








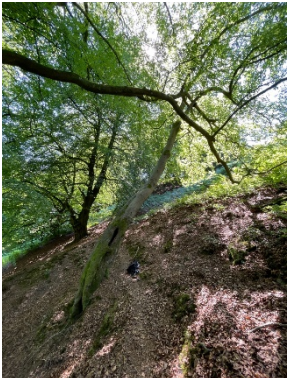

Appendix 6.3 Survey Tables and Bat Data Analysis Methods






Table 1. Details of static bat detector deployments

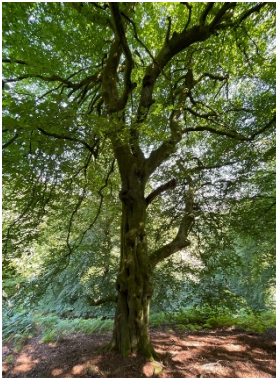





Period	Location	Deployment date	Collection date	Number of nights deployed	Number of nights of data recorded
Spring	D1	11/05/2021	21/05/2021	10	10
	D2	11/05/2021	21/05/2021	10	10
	D3	11/05/2021	21/05/2021	10	10
	D4	11/05/2021	21/05/2021	10	10
	D5	11/05/2021	21/05/2021	10	10
	D6	11/05/2021	21/05/2021	10	10
	D7	11/05/2021	21/05/2021	10	10
	D8	11/05/2021	21/05/2021	10	10
	D9	11/05/2021	21/05/2021	10	10
	D10	11/05/2021	21/05/2021	10	10
Summer	D1	21/07/2021	31/07/2021	10	10
	D2	21/07/2021	31/07/2021	10	10
	D3	21/07/2021	31/07/2021	10	10
	D4	21/07/2021	31/07/2021	10	10
	D5	21/07/2021	31/07/2021	10	10
	D6	21/07/2021	31/07/2021	10	10
	D7	21/07/2021	31/07/2021	10	10
	D8	21/07/2021	31/07/2021	10	10
	D9	21/07/2021	31/07/2021	10	10
	D10	21/07/2021	31/07/2021	10	10
Autumn	D1	15/09/2021	25/09/2021	10	10
	D2	15/09/2021	25/09/2021	10	10
	D3	15/09/2021	25/09/2021	10	10
	D4	15/09/2021	25/09/2021	10	10
	D5	15/09/2021	25/09/2021	10	10
	D6	15/09/2021	25/09/2021	10	10
	D7	15/09/2021	25/09/2021	10	10
	D8	15/09/2021	25/09/2021	10	10
	D9	15/09/2021	25/09/2021	10	10
	D10	15/09/2021	25/09/2021	10	10







Table 2. Tree Survey Results





ID	Tree Description	Tree Photo	PRF Type	PRF Description	PRF Dimensions	Suitability	PRF Photo
10	Goat willow Alive 90cm DBH. 8 m high.		Wound 1 m high on Stem. N aspect.	Wound at base of double leader. Decay creating a cavity in stem.	External dimensions = 100 (h) x 30 (w). Internal dimensions = 90 (h) x 7 (w). Internal conditions = Clean, Blackened, Bumpy substrate and Dry	Moderate	
			Tear out 2 m high on Limb. SW aspect.	Tear out on limb following bank. Moderate cavity May support small colony of bats.	External dimensions = 10 (h) x 15 (w). Internal dimensions = 10 (h) x 10 (w). Internal conditions = Clean, smooth substrate and Dry	Moderate	






<p>17</p>	<p>Beech Alive 80cm 0.5 m high. DBH.</p>		<p>Lightning strike 0.5 m high on Stem. NE aspect.</p>	<p>Cavity formed between ground and lightning strike on fallen tree. Low suitability given location on ground. More likely to be used by small mammals.</p>	<p>External dimensions = 50 (h) x 30 (w). Internal dimensions = 600 (h) x 20 (w). Internal conditions = Clean, Rough substrate and Dry</p>	<p>Low</p>	
<p>18</p>	<p>Beech Alive 100cm 20 m high. DBH.</p>		<p>Tear out 6 m high on Stem. N aspect.</p>	<p>Recent shallow tear out with some decay at apex. Inspected from ground level</p>	<p>External dimensions = 20 (h) x 15 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Dirty, Sludgy substrate and Damp</p>	<p>Low</p>	
<p>19</p>	<p>Beech Alive 50cm 12 m high. DBH.</p>		<p>Tear out 1 m high on Stem. W aspect.</p>	<p>Low tear out leading to hollow stem.</p>	<p>External dimensions = 40 (h) x 15 (w). Internal dimensions = 100 (h) x 30 (w). Internal conditions = Clean substrate and Dry</p>	<p>Moderate</p>	



