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SUPPLEMENTARY INFORMATION

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SUPPLEMENTARY TABLE S1. Mean, standard deviation (SD), minimum (Min) and maximum (Max) measures of five frequency parameters at key structural features of the call for all 22 species regardless of sample size. Lines separate species of different families

Species	Frequency of Maximum Power (kHz)			Characteristic Frequency (kHz)			Frequency of the Knee (kHz)			Upper Knee Frequency (kHz)			Frequency of the Ledge (kHz)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
M. nigeriae (N = 9)	24.6 (3.6)	20.7	30.3	21.0 (2.0)	18.8	23.9	25.7 (2.9)	21	29.8	29.3 (4.2)	22.8	33.5	21.5 (2.1)	19	24.8
M. pumilus (N = 6)	25.7 (4.0)	23	33.6	22.6 (0.8)	21.7	23.7	28.5 (1.4)	26.9	30.1	33.3 (3.7)	28.6	38.8	23.4 (1.0)	22.4	24.8
Miniopterus sp. (N = 12)	59.5 (2.3)	54.1	63	54.9 (1.9)	51.8	58.5	64.5 (3.3)	59.1	70.3	68.2 (4.7)	61	78.9	57.8 (3.7)	54.2	66.1
A. nana (N = 12)	70.1 (3.1)	65.7	76.9	67.7 (2.9)	62	73.1	75.7 (2.8)	71.6	80.4	76.8 (2.6)	72.5	79.3	70.5 (3.3)	66.7	76.3
G. variegata (N = 8)	37.6 (2.7)	34.6	42.6	34.8 (1.0)	33	36.7	42.0 (3.6)	36.2	46.4	45.0 (3.2)	38	49.1	37.2 (2.5)	34.2	41.1
L. angolensis (N = 11)	40.8 (3.4)	36.9	46.4	36.0 (0.7)	35.4	37.6	43.2 (3.0)	38.9	49.4	50.4 (3.7)	42.5	54.9	37.5 (1.2)	36.7	41
L. capensis (N = 46)	46.0 (4.3)	41.1	58.7	40.1 (1.4)	37.3	42.5	50.6 (2.3)	46.2	57	57.6 (5.3)	46.5	66.9	42.6 (2.1)	39	47.1
M. bocagii (N = 3)	47.6 (3.4)	44.9	51.4	35.8 (2.3)	33.3	37.9	46.4 (1.6)	44.9	48.1	50.1 (2.0)	47.9	51.7	39.1 (2.9)	35.8	41.5
M. welwitschii (N = 9)	39.7 (5.0)	34.7	49.9	31.7 (2.1)	28.6	34.3	47.4 (3.2)	41.7	52.6	54.6 (3.8)	49.7	61.6	36.6 (3.8)	30.9	42.4
N. anchietae (N = 16)	48.8 (3.1)	44.6	56.2	43.6 (1.0)	41.6	45	50.4 (2.0)	46.1	55.2	55.9 (5.0)	46.5	65.2	45.2 (1.4)	43.3	47.7
N. schlieffeni (N = 8)	48.5 (4.5)	43.4	57.2	44.0 (1.2)	42.7	45.7	51.5 (4.7)	43.3	59.8	53.1 (4.6)	44.1	58.8	45.6 (2.7)	42.7	51.2

