

Extended amplification of acoustic signals by amphibian burrows

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© 2016, Springer-Verlag Berlin Heidelberg. Animals relying on acoustic signals for communication must cope with the constraints imposed by the environment for sound propagation. A resource to improve signal broadcast is the use of structures that favor the emission or the reception of sounds. We conducted playback experiments to assess the effect of the burrows occupied by the frogs *Eupsophus emiliopugini* and *E. calcaratus* on the amplitude of outgoing vocalizations. In addition, we evaluated the influence of these cavities on the reception of externally generated sounds potentially interfering with conspecific communication, namely, the vocalizations emitted by four syntopic species of anurans (*E. emiliopugini*, *E. calcaratus*, *Batrachyla antartandica*, and *Pleurodema thaul*) and the nocturnal owls *Strix rufipes* and *Glaucidium nanum*. *Eupsophus* advertisement calls emitted from within the burrows experienced average amplitude gains of 3–6 dB at 100 cm from the burrow openings. Likewise, the i