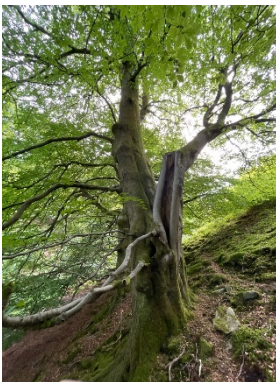



20	<p>Beech Alive 90cm 24 m high.</p> <p>DBH.</p>		<p>Butt rot 0.5 m high on Stem. SW aspect.</p>	<p>Low entrance - 0.5m</p>	<p>External dimensions = 40 (h) x 20 (w). Internal dimensions = 50 (h) x 20 (w). Internal conditions = Rough, Debris substrate and Dry</p>	Low	
21	<p>Beech Alive 120cm 20 m high.</p> <p>DBH.</p>		<p>Flute 2 m high on Stem. N aspect.</p>	<p>Flute with small cavity at rear</p>	<p>External dimensions = 15 (h) x 15 (w). Internal dimensions = 5 (h) x 2 (w).</p>	Low	
			<p>Tear out 2.5 m high on Limb. NE aspect.</p>	<p>Tear out on underside of limb.</p>	<p>External dimensions = 3 (h) x 3 (w). Internal dimensions = 5 (h) x 2 (w). Internal conditions = Rough substrate and Dry</p>	Low	







26	<p>Beech Alive 90cm 18 m high.</p> <p>DBH.</p>		<p>Tear out 3 m high on Limb. E aspect.</p>	<p>On underside of limb. Small pocket at apex. Visible from ground</p>	<p>External dimensions = 30 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Clean, blackened substrate and Dry</p>	<p>Low</p>	
28	<p>Beech Alive 50cm 12 m high.</p> <p>DBH.</p>		<p>Tear out 4 m high on Limb. NE aspect.</p>	<p>Tear out with shallow cavity at apex. Visible from ground level</p>	<p>External dimensions = 15 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Blackened, Rough substrate and Dry</p>	<p>Low</p>	
31	<p>Beech Alive 40cm 12 m high.</p> <p>DBH.</p>		<p>Tear out 12 m high on Limb. NW aspect.</p>	<p>High tear out on limb. Cavity apparent</p>	<p>External dimensions = 20 (h) x 10 (w).</p>	<p>Moderate</p>	







<p>32</p>	<p>Beech Alive 60cm 20 m high. DBH.</p>		<p>Knot hole 4 m high on Stem. E aspect.</p>	<p>Shallow, but may shelter single bat.</p>	<p>External dimensions = 4 (h) x 4 (w). Internal dimensions = 4 (h) x 4 (w). Internal conditions = Clean, Rough substrate and Dry</p>	<p>Low</p>	
<p>33</p>	<p>Beech Alive 70cm 18 m high. DBH.</p>		<p>Tear out 5 m high on Limb. N aspect.</p>	<p>Tear out on top of limb. Apex visible from ground</p>	<p>External dimensions = 15 (h) x 3 (w). Internal dimensions = 2 (h) x 2 (w). Internal conditions = Rough, Debris substrate and Damp</p>	<p>Low</p>	
<p>35</p>	<p>Beech Alive 100cm 18 m high. DBH.</p>		<p>Tear out 3 m high on Stem. SW aspect.</p>	<p>0</p>	<p>External dimensions = 20 (h) x 10 (w). Internal dimensions = 3 (h) x 5 (w). Internal conditions = Clean, Smooth, Debris substrate and Dry</p>	<p>Low</p>	