Species	Frequency of Maximum Power (kHz)			Characteristic Frequency (kHz)			Frequency of the Knee (kHz)			Upper Knee Frequency (kHz)			Frequency of the Ledge (kHz)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
N. zuluensis (N = 12)	52.8 (4.0)	45.3	57.9	49.1 (1.9)	45.4	52.2	55.6 (4.9)	47.8	62.5	57.1 (5.6)	48	65	49.9 (2.3)	45.7	53.6
P. rusticus (N = 18)	61.5 (4.5)	57.3	72.1	57.1 (1.4)	54.9	60.2	66.9 (3.1)	61.4	71.8	71.7 (3.8)	66.8	81.2	58.3 (1.6)	54.8	61
S. dinganii (N = 16)	37.7 (2.6)	32.2	43.3	32.8 (2.1)	29	36.8	39.8 (2.8)	34.9	44.2	45.7 (4.4)	36.9	51.8	34.4 (2.6)	29.2	38.1
S. viridis (N = 10)	48.3 (4.8)	42.2	58.3	41.4 (1.0)	40	43	50.6 (3.9)	45.7	59.7	62.2 (6.3)	51.1	73.7	43.7 (2.3)	40.3	47.6
V. rueppellii (N = 8)	49.9 (2.2)	46.5	53.7	46.1 (2.1)	43.3	50.4	54.8 (4.0)	50.4	60.9	56.5 (3.5)	51.2	61.5	48.3 (2.0)	44.8	50.7
H. caffer (N = 1)	148.1 (NA)	148.1	148.1	145.6 (NA)	145.6	145.6	150.4 (NA)	150.4	150.4	150.7 (NA)	150.7	150.7	149.0 (NA)	149	149
H. ruber (N = 1)	133.4 (NA)	133.4	133.4	133.2 (NA)	133.2	133.2	133.4 (NA)	133.4	133.4	133.4 (NA)	133.4	133.4	133.3 (NA)	133.3	133.3
M. vittatus (N = 19)	64.4 (1.9)	60.5	66.8	64.1 (1.8)	60.4	66.6	57.6 (6.8)	43.5	65.2	57.7 (6.8)	43.5	65.3	57.5 (6.7)	43.4	65.1
R. mossambicus (N = 2)	38.5 (2.1)	37	40	38.1 (2.1)	36.6	39.5	38.5 (2.1)	37	39.9	38.5 (2.1)	37.1	40	38.1 (2.1)	36.6	39.6
R. simulator (N = 9)	77.9 (1.6)	75.7	79.9	77.6 (1.7)	75.5	80.2	76.7 (4.0)	66.7	80	76.8 (4.0)	66.7	80.1	76.3 (3.9)	66.5	79.7
Nycteris sp. (N = 1)	71.3 (NA)	71.3	71.3	64.9 (NA)	64.9	64.9	69.0 (NA)	69	69	69.0 (NA)	69	69	68.4 (NA)	68.4	68.4

SUPPLEMENTARY TABLE S2. Mean, standard deviation (SD), minimum (Min) and maximum (Max) measures of six frequency parameters along the call sweep for all 22 species regardless of sample size. Lines separate species of different families

