Appendix 3. Parameter estimates for all binomial regression models. Within a species, models are ranked from lowest to highest ΔAIC_c score.

	Intercept		Dist†		Dist^2		Mic‡		42 dB§		50 dB|		Dist:Mic		Dist^2:Mic		Dist: 42 dB		Dist^2: 42 dB		Dist: 50dB		Dist^2: 50 dB	
Call	β	SE	B	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
AMBI	1.7	0.1	-32.5	3.2	2.7	2.8	0.2	0.0	-1.0	0.1	-1.3	0.1	2.0	0.8	0.1	0.8								
AMBI	1.8	0.1	-36.8	2.7	4.4	2.2	0.2	0.0	-1.0	0.1	-1.3	0.1												
AMBI	1.7	0.2	-29.2	9.0	5.0	6.1	0.2	0.0	-1.0	0.2	-1.2	0.2	2.2	0.8	0.2	0.8	-1.8	9.2	-4.7	6.9	-6.3	9.2	-3.6	7.0
AMBI	1.9	0.3	-41.4	9.8	10.3	6.3	0.2	0.0	-1.1	0.3	-1.4	0.3					6.0	10.2	-8.1	7.2	1.9	10.3	-6.9	7.3
AMBI	0.8	0.1	-21.3	3.7	2.8	3.3			-0.6	0.1	-0.8	0.1					-8.7	4.8	-1.5	4.6	-13.6	5.0	-1.1	4.9
AMBI	0.9	0.1	-29.1	2.0	3.5	1.9			-0.6	0.1	-0.8	0.1												
BAWW	-0.1	0.2	-69.7	6.9	3.1	8.5	0.1	0.0	-3.2	0.7	-5.6	1.7					-37.5	28.6	-13.9	16.2	-15.6	58.2	45.2	25.5
BAWW	-0.1	0.2	-71.9	7.9	1.7	8.9	0.1	0.0	-3.2	0.7	-5.6	1.8	-0.7	1.4	-1.5	1.1	-38.0	29.0	-15.7	16.5	-15.9	61.4	42.6	26.5
BAWW	-0.4	0.2	-63.9	6.0	-1.7	7.3			-3.0	0.7	-5.4	1.8					-44.1	28.6	-8.8	15.7	-23.5	62.9	48.1	26.6
BAWW	0.2	0.2	-77.2	5.7	14.1	4.1	0.1	0.0	-2.8	0.2	-4.3	0.3												
BAWW	0.1	0.2	-79.3	6.5	11.1	4.6	0.1	0.0	-2.8	0.2	-4.4	0.3	-0.8	1.4	-1.8	1.1								
BAWW	-0.1	0.1	-72.3	5.3	14.2	3.9			-2.5	0.2	-4.0	0.3												
Grunt	1.4	0.1	-17.5	4.4	-2.3	3.6	0.1	0.0	-1.3	0.2	-2.4	0.2					-26.4	6.2	8.1	5.9	-39.7	8.3	-4.3	6.4
Grunt	1.4	0.1	-17.1	4.8	-1.8	4.0	0.1	0.0	-1.3	0.2	-2.4	0.2	0.1	0.5	0.2	0.6	-26.6	6.1	8.0	5.9	-39.9	8.4	-4.3	6.3
Grunt	1.9	0.1	-40.4	2.6	6.5	2.1	0.1	0.0	-1.8	0.2	-2.6	0.2												
Grunt	1.9	0.1	-41.8	2.9	6.9	2.6	0.1	0.0	-1.8	0.2	-2.6	0.2	-0.5	0.6	0.1	0.7								
Grunt	1.1	0.1	-15.6	3.5	-1.6	3.1			-1.2	0.1	-2.3	0.2					-27.0	5.4	6.7	5.4	-41.5	7.8	-4.7	6.0
Grunt	1.5	0.1	-37.1	2.3	7.0	2.0			-1.5	0.1	-2.3	0.2												
LCSP	-0.6	0.2	-66.1	7.7	-5.8	7.9	0.2	0.1	-3.2	1.0	-7.5	6.1	4.9	3.5	0.7	1.9	-56.2	37.7	-8.8	19.4	-113.5	213.5	9.5	75.4
LCSP	-0.7	0.2	-71.2	7.4	-4.5	8.0	0.1	0.0	-3.2	1.0	-7.3	5.9					-55.0	37.4	-9.6	19.2	-102.8	207.6	12.6	73.5
LCSP	-0.8	0.2	-69.4	7.3	-5.3	7.5			-3.1	1.0	-7.6	6.2					-58.0	37.8	-8.9	19.2	-120.8	216.7	7.2	76.4
LCSP	-0.3	0.2	-74.1	6.8	12.1	4.8	0.1	0.1	-2.3	0.2	-3.9	0.3	3.3	2.9	-0.4	1.6								
LCSP	-0.3	0.2	-77.7	6.4	13.5	4.6	0.1	0.0	-2.3	0.2	-3.9	0.3												
LCSP	-0.5	0.2	-75.3	6.1	13.8	4.5			-2.2	0.2	-3.7	0.3												