				<p>Tear out 10 m high on Limb. S aspect.</p>	<p>Deep apex cavity, internal height not visible from ground. Internal inspection on 20/04/23 : limb failed. Feature now 3m in height.</p>	<p>External dimensions = 30 (h) x 15 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Clean, Blackened substrate and Dry</p>	Moderate	
36	Beech Alive 90cm DBH. 22 m high.		<p>Canker 5 m high on Limb. NE aspect.</p>	<p>Wound/ canker on limb leading to cavity. Hollow section of stem. Squirrel present on 20/04/23</p>	<p>External dimensions = 10 (h) x 10 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Clean, Bumpy, Debris substrate and Dry</p>	Moderate		
			<p>Tear out 8 m high on Limb. NE aspect.</p>	<p>Tear out with heartwood decay lading to cavity</p>	<p>External dimensions = 20 (h) x 7 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Rough, Debris substrate and Damp</p>	Moderate		





37	<p>Beech Alive 80cm 20 m high.</p> <p>DBH.</p>		<p>Tear out 2 m high on Limb. NW aspect.</p>	<p>Large tear out leading to hollowed cavity tube terminating at upward facing knot hole. Lower tear out is dome extending to 50 cm.</p>	<p>External dimensions = 40 (h) x 20 (w). Internal dimensions = 100 (h) x 15 (w). Internal conditions = Dirty, Debris substrate and Damp</p>	<p>Moderate</p>	
38	<p>Beech Alive 200cm 20 m high.</p> <p>DBH.</p>		<p>Tear out 1 m high on Limb. N aspect.</p>	<p>Small tear out with squirrel damage leading to large hollow cavity in fallen limb.</p>	<p>External dimensions = 15 (h) x 3 (w). Internal dimensions = 110 (h) x 7 (w). Internal conditions = Dirty, Dusty substrate and Dry</p>	<p>Moderate</p>	
			<p>Stress fracture 2 m high on Stem. S aspect.</p>	<p>Seam 2 m in height terminating with small pocket at apex.</p>	<p>External dimensions = 15 (h) x 1 (w). Internal dimensions = 5 (h) x 2 (w). Internal conditions = Clean, Rough, Dusty substrate and Dry</p>	<p>Low</p>	






39	<p>Beech Alive 90cm 22 m high.</p> <p>DBH.</p>		<p>Tear out 2 m high on Stem. W aspect.</p>	<p>Large extending cavity upward into stem</p>	<p>External dimensions = 30 (h) x 20 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Dirty, Debris substrate and Dry</p>	Moderate	
40	<p>Beech Alive 100cm 18 m high.</p> <p>DBH.</p>		<p>Tear out 4 m high on Limb. NW aspect.</p>	<p>Large tear out with wide cavity at apex</p>	<p>External dimensions = 30 (h) x 20 (w). Internal dimensions = 30 (h) x 7 (w). Internal conditions = Blackened, Rough, Debris substrate and Damp</p>	Moderate	
42	<p>Beech Alive 100cm 18 m high.</p> <p>DBH.</p>		<p>Canker 3 m high on Stem. SW aspect.</p>	<p>Canker leading to bowl cavity.</p>	<p>External dimensions = 15 (h) x 20 (w). Internal dimensions = 0 (h) x 15 (w). Internal conditions = Clean, Rough substrate and Dry</p>	Low	

<p>43</p>	<p>Beech Alive 90cm 20 m high.</p> <p>DBH.</p>		<p>Tear out 4 m high on Stem. W aspect.</p>	<p>Large tear out with large cavity at apex</p>	<p>External dimensions = 30 (h) x 20 (w). Internal dimensions = 50 (h) x 10 (w). Internal conditions = Dirty, Debris substrate and Dry</p>	<p>Moderate</p>	
<p>44</p>	<p>Beech Alive 80cm 18 m high.</p> <p>DBH.</p>		<p>Stress fracture 2 m high on Limb. S aspect.</p>	<p>Large split at base of failed limb creating narrow cavities</p>	<p>External dimensions = 15 (h) x 2 (w). Internal dimensions = 2 (h) x 2 (w). Internal conditions = Rough, Dusty substrate and Dry</p>	<p>Low</p>	
<p>45</p>	<p>Beech Alive 50cm 16 m high.</p> <p>DBH.</p>		<p>Tear out 2.5 m high on Stem. S aspect.</p>	<p>Low tear out. Small pocket at apex</p>	<p>External dimensions = 20 (h) x 5 (w). Internal dimensions = 5 (h) x 5 (w). Internal conditions = Rough, Debris substrate and Dry</p>	<p>Low</p>	

