034633_000	Noise	0	0	0.000000	
375		_20180703_034653.wav	_0_20180703_034653_000	Noise	0	0	0.000000	
376		_20180703_034714.wav	_0_20180703_034714_000	Noise	0	0	0.000000	
377		_20180703_034734.wav	_0_20180703_034734_000	Noise	0	0	0.000000	
378		_20180703_034754.wav	_0_20180703_034754_000	Noise	0	0	0.000000	
379		_20180703_034815.wav	_0_20180703_034815_000	Noise	0	0	0.000000	
380		_20180703_034835.wav	_0_20180703_034835_000	Noise	0	0	0.000000	
381		_20180703_034855.wav	_0_20180703_034855_000	Noise	0	0	0.000000	
382		_20180703_034916.wav	_0_20180703_034916_000	Noise	0	0	0.000000	
383		_20180703_034936.wav	_0_20180703_034936_000	Noise	0	0	0.000000	
384		_20180703_034956.wav	_0_20180703_034956_000	Noise	0	0	0.000000	

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
384		_20180703_035017.wav	_0_20180703_035017_000	Noise	0	0	0.000000	
385		_20180703_035017.wav	_0_20180703_035017_000	Noise	0	0	0.000000	
386		_20180703_035037.wav	_0_20180703_035037_000	Noise	0	0	0.000000	
387		_20180703_035057.wav	_0_20180703_035057_000	Noise	0	0	0.000000	
388		_20180703_035118.wav	_0_20180703_035118_000	PIPY	20	18	0.287446	PIPY
389		_20180703_035138.wav	_0_20180703_035138_000	Noise	0	0	0.000000	Noise
390		_20180703_035159.wav	_0_20180703_035159_000	PIPI	14	11	0.354177	PIPI
391		_20180703_035219.wav	_0_20180703_035219_000	PIPY	36	25	0.180153	PIPY
392		_20180703_035239.wav	_0_20180703_035239_000	Noise	0	0	0.000000	Noise
393		_20180703_035259.wav	_0_20180703_035259_000	MYBR	7	2	0.053425	cpip
394		_20180703_035320.wav	_0_20180703_035320_000	Noise	0	0	0.000000	Noise
395		_20180703_035340.wav	_0_20180703_035340_000	Noise	0	0	0.000000	Noise
396		_20180703_035400.wav	_0_20180703_035400_000	Noise	0	0	0.000000	Noise
397		_20180703_035421.wav	_0_20180703_035421_000	PIPY	21	20	0.319476	PIPY
398		_20180703_035441.wav	_0_20180703_035441_000	PIPI	39	23	0.224559	PIPI
399		_20180703_035502.wav	_0_20180703_035502_000	PIPY	47	34	0.180252	PIPY
400		_20180703_035522.wav	_0_20180703_035522_000	Noise	0	0	0.000000	Noise
401		_20180703_035542.wav	_0_20180703_035542_000	PIPI	31	15	0.173511	PIPI
402		_20180703_035603.wav	_0_20180703_035603_000	PIPI	6	5	0.314293	PIPI
403		_20180703_035623.wav	_0_20180703_035623_000	Noise	0	0	0.000000	Noise
404		_20180703_035643.wav	_0_20180703_035643_000	Noise	0	0	0.000000	
405		_20180703_035704.wav	_0_20180703_035704_000	PIPI	13	6	0.146441	
406		_20180703_035724.wav	_0_20180703_035724_000	PIPI	18	16	0.306240	
407		_20180703_035744.wav	_0_20180703_035744_000	Noise	0	0	0.000000	
408		_20180703_035805.wav	_0_20180703_035805_000	Noise	0	0	0.000000	
409		_20180703_035825.wav	_0_20180703_035825_000	Noise	0	0	0.000000	
410		_20180703_035845.wav	_0_20180703_035845_000	Noise	0	0	0.000000	
411		_20180703_035905.wav	_0_20180703_035905_000	Noise	0	0	0.000000	
412		_20180703_035926.wav	_0_20180703_035926_000	Noise	0	0	0.000000	
413		_20180703_035946.wav	_0_20180703_035946_000	Noise	0	0	0.000000	
414		_20180703_040006.wav	_0_20180703_040006_000	Noise	0	0	0.000000	
415		_20180703_040027.wav	_0_20180703_040027_000	Noise	0	0	0.000000	
416		_20180703_040047.wav	_0_20180703_040047_000	PIPY	22	21	0.290790	PIPY
417		_20180703_040107.wav	_0_20180703_040107_000	Noise	0	0	0.000000	Noise
418		_20180703_040128.wav	_0_20180703_040128_000	PIPI	24	24	0.537502	PIPI
419		_20180703_040148.wav	_0_20180703_040148_000	Noise	0	0	0.000000	Noise
420		_20180703_040208.wav	_0_20180703_040208_000	Noise	0	0	0.000000	Noise
421		_20180703_040229.wav	_0_20180703_040229_000	Noise	0	0	0.000000	
422		_20180703_040249.wav	_0_20180703_040249_000	Noise	0	0	0.000000	
423		_20180703_040309.wav	_0_20180703_040309_000	Noise	0	0	0.000000	
424		_20180703_040330.wav	_0_20180703_040330_000	PIPI	59	44	0.298489	PIPI
425		_20180703_040350.wav	_0_20180703_040350_000	Noise	0	0	0.000000	Noise
426		_20180703_040410.wav	_0_20180703_040410_000	PIPI	52	52	0.337471	PIPI
427		_20180703_040430.wav	_0_20180703_040430_000	PIPI	104	59	0.182844	PIPI

