

## **Title: Brazilian cave heritage under siege**

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**One Sentence Summary:** A new law allows the destruction of Brazil’s most exceptional caves.

### **Main Text:**

The current Brazilian administration led by Jair Bolsonaro has neglected environmental protection (1). Until recently, subterranean environments were largely safeguarded; although some caves could be destroyed for exploiting mineral resources or for urban development, those classified as presenting maximum cultural, geological and/or biological value had to be preserved. However, the latest presidential decree (2) allows the destruction of even those caves with maximum relevance, representing a gigantic backward step for subterranean conservation.

This new decree ignores the irreplaceable scientific value of several Brazilian caves. Researchers have documented hundreds of endemic obligate cave species, including animals with unique adaptations (3). Thousands of species still lack formal descriptions, and many more species await discovery. At least 72 bat species roost in Brazilian caves and provide critical ecosystem services such as pest control (4). The geodiversity of these caves is also exceptional, with many sites harboring rare minerals and geological formations found nowhere else (5). Finally, the multitude of archeological and paleontological cave sites across the country provide a unique record of Brazil's past.

Bolsonaro's new decree entails conceptual and procedural flaws that, by increasing extinction risks of unique species, will bring insecurity even to the Brazilian mining sector. By ignoring the intrinsic and utilitarian values of Brazilian caves, it also neglects global conservation strategies to safeguard the subterranean biome (6, 7), violates the principles of both the Federal Biodiversity Policy (8) and the Convention on Biological Diversity (9), and is not aligned with Sustainable Development Goals. The potential losses of unique species, ecosystem services, and high biotechnological potential are unpredictable. Amidst the 2021–2022 International Year of Cave and Karst, we simply cannot allow these ecosystems to be obliterated by flawed and short-sighted decrees.

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