<p>46</p>	<p>Beech Alive 60cm 12 m high.</p> <p>DBH.</p>			<p>Tear out 3 m high on Stem. S aspect.</p>	<p>Tear out with wide cavity at apex</p>	<p>External dimensions = 30 (h) x 15 (w). Internal dimensions = 20 (h) x 10 (w). Internal conditions = Rough, Dusty, Debris substrate and Damp</p>	<p>Moderate</p>	
<p>47</p>	<p>Beech Alive 100cm 18 m high.</p> <p>DBH.</p>			<p>Tear out 2.5 m high on Limb. S aspect.</p>	<p>Old tear out that has decayed most of the lower limb. Shallow cavity at apex.</p>	<p>External dimensions = 7 (h) x 10 (w). Internal dimensions = 10 (h) x 7 (w). Internal conditions = Rough, Debris substrate and Damp</p>	<p>Low</p>	
<p>50</p>	<p>Beech Alive 1500cm 6 m high.</p> <p>DBH.</p>			<p>Decay 1 m high on Stem. SE aspect.</p>	<p>Rot holes leading to large internal cavities.</p>	<p>External dimensions = 20 (h) x 20 (w). Internal dimensions = 50 (h) x 30 (w). Internal conditions = Clean, Rough substrate and Dry</p>	<p>Moderate</p>	

			Decay 2.5 m high on Stem. SE aspect.	Rot hole. Little owl present.	External dimensions = 20 (h) x 15 (w). Internal dimensions = 50 (d) x 30 (w). Internal conditions = Clean, Rough substrate and Dry	Moderate	
51	Beech Alive 1500cm DBH. 18 m high.		Tear out 4.5 m high on Limb. NW aspect.	Old tear out with significant decay leading to large sheltered cavity	External dimensions = 100 (h) x 30 (w). Internal dimensions = 90 (h) x 20 (w). Internal conditions = Clean, Smooth substrate and Dry	Moderate	
			Tear out 6 m high on Stem. S aspect.	Tear out / knot hole with Tawny owl chick + egg when inspected on 21/04/23	External dimensions = 20 (h) x 10 (w). Internal dimensions = 150 (h) x 20 (w). Internal conditions = Dirty, Debris, Sludgy substrate and Damp	Moderate	

			<p>Tear out 6 m high on Stem. S aspect.</p>	<p>Small tear out at base of limb. Bird nest (great tit) present</p>	<p>External dimensions = 16 (h) x 5 (w). Internal dimensions = 12 (h) x 27 (w). Internal conditions = Clean, Blackened, Smooth substrate and Damp</p>	Moderate	
			<p>Tear out 4 m high on Limb. E aspect.</p>	<p>Tear out on underside of limb. Cavities at top and bottom of feature.</p>	<p>External dimensions = 30 (h) x 7 (w). Internal dimensions = 25 (h) x 4 (w). Internal conditions = Blackened, Rough substrate and Damp</p>	Moderate	
52	<p>Beech Alive 120cm DBH. 12 m high.</p>		<p>Tear out 3 m high on Limb. W aspect.</p>	<p>Large tear out on limb with large cavity leading away from stem</p>	<p>External dimensions = 40 (h) x 15 (w). Internal dimensions = 30 (h) x 10 (w). Internal conditions = Debris substrate and Dry</p>	Moderate	

53	Beech Alive 80cm 16 m high. DBH.		Tear out 8 m high on Stem. E aspect.	Large tear out with narrow cavity at apex	External dimensions = 15 (h) x 5 (w). Internal dimensions = 10 (h) x 2 (w).	Low	
			Tear out 12 m high on Limb. NE aspect.	Tear out under limb with cavity at base leading toward stem	External dimensions = 6 (h) x 4 (w). Internal dimensions = 0 (h) x 2.5 (w).	Moderate	
54	Beech Alive 100cm 16 m high. DBH.		Tear out 10 m high on Limb. E aspect.	Tear out high in canopy	External dimensions = 30 (h) x 20 (w). Internal dimensions = 10 (h) x 15 (w). Internal conditions = Dirty, Sludgy substrate and Wet	Moderate	


