Supplementary

Table S1: List of the 60 acoustic indices computed using the Python package Scikit-Maad v1.5.1 with default parameters. *na*: non applicable. RmNoise: remove stationary noise.

Name	**Description**	**Main operations**	**unit**	**range of values**	**References**
ACI	Acoustic complexity index of an audio **spectrogram**	temporal derivation + ratio	none	*na*	Pieretti & al. 2011
ACTspCount	Acoustic activity in an audio **spectrogram**. Number of points above the threshold	RmNoise + threshold + sum	count	*na*	Towsey 2017
ACTspFract	Acoustic activity in an audio **spectrogram**. Proportion (fraction) of points above the threshold	RmNoise + threshold + sum + ratio	none	[0:1]	Towsey 2017
ACTspMean	Acoustic activity in an audio **spectrogram**. Mean value (in dB) of the portion of the signal above the threshold	RmNoise + threshold + mean	dB	*na*	Towsey 2017
ACTtCount	Acoustic activity in an audio **waveform**. Number of points above the threshold	RmNoise + threshold + sum	count	*na*	Towsey 2017
ACTtFraction	Acoustic activity in an audio **waveform**. Proportion (fraction) of points above the threshold	RmNoise + threshold + sum + ratio	none	[0:1]	Towsey 2017
ACTtMean	Acoustic activity in an audio **waveform**. Mean value (in dB) of the portion of the signal above the threshold	RmNoise + threshold + mean	dB	*na*	Towsey 2017
ADI	Acoustic diversity index of an audio **spectrogram**	threshold + entropy	none	[0:1]	Villanueva-Rivera & al. 2011
AEI	Acoustic evenness index of an audio **spectrogram**	threshold + entropy	none	[0:1]	Villanueva-Rivera & al. 2011
AGI	Acoustic gradient index of an audio **spectrogram**	temporal derivation	none	*na*	Ulloa & al. 2022
AnthroEnergy	Acoustic energy of an audio **spectrogram** in the bandwidth corresponding to anthropophony	sum	none	*na*	Ulloa & al. 2022

Name	Description	Main operations	unit	range of values	References
aROI	Percentage of the surface covered by the regions of interest (ROI) above a threshold in an audio **spectrogram**	RmNoise + threshold + sum + ratio	percentage	[0:100]	*This publication*
BGNf	Background energy based on the estimation of the noise profile of the power **spectrogram**	sum	dB	*na*	Ulloa & al. 2022
BGNt	Background energy computed on the audio **waveform**	histogram + sum	dB	*na*	Ulloa & al. 2022
BIO	Bioacoustic index of an audio **spectrogram**	ratio + sum	none	*na*	Boelman & al. 2007
BioEnergy	Acoustic energy of an audio **spectrogram** in the bandwidth corresponding to biophony	sum	none	*na*	Ulloa & al. 2022
EAS	Entropy of the average **spectrum** in the bandwidth corresponding to biophony	RmNoise + mean + entropy	none	[0:1]	Towsey 2017
ECU	Entropy of the **spectrogram** variance (along the time axis for each frequency in the bandwidth corresponding to biophony)	RmNoise + variance + entropy	none	[0:1]	Towsey 2017
ECV	Entropy of the coefficient of variation of the **spectrogram** (along the time axis for each frequency in the bandwidth corresponding to biophony)	RmNoise + variance + ratio + entropy	none	[0:1]	Towsey 2017
EPS	Entropy of the **spectral** maxima (peaks)	RmNoise + maximum + entropy	none	[0:1]	Towsey 2017
EPS_KURT	Kurtosis of the **spectral** maxima (peaks)	RmNoise + maximum + kurtosis	none	[0:1]	Towsey 2017
EPS_SKEW	Skewness of the **spectral** maxima (peaks)	RmNoise + maximum + skewness	none	[0:1]	Towsey 2017
EVNspCount	Acoustic event index from an audio **spectrogram**. Number of events per s	RmNoise + threshold + count	count	*na*	Towsey 2017

