Conserving relics from ancient underground worlds: Assessing the influence of cave and landscape features on obligate iron cave dwellers from the Eastern Amazon

INTRODUCTION

Many organisms are adapted to live in caves, but some are so specialized that they live exclusively inside caves and never come out. These obligate cave dwellers are called **troglobites**, and some are considered relics of ancient worlds because their closest relatives have long disappeared from surface environments.

Up until now, the influence of the landscape around the caves and patterns of underground connectivity of terrestrial troglobitic communities have never been systematically assessed.

METHODS

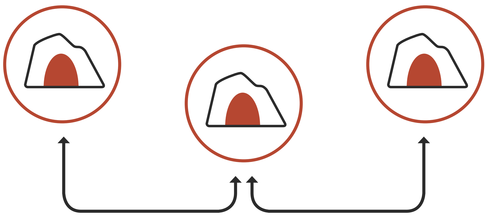
We analyzed a large database of species inventories for **473 iron caves in Brazil**, evaluating the influence of cave characteristics and the surrounding landscape on the composition and richness of these obligate cave dwellers.

RESULTS

Our results reveal that cave size and the availability of nutrients like guano (bat faeces) are **key elements that sustain cave diversity**.

Mining affected the composition of species found inside the caves, while **agriculture** in the caves' close vicinity was associated with **low species richness.**

Finally, we found that neighboring caves contain a similar species composition, a result that **suggests iron caves are somewhat connected underground**.



CONCLUSION

Our work indicates that **conservation efforts should target subterranean ecosystems as a whole**, instead of single caves.

PeerJ

Conserving relics from ancient underground worlds: Assessing the influence of cave and landscape features on obligate iron cave dwellers from the Eastern Amazon. PeerJ 4:e4531 DOI: 10.7717/peerj.4531 http://peerj.com/articles/4531/

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