				Tear out 10 m high on Limb. E aspect.	Tear out with internal decay	External dimensions = 15 (h) x 15 (w). Internal dimensions = 10 (h) x 5 (w). Internal conditions = Blackened, Rough substrate and Damp	Moderate	
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Table 3. Great crested newt habitat suitability index results

Pond No.	Pond Area (m ²)	Pond permanence	Water Quality	Pond Shading (%)	No. of waterfowl	Occurrence of fish	Ponds within 1km	Terrestrial Habitat within 500m	Macrophyte content (est % total)	HSI score	HSI Category	Notes
1	700	Sometimes dries	Moderate	10	Absent	Absent	5	Moderate	5	0.7029	Good	On farmers land. Lined and fed / drained by pipe to / from Pond 2.
2	650	Dries annually	Poor (assessed during earlier visits)	0	Minor	Absent	5	Good	10	0.565	Below average	Dry at the time of survey.
3	700	Dries annually	Poor	0	Minor	Absent	6	Good	30	0.5951	Below average	Shallow at the time of survey.
4	270	Dries annually	Assumed moderate for assessment	85	Absent	Absent	4	Good	90	0.5992	Average	Dry at the time of survey.
5	180	Sometimes dries	Moderate	0	Minor	Absent	4	Good	30	0.6652	Average	Nearly dry at time of survey (less than 5cm depth in central puddle).
6	190	Sometimes dries	Poor	0	Minor	Absent	5	Good	10	0.6056	Average	Shallow at the time of survey
7	25	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6	Good	95	0.5102	Below Average	Dry at the time of survey.
8	20	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6	Good	95	0.5102	Below Average	Dry at the time of survey.

9	50	Dries annually	Assumed moderate for assessment	0	Absent	Absent	6 (incl. Blaen Bran res.)	Good	80	0.5558	Below Average	Dry at the time of survey.
10	100	Sometimes dries	Poor	0	Minor	Absent	6 (incl. Blaen Bran res.)	Good	20	0.5844	Below Average	Shallow at the time of survey.
11	150	Sometimes dries	Moderate	0	Minor	Absent	1	Good	20	0.6137	Average	Shallow at the time of survey.
12	600	Sometimes dries	Moderate	0	Minor	Absent	3	Good	70	0.7697	Good	Juncus recently dredged from edges.
13	88	Dries annually	Poor	10	Absent	Absent	6	Poor	5	0.42	Poor	Dry at the time of survey.
14	109	Sometimes dries	Poor	25	Minor	Absent	6	Poor	5	0.51	Below average	Dry at the time of survey.
15	336	Never	Moderate	40	Minor	Absent	5	Moderate	20	0.71	Good	Known history of GCN.

Table 4. Great crested newt survey results 2021

Pond and date of survey	Bottle Trap				Torchlight				Egg Search	Vegetation (/5)	Turbidity (/5)	Comments
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc			
Pond 1												
08-09/04/2021										0	3	
10-11/05/2021										0	3	
17-18/05/2021		2♀ 4♂	4♀ 27♂		2♂			97 inc 3 efts		0	4	
19-20/05/2021		1♀ 2♂	12♀ 9♂		1♂	3♂			Yes	0	4	
26-27/05/2021	3♀, 1 Juv.	1♀ 5♂	3♀ 10♂		2♀ 5♂			347, 26 efts		0	4	
02-03/06/2021	1♂	3♀ 10♂	1♀ 5♂		2♂			101, 23 efts		0	3	
Pond 2												
08-09/04/2021								1		2	4	1 toad and tadpoles