	FOLDER	IN FILE	OUT FILE	AUTO ID	PULSES	MATCHING	MARGIN	MANUAL ID
427		__20180703_040430.wav	__0_20180703_040430_000	PIPI	104	59	0.182844	PIPI
428		__20180703_040451.wav	__0_20180703_040451_000	PIPI	72	48	0.253793	PIPI
429		__20180703_040511.wav	__0_20180703_040511_000	PIPI	10	10	0.520413	PIPI
430		__20180703_040531.wav	__0_20180703_040531_000	PIPI	38	38	0.368294	PIPI
431		__20180703_040552.wav	__0_20180703_040552_000	PIPI	31	19	0.188084	PIPI
432		__20180703_040612.wav	__0_20180703_040612_000	Noise	0	0	0.000000	Noise
433		__20180703_040632.wav	__0_20180703_040632_000	Noise	0	0	0.000000	Noise
434		__20180703_040724.wav	__0_20180703_040724_000	Noise	0	0	0.000000	Noise
435		__20180703_040850.wav	__0_20180703_040850_000	PIPI	86	79	0.382685	PIPI
436		__20180703_040931.wav	__0_20180703_040931_000	Noise	0	0	0.000000	Noise
437		__20180703_040951.wav	__0_20180703_040951_000	Noise	0	0	0.000000	Noise
438		__20180703_041012.wav	__0_20180703_041012_000	Noise	0	0	0.000000	Noise
439		__20180703_041032.wav	__0_20180703_041032_000	Noise	0	0	0.000000	
440		__20180703_041052.wav	__0_20180703_041052_000	Noise	0	0	0.000000	
441		__20180703_041113.wav	__0_20180703_041113_000	Noise	0	0	0.000000	
442		__20180703_041133.wav	__0_20180703_041133_000	Noise	0	0	0.000000	
443		__20180703_041154.wav	__0_20180703_041154_000	Noise	0	0	0.000000	
444		__20180703_041214.wav	__0_20180703_041214_000	Noise	0	0	0.000000	
445		__20180703_041234.wav	__0_20180703_041234_000	Noise	0	0	0.000000	
446		__20180703_041255.wav	__0_20180703_041255_000	Noise	0	0	0.000000	
447		__20180703_041315.wav	__0_20180703_041315_000	Noise	0	0	0.000000	
448		__20180703_041335.wav	__0_20180703_041335_000	Noise	0	0	0.000000	
449		__20180703_041356.wav	__0_20180703_041356_000	Noise	0	0	0.000000	
450		__20180703_041415.wav	__0_20180703_041415_000	Noise	0	0	0.000000	
451		__20180703_041436.wav	__0_20180703_041436_000	Noise	0	0	0.000000	
452		__20180703_041457.wav	__0_20180703_041457_000	Noise	0	0	0.000000	
453		__20180703_041517.wav	__0_20180703_041517_000	Noise	0	0	0.000000	
454		__20180703_041537.wav	__0_20180703_041537_000	Noise	0	0	0.000000	
455		__20180703_041558.wav	__0_20180703_041558_000	Noise	0	0	0.000000	
456		__20180703_041618.wav	__0_20180703_041618_000	Noise	0	0	0.000000	
457		__20180703_041638.wav	__0_20180703_041638_000	Noise	0	0	0.000000	
458		__20180703_041659.wav	__0_20180703_041659_000	Noise	0	0	0.000000	
459		__20180703_041719.wav	__0_20180703_041719_000	Noise	0	0	0.000000	
460		__20180703_041739.wav	__0_20180703_041739_000	Noise	0	0	0.000000	
461		__20180703_041759.wav	__0_20180703_041759_000	Noise	0	0	0.000000	
462		__20180703_041820.wav	__0_20180703_041820_000	Noise	0	0	0.000000	
463		__20180703_041840.wav	__0_20180703_041840_000	Noise	0	0	0.000000	
464		__20180703_041900.wav	__0_20180703_041900_000	Noise	0	0	0.000000	
465		__20180703_041921.wav	__0_20180703_041921_000	Noise	0	0	0.000000	
466		__20180703_041941.wav	__0_20180703_041941_000	Noise	0	0	0.000000	
467		__20180703_042002.wav	__0_20180703_042002_000	Noise	0	0	0.000000	
468		__20180703_042022.wav	__0_20180703_042022_000	Noise	0	0	0.000000	
469		__20180703_042042.wav	__0_20180703_042042_000	Noise	0	0	0.000000	