Species	Start Frequency (kHz)			End Frequency (kHz)			Highest Frequency (kHz)			Centre Frequency (kHz)			Lowest Frequency (kHz)			Bandwidth (kHz)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
M. nigeriae (N = 9)	32.7 (5.0)	24.3	37.1	18.5 (2.5)	14.8	21.7	32.7 (5.0)	24.3	37.2	24.0 (2.3)	21	27.5	18.3 (2.5)	14.8	21.5	14.4 (5.2)	12.5	8.2
M. pumilus (N = 6)	36.3 (4.3)	30.7	42.9	20.2 (0.5)	19.4	20.7	36.3 (4.3)	30.8	42.9	27.3 (1.7)	25.1	30.3	20.0 (0.5)	19.1	20.7	16.3 (4.1)	10.9	22.2
Miniopterus sp. (N = 12)	90.6 (8.9)	101.4	99.7	51.9 (2.4)	47.8	54.8	90.7 (8.8)	101.4	99.7	61.6 (3.0)	55.6	65.9	51.9 (2.3)	47.8	54.5	38.8 (9.9)	22.1	50.6
A. nana (N = 12)	98.3 (4.8)	101.1	99.4	65.4 (3.6)	58.2	70.7	98.3 (4.8)	101.1	99.4	71.0 (2.2)	68.4	74.8	65.2 (3.6)	58.2	70.4	33.1 (6.8)	22.2	42.8
G. variegata (N = 8)	60.8 (8.5)	43.5	70	32.8 (0.9)	31.5	34.1	60.9 (8.5)	43.5	70	38.2 (2.0)	35.2	41.2	32.7 (0.9)	31.5	33.7	28.2 (8.8)	24.8	9.8
L. angolensis (N = 11)	65.7 (5.6)	52.9	70.4	33.8 (0.9)	32.3	35.4	65.7 (5.6)	52.9	70.4	42.4 (2.3)	38.6	45.8	33.8 (0.8)	32.3	35.2	31.9 (5.7)	19.2	36.8
L. capensis (N = 46)	79.0 (6.5)	62.1	93.5	36.8 (1.3)	33.9	39.1	79.0 (6.5)	62.1	93.5	47.9 (2.8)	43.6	54.7	36.8 (1.3)	33.9	39.1	42.2 (6.2)	26.8	54.6
M. bocagii (N = 3)	66.2 (5.7)	59.9	70.9	27.3 (1.6)	26.2	29.2	66.2 (5.7)	59.9	70.9	45.3 (3.2)	41.9	48.3	27.3 (1.6)	26.2	29.2	38.9 (4.6)	33.6	41.7
M. welwitschii (N = 9)	75.2 (8.3)	62.7	83.6	24.7 (2.2)	21.7	28.3	75.2 (8.3)	62.7	83.6	45.1 (4.2)	38.5	50.2	24.7 (2.2)	21.7	28.3	50.5 (7.7)	37.6	58.9
N. anchietae (N = 16)	79.8 (6.7)	61.4	89.4	41.5 (1.6)	37.8	44.6	79.8 (6.7)	61.4	89.4	47.8 (1.8)	45	51.3	41.4 (1.5)	37.8	44.1	38.4 (7.3)	17.4	48.2

Species	Start Frequency (kHz)			End Frequency (kHz)			Highest Frequency (kHz)			Centre Frequency (kHz)			Lowest Frequency (kHz)			Bandwidth (kHz)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
N. schlieffeni (N = 8)	74.5 (11.6)	49.4	84.9	41.9 (1.1)	40.2	43.5	74.5 (11.6)	49.4	84.9	46.8 (2.4)	42.9	49.7	41.8 (1.0)	40.2	43.5	32.7 (11.4)	27.7	7.4
N. zuluensis (N = 12)	78.4 (14.4)	52.9	97.4	48.1 (2.3)	44.5	50.9	78.4 (14.4)	53	97.4	50.8 (2.7)	45.3	54.6	47.7 (2.1)	44.5	50.9	30.7 (14.6)	14.5	9.2
P. rusticus (N = 18)	91.4 (4.9)	80.8	99	54.5 (1.5)	52.2	57.3	91.4 (4.9)	80.8	99	60.8 (2.4)	56	67.2	54.4 (1.5)	52.2	57.3	36.9 (4.9)	26	44.2
S. dinganii (N = 16)	60.3 (5.7)	49.4	69.1	30.4 (1.8)	27.7	35.9	60.3 (5.7)	49.4	69.1	38.0 (3.1)	32	42.1	30.2 (1.8)	27.6	35.7	30.1 (5.6)	19.7	38.8
S. viridis (N = 10)	79.2 (4.7)	69.7	86.1	38.7 (1.1)	37.2	40.9	79.3 (4.8)	69.7	86.1	50.8 (4.5)	44.7	59.5	38.6 (1.1)	37.2	40.8	40.6 (5.4)	30.3	47.5
V. rueppellii (N = 8)	76.1 (7.8)	67	88.6	43.5 (3.1)	39.8	50.7	76.1 (7.8)	67	88.6	50.3 (1.9)	47.1	52.7	43.2 (2.5)	39.7	48.6	32.9 (8.6)	23.3	45
H. caffer (N = 1)	149.6 (NA)	149.6	149.6	119.4 (NA)	119.4	119.4	151.0 (NA)	151	151	150.8 (NA)	150.8	150.8	119.4 (NA)	119.4	119.4	31.6 (NA)	31.6	31.6
H. ruber (N = 1)	132.5 (NA)	132.5	132.5	125.8 (NA)	125.8	125.8	133.5 (NA)	133.5	133.5	133.4 (NA)	133.4	133.4	125.8 (NA)	125.8	125.8	7.7 (NA)	7.7	7.7
M. vittatus (N = 19)	64.3 (1.9)	60.4	66.8	62.7 (3.0)	54	66.1	64.6 (1.8)	60.7	66.9	64.5 (1.9)	60.5	66.8	62.6 (3.0)	54	66	2.0 (1.8)	0.8	7.7
R. mossambicus (N = 2)	31.3 (1.6)	30.2	32.4	33.2 (1.8)	32	34.5	38.7 (2.1)	37.3	40.2	38.5 (2.0)	37.1	40	30.3 (1.0)	29.7	31	8.4 (1.1)	7.6	9.1
R. simulator (N = 9)	74.6 (3.4)	67.8	79	75.3 (2.4)	70.8	78.6	78.3 (1.7)	76.2	80.8	78.2 (1.7)	76.1	80.7	73.5 (3.5)	66.2	77.9	4.7 (3.1)	12.5	5.6
Nycteris sp. (N = 1)	84.1 (NA)	84.1	84.1	60.2 (NA)	60.2	60.2	84.8 (NA)	84.8	84.8	69.6 (NA)	69.6	69.6	60.2 (NA)	60.2	60.2	24.6 (NA)	24.6	24.6