	Intercept		Dist†		Dist^2		Mic‡		42 dB§		50 dB|		Dist:Mic		Dist^2:Mic		Dist: 42 dB		Dist^2: 42 dB		Dist: 50dB		Dist^2: 50 dB	
Call	β	SE	B	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
NESP	1.2	0.2	-25.5	6.4	2.1	4.9	0.1	0.0	-2.4	0.3	-7.3	1.8	1.7	0.8	-0.2	0.8	-42.9	11.2	-7.5	8.6	-167.5	68.8	-38.7	28.7
NESP	1.3	0.2	-31.7	6.8	5.0	5.1	0.1	0.0	-2.5	0.3	-7.1	1.8					-38.9	11.5	-9.2	8.7	-156.1	67.9	-37.4	28.5
NESP	1.9	0.1	-56.1	3.5	17.4	2.5	0.1	0.0	-2.6	0.2	-4.2	0.3												
NESP	1.9	0.1	-54.5	3.7	15.9	2.8	0.1	0.0	-2.6	0.2	-4.2	0.3	0.9	0.8	-0.7	0.8								
NESP	0.9	0.1	-25.6	4.5	2.8	3.9			-2.3	0.3	-7.2	1.9					-44.9	10.3	-7.1	8.1	-172.5	69.9	-39.6	29.0
NESP	1.4	0.1	-49.9	3.1	17.5	2.4			-2.2	0.2	-3.7	0.2												
OVEN	1.8	0.1	-37.1	2.5	7.1	2.1	0.0	0.0	-1.6	0.1	-2.4	0.2												
OVEN	1.6	0.3	-26.8	9.9	5.5	6.3	0.0	0.0	-1.2	0.3	-2.2	0.3					-19.1	11.2	5.9	8.2	-11.0	10.7	-3.7	7.3
OVEN	1.8	0.1	-35.7	2.7	6.9	2.4	0.0	0.0	-1.6	0.1	-2.4	0.2	0.7	0.6	0.0	0.7								
OVEN	1.5	0.2	-23.1	9.7	4.5	6.3	0.0	0.0	-1.2	0.3	-2.1	0.3	0.7	0.5	0.2	0.7	-20.9	10.7	6.7	8.0	-13.5	10.3	-2.4	7.2
OVEN	1.5	0.3	-27.8	10.3	6.8	6.6			-1.2	0.3	-2.2	0.3					-17.2	11.5	3.9	8.3	-10.1	11.1	-4.9	7.5
OVEN	1.7	0.1	-36.9	2.4	7.5	2.1			-1.5	0.1	-2.3	0.2												
PBGR	1.9	0.1	-40.3	2.6	4.6	2.1	0.1	0.0	-1.7	0.2	-2.6	0.2												
PBGR	1.5	0.2	-22.4	7.2	-2.6	5.0	0.0	0.0	-1.3	0.2	-2.2	0.2					-21.5	8.4	5.9	6.9	-20.4	8.6	4.8	6.4
PBGR	1.9	0.1	-41.0	2.9	5.4	2.6	0.1	0.0	-1.7	0.2	-2.6	0.2	-0.3	0.5	0.4	0.7								
PBGR	1.5	0.2	-22.1	7.1	-1.7	5.0	0.1	0.0	-1.3	0.2	-2.2	0.2	0.0	0.5	0.5	0.6	-21.7	7.9	5.9	6.6	-20.6	8.2	4.8	6.2
PBGR	1.3	0.1	-20.0	5.2	-2.8	4.0			-1.2	0.2	-2.1	0.2					-22.7	6.7	5.5	6.0	-22.8	7.0	5.2	5.7
PBGR	1.7	0.1	-38.5	2.4	5.1	2.0			-1.6	0.1	-2.4	0.2												
Perweep	1.0	0.1	-25.4	1.8	5.1	1.7	0.1	0.0	-0.5	0.1	-1.2	0.1												
Perweep	1.1	0.1	-28.5	5.4	11.2	4.4	0.1	0.0	-0.6	0.1	-1.3	0.2					5.7	6.0	-11.4	5.1	-0.6	6.2	-5.9	5.3
Perweep	1.0	0.1	-26.3	2.1	5.5	2.1	0.1	0.0	-0.5	0.1	-1.2	0.1	-0.4	0.5	0.2	0.6								
Perweep	1.1	0.1	-29.9	5.7	11.9	4.5	0.1	0.0	-0.7	0.2	-1.3	0.2	-0.4	0.5	0.1	0.5	6.3	6.1	-11.7	5.2	0.0	6.4	-6.2	5.4
Perweep	0.8	0.1	-24.2	4.3	9.4	3.7			-0.5	0.1	-1.2	0.1					1.9	5.0	-9.4	4.6	-4.6	5.3	-3.9	4.8
Perweep	0.8	0.1	-24.4	1.7	5.2	1.7			-0.5	0.1	-1.1	0.1												
SEWR	0.5	0.1	-42.6	4.9	6.2	4.8	0.1	0.0	-3.1	0.5	-8.6	4.3					-52.3	21.3	-13.8	12.4	-174.2	153.0	-26.8	56.5