10-11/05/2021										2	4	tadpoles
17-18/05/2021		2♀ 1♂			2♀ (terrestrial) 4♂ (aquatic)			16		2	2	female GCNs were found on land
19-20/05/2021		3♀ 1♂	2♀ 3♂		4♀ 1♂			22		2	3	
26-27/05/2021	1♀ 1♂	2♀ 4♂	18♀ 6♂		2♀ 6♂	1♂	4♂	103	Yes	2	2	
02-03/06/2021	1♀	4♀ 3♂	4♀ 4♂		1♀ 1♂			41		2	4	
Pond 3												
08-09/04/2021							1♀	1	No	1	4	1 toad
10-11/05/2021									No	1	4	
17-18/05/2021								4	No	2	3	
19-20/05/2021			1♀			1♂	2♂	78	No	3	3	
26-27/05/2021					1 Juv. (terrestrial)	2♀ 2♂	2♂	10	No	3	3	
02-03/06/2021					1 Juv. (terrestrial)			19	No	3	2	
Pond 15												
26-27/04/2022	1♂		1		3♀ 14♂	2	2	1	No	1	1	
28-29/04/2022	1♀ 4♂		2		5♀ 31♂			30+	Yes	1	1	
05-06/05/2022	1♂	3	6		3♀ 31♂	3	10	17	Yes	2	1	
11-12/05/2022	3♀ 4♂	5	10		5♀ 8♂	1	6	19	Yes	2	2	
26-27/05/2022			3		2♀ 4♂	1		13	Yes	2	2	
06-07/06/2021	2♂				1♂			29	Yes	2	1	

Table 5. Great crested newt survey results 2022 and 2023

Pond and date of Survey	Bottle trap				Torchlight				Egg search	Comments
	Tc	Lv	Lh	Lv/Lh	Tc	Lv	Lh	Lv/Lh	Tc	
Pond 1										

17-18/04/2023						13 adult			No – no vegetation	
11-12/05/2023							2♂ 1♀, 1 Juv.			
15-16/05/2023		1♂	3♂ 1♀		Possible 1♂			23♀		Tadpoles
22-23/05/2023	2♀	1♂	2♀					4		
30-31/05/2023		1♀						1♀		
05-06/06/2023		2♂	3♂			1♀		7♀		
Pond 2										
17-18/04/2023					2♀ 1♂	15 adult			No – no suitable vegetation that was safe to access.	
11-12/05/2023			1♀			1♂		1♀		1 common frog larvae
15-16/05/2023		1♂ 1♀	2♂		Possible 1♂ 1♀	1♂		8♀		Tadpoles
22-23/05/2023		1♀					1♂ 1♀	4		
30-31/06/2023										
05-06/06/2023								2♀		
Pond 3										
17-18/04/2023					2♂	58 adult			No - no suitable vegetation that was safe to access.	
11-12/04/2023										1 adult common frog
15-16/05/2023			1♀			1♀	1♀	7♀		Tadpoles
22-23/05/2023		1♂	1♂					4		
30-31/05/2023							1♂	2♀		
05-06/06/2023								3♀		
Pond 4										
17-18/04/2023		2♂					94 adult		Yes	
11-12/05/2023			2♂					21♀		
15-16/05/2023							1♂	25♀		Tadpoles

22-23/05/2023			1♂ 3♀					2♀ 7		
30-31/05/2023							2♀	10♀		
05-06/06/2023			1♂ 1♀				4♂	11♀		
Pond 5										
17-18/04/2023							~100 adult		No. No suitable vegetation	
Pond 6										
17-18/04/2023									No. No suitable vegetation	
Pond 7										
17-18/04/2023									No. No suitable vegetation	
Pond 8										
17-18/04/2023									No. No suitable vegetation	
Pond 9										
17-18/04/2023									No. No suitable vegetation	
Pond 10										
17-18/04/2023									No. No suitable vegetation	
Pond 11										
17-18/04/2023									No. No suitable vegetation	
Pond 12										
17-18/04/2023									No. No suitable vegetation	
Pond 13										
07/04/2022									HSI only: poor	
Pond 14										
07/04/2022									HIS only: below average	
Pond 15										
26-27/04/2022	1♂		1		3♀ 14♂	2	2	1	No	

28-29/04/2022	1♀ 4♂		2		5♀ 31♂			30+	Yes	
05-06/05/2022	1♂	3	6		3♀ 31♂	3	10	17	Yes	
11-12/05/2022	3♀ 4♂	5	10		5♀ 8♂	1	6	19	Yes	
26-27/05/2022			3		2♀ 4♂	1		13	Yes	
06-07/06/2022	2♂				1♂			29	Yes	