Species	Start Frequency (kHz)			End Frequency (kHz)			Highest Frequency (kHz)			Centre Frequency (kHz)			Lowest Frequency (kHz)			Bandwidth (kHz)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max

SUPPLEMENTARY TABLE S3. Mean, standard deviation (SD), minimum (Min) and maximum (Max) measures of three time-based parameters for all 22 species regardless of sample size. Lines separate species of different families

Species	Preceding Interval (ms)			Ledge Duration (ms)			Call Duration (ms)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
M. nigeriae (N = 9)	136.0 (128.2)	37.5	465.0	0.4 (0.0)	0.4	0.5	6.6 (2.2)	3.9	9.3
M. pumilus (N = 6)	118.9 (27.4)	87.9	160.0	0.4 (0.1)	0.3	0.5	7.5 (2.0)	10.4	9.4
Miniopterus sp. (N = 12)	63.8 (14.1)	35.2	90.7	0.5 (0.1)	0.3	0.7	3.8 (1.8)	1.9	7.3
A. nana (N = 12)	99.2 (56.7)	53.8	216.0	0.6 (0.1)	0.4	0.8	3.1 (0.9)	1.8	4.9
G. variegata (N = 8)	89.9 (36.1)	48.2	148.0	0.6 (0.1)	0.4	0.8	4.1 (1.1)	2.8	5.4
L. angolensis (N = 11)	70.8 (16.7)	44.3	94.9	0.4 (0.1)	0.3	0.6	3.4 (0.5)	2.6	4.3
L. capensis (N = 46)	71.3 (17.6)	29.4	132.0	0.4 (0.1)	0.3	0.6	3.5 (0.7)	2.1	5
M. bocagii (N = 3)	91.6 (25.1)	62.6	107.0	0.3 (0.0)	0.3	0.3	2.6 (0.4)	2.4	3.1
M. welwitschii (N = 9)	71.4 (32.3)	32.3	120.0	0.4 (0.1)	0.3	0.6	3.0 (0.5)	2.4	3.9
N. anchietae (N = 16)	82.0 (20.5)	59.2	131.0	0.5 (0.1)	0.4	0.6	3.6 (0.6)	2.8	4.9
N. schlieffeni (N = 8)	80.8 (39.0)	50.5	162.0	0.5 (0.1)	0.3	0.6	3.6 (1.2)	2.5	6.3
N. zuluensis (N = 12)	83.6 (24.3)	46.3	137.0	0.5 (0.1)	0.3	0.8	4.3 (1.0)	2.6	6

