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**Comodulation masking release in the bottlenose dolphin (*Tursiops truncatus*)**

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The power spectrum model of masking, derived from critical band or critical ratio measurements is often cited and used to extrapolate the effects of masking noise on the signal detection abilities of marine mammals. However, the power spectrum model may not generalize well to environmental noise that is often coherently amplitude-modulated across frequency regions. The current study demonstrates a pattern of masking where temporally fluctuating comodulated noise produces lower masked thresholds (up to a 17 dB difference) compared to Gaussian noise of the same spectral density level. Noise possessing wide bandwidths, low temporal modulation rates, and across-frequency temporal envelope coherency resulted in lower masked thresholds, a phenomenon known as comodulation masking release. The results are consistent with a model where dolphins compare temporal envelope information across auditory filters to aid in signal detection. Furthermore, results suggest conventional models of masking derived from experiments using random Gaussian noise may not generalize well to environmental noise that dolphins actually encounter.