Corrigendum

Acoustic masking in marine ecosystems: intuitions, analysis, and implication

Christopher W. Clark*, William T. Ellison, Brandon L. Southall, Leila Hatch, Sofie M. Van Parijs, Adam Frankel, Dimitri Ponirakis


*Corresponding author: cwc2@cornell.edu

Furthermore, on page 211, at the end of the last complete paragraph of the left-hand column, the text for item (3) has been amended for clarification as follows:

This figure illustrates several important features of communication space: … (3) the importance of RD in the calculation of SE, in that RD is negative when the summation of DI and SG is greater than DT, which leads to a situation in which the signal of interest can be recognized even when the SNR is greater than the signal’s received level, RL, (4) the influence of noise level …

Fig. 6 erroneously states that the y-axis is (171 – TL) (dB), where (171 – TL) includes the –6 dB of RD, but what is plotted is (165 – TL). We have corrected the y-axis and expanded its notation to be SL – RD – TL (dB). The result is that the sound level at which SE = 0 is the point at which the plot crosses the ambient noise level.

The corrected figure and its caption are provided below.

Fig. 6. Examples to illustrate the change in potential communication range for a low-frequency right whale call under 2 different levels of omnidirectional ambient noise (NL, shaded) and assuming SL = 165 dB, RD = –6 dB (DT = 10 dB, SG = 16 dB and DI = 0), TL = 20log[range/1m] dB for range ≤ 1 km and TL = 60 + 10log[range/1km] dB for range > 1 km: (A) NL = 81 dB, potential communication range > 300 km, area > 282 000 km²; (B) NL = 96 dB, potential communication range = 32 km, area = 992 km². The arrow in the lower right points to the level at which SE = 0. Notes: in these examples RD is –6 dB, which leads to a 6 dB increase in the effective SNR. Absorption is not a factor for the frequencies and ranges considered here.