Species	Preceding Interval (ms)			Ledge Duration (ms)			Call Duration (ms)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
P. rusticus (N = 18)	69.9 (13.5)	44.2	98.7	0.5 (0.1)	0.3	0.6	4.2 (0.9)	1.9	5.4
S. dinganii (N = 16)	73.8 (20.4)	43.1	112.0	0.4 (0.1)	0.3	0.5	3.8 (1.5)	2.4	6.5
S. viridis (N = 10)	58.3 (12.0)	39.3	77.3	0.4 (0.0)	0.4	0.5	4.2 (1.2)	2.4	5.7
V. rueppellii (N = 8)	80.8 (36.7)	55.5	168.9	0.5 (0.1)	0.4	0.5	3.5 (1.1)	2.1	5.5
H. caffer (N = 1)	96.4 (NA)	96.4	96.4	0.4 (NA)	0.4	0.4	8.0 (NA)	8	8
H. ruber (N = 1)	44.3 (NA)	44.3	44.3	0.4 (NA)	0.4	0.4	8.0 (NA)	8	8
M. vittatus (N = 19)	66.1 (21.3)	37.9	101.0	1.3 (0.9)	0.3	3.3	12.6 (2.6)	10.1	9.3
R. mossambicus (N = 2)	97.9 (8.6)	91.8	104.0	0.4 (0.0)	0.3	0.4	34.3 (3.7)	31.7	36.9
R. simulator (N = 9)	98.9 (13.8)	81.2	122.0	0.7 (0.9)	0.3	3.1	24.1 (4.8)	18.8	30.1
Nycteris sp. (N = 1)	68.5 (NA)	68.5	68.5	0.5 (NA)	0.5	0.5	2.1 (NA)	2.1	2.1

SUPPLEMENTARY TABLE S4. Mean, standard deviation (SD), minimum (Min) and maximum (Max) measures of six slope-based parameters for all 22 species regardless of sample size. Lines separate species of different families

