

Appendix 2. Details on the recognizers used to detect owl calls

Table A2.1. Details of the settings, annotations, and performance statistics of the automated computer recognizers built in Song Scope (Wildlife Acoustics Inc., Maynard, Massachusetts, USA) to detect calls of Barred Owls (*Strix varia*), Great Horned Owls (*Bubo virginianus*), and Boreal Owls (*Aegolius funereus*).

Recognizer settings	Barred Owl	Great Horned Owl	Boreal Owl
Min. quality †	50	50	50
Min. score ‡	60	60	60
Sample rate (Hz)	16,000	16,000	16,000
Max. complexity §	32	31	32
Max. resolution	7	10	7
FFT size ¶	512	512	512
FFT overlap #	0.5	0.5	0.5
Frequency minimum (Hz)	312.5	187.5	468.75
Frequency range (Hz)	1250	1125	1250
Amplitude gain (dB)	0	0	0
Background filter (s)	1	1	1
Max. syllable length (ms)	784	496	288
Max. syllable gap (ms)	928	1008	400
Max. song length (ms)	4016	3040	4048
Dynamic range (dB)	10	15	15
Algorithm	2.0	2.0	2.0
No. of annotations used	51	83	42
Sources for annotations	22 field recordings from 17 different point locations in NE Alberta	10 field recordings from 8 different point locations in NE Alberta	8 field recordings from 7 different point locations in NE Alberta
Recognizer performance statistics			
Cross training (% ± SE)	74.49 ± 4.96	79.78 ± 3.07	80.07 ± 5.97
Total training (% ± SE)	74.16 ± 3.43	79.98 ± 2.88	81.71 ± 4.98
Model states	27	23	23
State usage	11 ± 6	8 ± 2	5 ± 3
Feature vector	7	10	7
Mean symbols (n)	30 ± 24	21 ± 8	19 ± 11
Syllable types	8	7	8
Mean duration of syllable (s)	2.64 ± 0.67	2.06 ± 0.35	1.20 ± 0.30

† Quality values range from 0 to 100 and indicate signal quality confidence

‡ Score values range from 0 to 100 and indicate percent match with recognizer

§ Number of states used to generate the model for the recognizer

| Size of feature vectors in the recognizer

¶ Number of sampled used by the Fast Fourier Transform algorithm to generate a recognizer

Amount of overlap between each Fast Fourier Transform window