Name	Description	Main operations	unit	range of values	References
EVNspFract	Acoustic event index from an audio **spectrogram**. Events duration over total duration	RmNoise + threshold + ratio	ratio	[0:1]	Towsey 2017
EVNspMean	Acoustic event index from an audio **spectrogram**. Mean events duration in s	RmNoise +	time (s)	[0:60]	Towsey 2017
EVNtCount	Acoustic event index from an audio **waveform**. Number of events per s	RmNoise + threshold + count	count	*na*	Towsey 2017
EVNtFraction	Acoustic event index from an audio **waveform**. Events duration over total duration	RmNoise + threshold + ratio	ratio	[0:1]	Towsey 2017
EVNtMean	Acoustic event index from an audio **waveform**. Mean events duration in s	RmNoise + threshold + sum	time (s)	[0:60]	Towsey 2017
H	Global entropy (Hf * Ht)	entropy	none	[0:1]	Sueur & al. 2008
HFC	Proportion of the mid frequency bandwidth of the **spectrogram** with activity above a threshold	RmNoise + threshold + sum + ratio	none	[0:1]	Towsey 2017
H_GiniSimpson	Gini Simpson spectral entropy of a **power spectral density**	entropy	none	[0:1]	Zhao 2010
H_Havrda	Gamma order spectral entropy of a **power spectral density**	entropy	none	[0:1]	Zhao 2010
H_Renyi	Alpha order spectral entropy of a **power spectral density**	entropy	none	[0:1]	Zhao 2010
H_gamma	Gamma spectral entropy of a **power spectral density**	entropy	none	[0:1]	Zhao 2010
H_pairedShannon	Paired Shannon spectral entropy of a **power spectral density**	entropy	none	[0:1]	Zhao 2010
Hf	Spectral entropy of a **power spectral density**	entropy	none	[0:1]	Sueur & al. 2008, Towsey & al. 2018
Ht	Entropy of the envelope of an audio **waveform**	entropy	none	[0:1]	Sueur & al. 2008, Towsey & al. 2018
KURTf	Kurtosis of the mean **spectrum**	kurtosis	amplitude	*na*	Ulloa & al. 2022
KURTt	Kurtosis of the audio **waveform**	kurtosis	amplitude	*na*	Ulloa & al. 2022

Name	Description	Main operations	unit	range of values	References
LEQf	Sound pressure level from a power **spectrogram**	sum	dB	*na*	Ulloa & al. 2022
LEQt	Sound pressure level from an audio **waveform**	sum	dB	*na*	Ulloa & al. 2022
LFC	Proportion of the low frequency bandwidth of the **spectrogram** with activity above a threshold	RmNoise + threshold + sum + ratio	none	[0:1]	Towsey 2017
M	Median of the envelope of an audio **waveform**	median	amplitude	*na*	Ulloa & al. 2022
MEANf	Mean of the mean **spectrum**	mean	amplitude	*na*	Ulloa & al. 2022
MEANt	Mean of the audio **waveform**	mean	amplitude	*na*	Ulloa & al. 2022
MFC	Proportion of the mid frequency bandwidth of the **spectrogram** with activity above a threshold	RmNoise + threshold + sum + ratio	none	[0:1]	Towsey 2017
NDSI	Normalized Difference Soundscape Index from a power **spectrogram** (bioPh-antroPh)/(bioPh+antroPh)	ratio	none	[-1:1]	Kasten & al. 2012
NP	Number of frequency peaks on a **mean spectrum**	count	count	*na*	Gasc & al. 2013
nROI	Number of regions of interest (ROI) above a threshold in an audio **spectrogram** (without stationary noise)	RmNoise + threshold + count	count	*na*	*This publication*
RAOQ	Rao's quadratic entropy of a power **spectrum**	euclidean distance	none	*na*	Zhao & al. 2010
rBA	BioEnergy / AnthroEnergy	ratio	none	*na*	Ulloa & al. 2022
ROU	Roughness (depends on the number of peaks and their amplitude) of the amplitude **spectrogram**	Second derivation + sum	none	*na*	Ramsay al. 2005
SKEWf	Skewness of the mean **spectrum**	skewness	amplitude	*na*	Ulloa & al. 2022
SKEWt	Skewness of the audio **waveform**	skewness	amplitude	*na*	Ulloa & al. 2022
SNRf	Signal to noise ratio computed from the power **spectrogram** (LEQf - BGNf)	sum + subtraction	dB	*na*	Ulloa & al. 2022

Name	Description	Main operations	unit	range of values	References
SNRt	Signal to noise ratio computed from the audio **waveform** (LEQt - BGNt)	sum + subtraction	dB	*na*	Ulloa & al. 2022
TFSD	Time frequency derivation from an audio **spectrogram**	temporal + frequency derivation	none	[0:1]	Aumond & al. 2017
VARf	Variance of the mean **spectrum**	variance	amplitude	*na*	Ulloa & al. 2022
VARt	Variance of the audio **waveform**	variance	amplitude	*na*	Ulloa & al. 2022
ZCR	Zero crossing rate of an audio **waveform**	threshold + derivation	count /s	*na*	Ulloa & al. 2022

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