Appendix IV Peersonic recordings from the derelict house at the crossroads

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	M
1	FOLDER	IN FILE	CHANNEL	OFFSET	DURATION	OUT FILE	DATE	TIME	HOUR	DATE-12	TIME-12	HOUR-12	AUTO ID	PULSES	
2		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	23:37:00	0	-44	12:00:00	12	PIPI	14	
3		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	01:32:00	0	-44	12:00:00	12	NoID	1	
4		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	02:44:00	0	-44	12:00:00	12	PIPI	2	
5		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:28:00	0	-44	12:00:00	12	PIPI	4	
6		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:44:00	0	-44	12:00:00	12	PIPI	10	
7		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:45:00	0	-44	12:00:00	12	MYBR	4	
8		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:46:00	0	-44	12:00:00	12	NoID	1	
9		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:48:00	0	-44	12:00:00	12	PIPI	5	
10		QUA_AA	0	0	5.461	QUA_AA	0000-01-0	03:48:00	0	-44	12:00:00	12	PIPI	4	
11		QUA_AB	0	0	5.461	QUA_AB	0000-01-0	03:49:00	0	-44	12:00:00	12	PIPI	5	
12		QUA_AB	0	0	5.461	QUA_AB	0000-01-0	03:51:00	0	-44	12:00:00	12	PIPY	5	
13		QUA_AB	0	0	5.461	QUA_AB	0000-01-0	04:04:00	0	-44	12:00:00	12	PIPY	5	
14															
15															

Appendix V Legislation

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 Bern Convention

Article 6 of the “Convention on the Conservation of European Wildlife and Natural Habitats’ (Bern 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 pipistrellus*”.

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.

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