SEWR	0.5	0.1	-40.3	5.3	4.4	5.0	0.1	0.0	-3.1	0.5	-9.0	4.4	1.3	1.2	-0.7	0.9	-55.0	21.7	-14.7	12.6	-191.6	156.7	-33.3	57.4
SEWR	0.9	0.1	-58.7	3.8	18.8	2.9	0.1	0.0	-2.6	0.2	-4.0	0.3												

	Intercept		Dist†		Dist^2		Mic‡		42 dB§		50 dB|		Dist:Mic		Dist^2:Mic		Dist: 42 dB		Dist^2: 42 dB		Dist: 50dB		Dist^2: 50 dB	
Call	β	SE	B	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
SEWR	0.9	0.1	-57.6	4.1	17.1	3.1	0.1	0.0	-2.6	0.2	-4.0	0.3	0.8	1.1	-1.1	0.9								
SEWR	0.2	0.1	-37.6	3.9	3.8	4.1			-3.0	0.5	-9.2	4.5					-57.7	21.1	-11.3	12.1	-208.0	161.1	-35.8	58.8
SEWR	0.4	0.1	-53.3	3.4	18.4	2.7			-2.2	0.2	-3.6	0.3												
Tickit	2.1	0.1	-36.4	2.7	6.9	2.5	0.0	0.0	-2.1	0.2	-2.7	0.2	0.9	0.5	0.8	0.7								
Tickit	2.0	0.1	-38.2	2.5	5.5	2.1	0.0	0.0	-2.1	0.2	-2.6	0.2												
Tickit	2.7	1.0	-61.4	34.0	21.7	15.9	0.0	0.0	-2.8	1.0	-3.4	1.0	0.9	0.5	0.8	0.7	25.6	34.1	-14.0	16.4	21.1	34.2	-19.3	16.4
Tickit	2.9	1.0	-69.1	34.4	22.7	16.0	0.0	0.0	-2.9	1.0	-3.6	1.0					31.6	34.6	-16.2	16.5	27.2	34.7	-21.8	16.5
Tickit	1.9	0.1	-38.2	2.4	5.9	2.1			-2.0	0.2	-2.6	0.2												
Tickit	2.9	1.0	-74.5	33.9	25.9	15.8			-3.0	1.0	-3.6	1.0					37.1	34.1	-19.3	16.3	32.6	34.2	-24.8	16.3
Whinny	1.4	0.2	-19.2	6.2	2.3	4.6	0.0	0.0	-1.3	0.2	-2.0	0.2					-8.8	6.9	3.8	5.6	-20.0	7.5	-3.7	5.9
Whinny	1.7	0.1	-29.9	2.1	5.6	1.8	0.1	0.0	-1.5	0.1	-2.1	0.1												
Whinny	1.4	0.2	-18.9	6.2	3.5	4.7	0.0	0.0	-1.3	0.2	-2.0	0.2	0.1	0.5	0.5	0.6	-9.1	6.7	3.6	5.4	-20.2	7.4	-4.0	5.8
Whinny	1.7	0.1	-30.3	2.3	6.5	2.2	0.1	0.0	-1.5	0.1	-2.1	0.1	-0.2	0.5	0.4	0.6								
Whinny	1.2	0.1	-17.2	4.9	2.0	3.9			-1.2	0.1	-1.9	0.2					-10.5	5.7	4.3	5.0	-22.0	6.5	-3.1	5.4
Whinny	1.5	0.1	-28.9	2.0	6.0	1.8			-1.4	0.1	-2.0	0.1												
YERA	0.8	0.1	-30.0	4.5	2.3	4.1	0.1	0.0	-1.9	0.2	-6.1	1.8	2.0	1.0	0.7	0.8	-18.3	7.5	3.9	6.4	-121.6	66.2	-17.2	27.7
YERA	0.8	0.1	-34.3	4.6	2.7	4.2	0.1	0.0	-1.9	0.2	-6.0	1.7					-16.2	7.7	3.1	6.5	-117.1	65.4	-17.3	27.5
YERA	1.1	0.1	-49.2	3.1	14.0	2.4	0.1	0.0	-2.1	0.2	-3.4	0.2												
YERA	1.1	0.1	-47.0	3.3	14.3	2.6	0.1	0.0	-2.1	0.2	-3.4	0.2	1.3	0.9	0.4	0.8								
YERA	0.5	0.1	-30.4	3.5	1.0	3.5			-1.8	0.2	-6.1	1.8					-20.1	7.1	5.1	6.1	-130.1	68.2	-19.2	28.2
YERA	0.7	0.1	-45.4	2.8	13.9	2.3			-1.9	0.2	-3.1	0.2												

† Distance (m) between call broadcast and microphone
‡ Microphone sensitivity loss (dB) relative to manufacture specifications
§ 42 dB of experimentally added noise reaching the microphone
| 50 dB of experimentally added noise reaching the microphone