Species	Start Slope (kHz/ms)			End Slope (kHz/ms)			Dominant Slope (kHz/ms)			Steepest Slope (kHz/ms)			Lowest Slope (kHz/ms)			Slope at Characteristic Frequency (kHz/ms)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
M. nigeriae (N = 9)	-4.0 (1.8)	-1.7	-6.5	-2.7 (1.9)	0	-5.7	1.9 (0.9)	1	3.7	4.5 (1.2)	2.5	6.5	1.1 (0.7)	0.1	1.9	1.5 (0.8)	0.5	2.9
M. pumilus (N = 6)	-3.1 (1.3)	-2.1	-5.5	-3.8 (1.3)	-2.1	-5.3	2.5 (1.0)	1.6	4	4.5 (1.8)	2.8	7.2	1.6 (0.5)	1	2.2	2.1 (0.5)	1.6	2.8
Miniopterus sp. (N = 12)	-24.0 (5.8)	-13.1	-38.2	-8.8 (4.0)	-10.1	-5.6	12.6 (8.5)	1.2	7.7	31.2 (9.4)	20.8	51.1	4.6 (3.5)	0.2	9.4	5.9 (4.2)	0.6	8.9
A. nana (N = 12)	-27.7 (5.1)	-19.1	-37.5	-8.2 (4.0)	-11.6	-8.4	7.5 (7.6)	0.7	7.3	33.5 (7.7)	20.9	49.6	2.7 (2.7)	0.2	7.6	4.0 (3.4)	0.5	8.9
G. variegata (N = 8)	-17.7 (7.3)	-12.1	-5.9	-6.4 (4.6)	-0.1	-4.7	5.0 (3.3)	1.1	9.8	22.8 (9.4)	16	6.3	2.1 (1.3)	0.1	4	2.8 (1.8)	0.7	6.3
L. angolensis (N = 11)	-16.0 (3.3)	-11	-21.6	-7.9 (2.6)	-11	-9.3	11.0 (3.4)	10.2	8.1	19.1 (3.9)	12.4	27.3	3.1 (1.4)	1.5	5.6	3.7 (1.5)	1.8	6.3
L. capensis (N = 46)	-23.0 (3.9)	-15.4	-31.5	-8.2 (3.3)	-1.4	-9.9	11.5 (5.3)	10.5	9.8	27.7 (5.2)	17.8	43.5	5.1 (2.1)	1.9	9.4	5.7 (2.2)	12.2	9.7
M. bocagii (N = 3)	-14.2 (2.9)	-10.8	-16	-20.2 (6.6)	-13.3	-26.4	15.3 (3.5)	11.5	18.3	19.8 (4.5)	14.7	23	8.9 (2.2)	10	6.4	10.8 (2.6)	12	7.9
M. welwitschii (N = 9)	-19.2 (3.7)	-14.1	-24.8	-18.8 (4.5)	-13.6	-25.9	18.1 (5.2)	12.2	9.4	25.5 (5.7)	16.5	33.9	10.9 (2.8)	10.5	6.3	11.6 (3.3)	10.7	6.4

Species	Start Slope (kHz/ms)			End Slope (kHz/ms)			Dominant Slope (kHz/ms)			Steepest Slope (kHz/ms)			Lowest Slope (kHz/ms)			Slope at Characteristic Frequency (kHz/ms)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
N. anchietae (N = 16)	-22.6 (3.3)	-16.3	-27.6	-5.7 (2.3)	-0.9	-9.5	10.8 (4.8)	10.6	9	28.1 (4.6)	19.9	35	2.3 (1.7)	0.2	6.3	2.8 (1.7)	0.6	6.5
N. schlieffeni (N = 8)	-29.1 (9.8)	-24.1	-7.7	-5.7 (3.4)	-1.1	-7.1	5.9 (5.7)	0.7	4.5	34.0 (13.0)	24.7	7.8	1.9 (1.6)	0.2	4.8	2.7 (2.1)	0.7	6.8
N. zuluensis (N = 12)	-29.1 (12.7)	-18	-8.2	-2.7 (2.3)	-0.6	0.9	2.9 (2.5)	0.2	6.9	32.2 (15.4)	17.4	7.1	0.8 (0.9)	0	2.7	1.3 (0.8)	0.3	3
P. rusticus (N = 18)	-23.9 (4.3)	-12	-29.3	-7.2 (3.8)	-1.7	-9.8	7.1 (6.1)	0.9	9.8	26.4 (5.1)	16.1	32.4	2.0 (2.1)	0.2	9.1	2.6 (3.0)	0.5	6.1
S. dinganii (N = 16)	-15.1 (2.8)	-10.4	-21	-6.7 (3.2)	-10.5	-9.8	9.8 (4.9)	1.9	8.6	19.2 (4.4)	11.4	27	3.3 (1.7)	0.7	6.4	4.1 (1.9)	1	7.3
S. viridis (N = 10)	-16.7 (6.7)	-13.5	-9.7	-6.4 (3.0)	-1.2	-9.6	11.6 (5.4)	10.1	9.2	21.1 (6.0)	11.6	31.9	4.3 (2.6)	0.6	8.8	5.1 (3.3)	0.9	9
V. rueppellii (N = 8)	-23.1 (4.0)	-19	-28.2	-7.4 (5.1)	-10.7	0.4	10.7 (5.4)	12.7	8.3	28.5 (5.2)	20	37	3.5 (2.3)	0.7	6.2	4.6 (2.5)	1	7.7
H. caffer (N = 1)	-0.1 (NA)	-0.1	-0.1	-36.9 (NA)	-36.9	-36.9	0.1 (NA)	0.1	0.1	7.4 (NA)	7.4	7.4	0.0 (NA)	0	0	8.2 (NA)	8.2	8.2
H. ruber (N = 1)	-0.1 (NA)	-0.1	-0.1	-12.7 (NA)	-12.7	-12.7	0.1 (NA)	0.1	0.1	0.5 (NA)	0.5	0.5	0.0 (NA)	0	0	0.5 (NA)	0.5	0.5
M. vittatus (N = 19)	-0.1 (0.0)	-0.1	-0.2	-1.7 (1.1)	-0.6	-4.7	0.0 (0.0)	0	0.1	0.5 (0.3)	0.1	1.1	0.0 (0.0)	0	0	0.7 (0.4)	0.3	1.3

