Supplementary Material

Supplementary Table S2. The definitions or explanations of the spectral variables measured for each fish chorus in the AFCC.

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| Spectral parameters | Unit of measurement | Abbreviation | Definition/explanation |
| Minimum frequency | Hertz (Hz) | Fmin | The lowest frequency the fish chorus occupies on the power spectrum. |
| Maximum frequency  | Hertz (Hz) | Fmax | The highest frequency the fish chorus occupies on the power spectrum. |
| Peak frequency | Hertz (Hz) | Fpeak | Frequency of the maximum of the power spectrum. |
| 3 dB bandwidth | Hertz (Hz) | BW3dB | The difference between the high and low frequencies at which the power of the signal is reduced to one-half of the maximum power(Abramson, 1963): BW3dB = F3dBhigh – F3dBlow. |
| 3 dB bandwidth low frequency | Hertz (Hz) | F3dBlow | The frequency below the peak frequency at which the power of the signal decreases by half: F3dBlow < Fpeak. |
| 3 dB bandwidth high frequency | Hertz (Hz) | F3dBhigh | The frequency above the peak frequency, at which the power of the signal decreases by half: F3dBhigh > Fpeak. |
| 10 dB bandwidth | Hertz (Hz) | BW10dB | The difference between the high and low frequencies at which the power level of the signal is reduced by 10 dB: BW10dB = F10dBhigh – F10dBlow. |
| 10 dB bandwidth low frequency | Hertz (Hz) | F10dBlow | The low frequency at which the power level of the signal decreases by 10 dB from its maximum value: F10dBlow < Fpeak. |
| 10 dB bandwidth high frequency | Hertz (Hz) | F10dBhigh | The high frequency at which the power level of the signal decreases by 10 dB from its maximum value: F10dBhigh > Fpeak. |
| 20 dB bandwidth | Hertz (Hz) | BW20dB | The difference between the high and low frequencies at which the power level of the signal is reduced by 20 dB: BW20dB = F20dBhigh – F20dBlow. |
| 20 dB bandwidth low frequency | Hertz (Hz) | F20dBlow | The low frequency at which the power level of the signal decreases by 20 dB from its maximum value: F20dBlow < Fpeak. |
| 20 dB bandwidth high frequency | Hertz (Hz) | F20dBhigh | The high frequency at which the power level of the signal decreases by 20 dB from its maximum value: F20dBhigh > Fpeak. |
| Centre frequency | Hertz (Hz) | Fcentre | The centre frequency splits the spectrum into two halves of equal power. |
| Root-Mean-Square (RMS) bandwidth | Hertz (Hz) | BWRMS | The difference between the high and low frequencies of the square root of the second moment (i.e., variance) of the signal’s squared amplitude spectrum(Abramson, 1963): BWrms = Frmshigh – Frmslow. |
| RMS bandwidth low frequency | Hertz (Hz) | FRMSlow | The low frequency of the square root of the second moment of the signal’s squared amplitude spectrum. |
| RMS bandwidth high frequency | Hertz (Hz) | FRMShigh | The high frequency of the square root of the second moment of the signal’s squared amplitude spectrum. |
| 90% energy bandwidth | Hertz (Hz) | BWE90 | The width of the frequency band about Fcentre, in which 90% of the power of the signal is located. |
| 90% energy signal duration | Minutes (mins) | DurE90 | The duration during which 90% of the signal energy occurs; the difference between the 95% and 5% times on the cumulative energy curve. |
| Peak chorus band level | Band level(dB re 1 μPa²) | BLpeak | Peak band level (over the band from Fmin to Fmax) reached by the fish chorus during one chorusing event within a 24-h period. |
| Ambient level | Band level(dB re 1 μPa²) | BLambient | Minimum band level (from Fmin to Fmax) when the chorus is absent. |
| Chorus band level increase | Signal-to-noise ratio(dB) | SNR | Increase in band level (from Fmin to Fmax) when the chorus is present, compared to when it is absent: BLpeak – BLambient. |

# References

Abramson (1963). Bandwidth and spectra of phase-and-frequency-modulated waves. *IEEE Transactions on Communications Systems,* 11**,** 407-414.