Species	Start Slope (kHz/ms)			End Slope (kHz/ms)			Dominant Slope (kHz/ms)			Steepest Slope (kHz/ms)			Lowest Slope (kHz/ms)			Slope at Characteristic Frequency (kHz/ms)		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
Nycteris sp. (N = 1)	-17.7 (NA)	-17.7	-17.7	-16.5 (NA)	-16.5	-16.5	8.0 (NA)	8	8	31.1 (NA)	31.1	31.1	5.6 (NA)	5.6	5.6	8.4 (NA)	8.4	8.4

SUPPLEMENTARY TABLE S5. Coefficients of linear discriminants for five call parameters; the most positive or negative values indicating greatest contribution to functional group separation in each linear discriminant (LD) function.

Parameter	LD1 (85%)	LD2 (16%)
Preceding Interval	-0.0448	0.5861
Frequency of Maximum Power	1.0971	-0.9241
Start Slope	1.6906	0.5835
End Slope	0.4391	-0.1206
Ledge Duration	0.3634	-0.1498

SUPPLEMENTARY TABLE S6. Coefficients of linear discriminants for the two call parameters with most contribution to functional group separation (Table 1); the most positive or negative values indicating greatest contribution to species separation in each linear discriminant

Parameter	LD1 (81%)	LD2 (19%)
Frequency of Maximum Power	-3.5455	-0.2274
Start Slope	-0.5493	1.8963

SUPPLEMENTARY TABLE S7. LDA prediction summary of 17 species with sample sizes of more than six individuals with predicted identifications of test individuals (Predicted) compared to the true identifications (Observed)

	Observed																
Predicted	*A. nana*	*G. variegata*	*L. angolensis*	*L. capensis*	*M. nigeriae*	*M. pumilus*	*M. vittatus*	*M. welwitschii*	*Miniopterus* sp.	*N. anchietae*	N. schlieffeni	*N. zuluensis*	*P. rusticus*	*R. simulator*	*S. dinganii*	*S. viridis*	*V. rueppellii*
A. nana	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
G. variegata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L. angolensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
L. capensis	0	0	2	13	0	0	0	0	0	4	2	0	0	0	0	2	2
M. nigeriae	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
M. pumilus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M. vittatus	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
M. welwitschii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miniopterus sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N. anchietae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N. schlieffeni	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N. zuluensis	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
P. rusticus	0	0	0	0	0	0	0	0	3	0	0	1	3	0	0	0	0
R. simulator	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
S. dinganii	0	2	1	0	0	0	0	2	0	0	0	0	0	0	3	0	0
S. viridis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
V. rueppellii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
n (Test sample)	3	2	3	13	2	1	5	2	3	4	2	3	5	2	4	3	2
Balanced Accuracy (%)	98	50	48	87	99	50	100	50	50	50	50	83	76	100	83	50	50