NATIONAL GEOGRAPHIC

Tiny Spider Found Only in Azores Island Lava Tubes Assessed Urgently as 'Critically Endangered'

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A tiny subterranean spider (scientifically called *Turinyphia cavernicola*) — found only in three caves on a single island in the Azores, a mid-North Atlantic archipelago owned by Portugal — has been assessed as Critically Endangered by the International Union for the Conservation of Nature's Red List of Endangered Species. Critically Endangered is regarded as being at extremely high risk of extinction in the wild.

"These spiders never leave their underground habitats, which are strictly humid lava tubes and volcanic pits. There they build sheet webs in small holes and crevices on the walls of the caves," the science publisher Pensoft said in a news statement about the research.

THE VOLCANIC PIT ALGAR DO CARVÃO (TERCEIRA, AZORES), THE MAIN LOCATION OF THE SPECIES *TURYNIPHIA CAVERNICOLA*. CREDIT: PAULO AV BORGES

To help the arachnid as quickly as possible, scientists made use of a novel publication feature called Species Conservation Profile, created by the open access journal *Biodiversity Data Journal*, to provide scholarly credit and citation for the IUCN Red List species page, as well as pinpoint the population trends and the reasons behind them, Pensoft said.

Severe Threats

Not only is the species restricted to a single island within the Azorean archipelago, the Pensoft statement sad, but it is only found in three caves. "Furthermore, out of the three, only one of them is home to a sustainable large population. These caves are under severe threat due to pasture intensification, road construction and tourist activities."

Although there is not much information about the species distribution — the spider was discovered only eight years ago — the researchers have made the assumption that originally there were significantly greater populations, Pensoft said. "Not only have they studied thoroughly another fifteen caves located on the island without finding any individuals, but they have identified increasing anthropogenic impact on the habitat," the publisher explained.

Most of the caves were in the past covered by dense humid native forest, and forest clearence promoted changes in humidity and resource availability in cave environment, the researchers say in the Species Conservation Profile.

"The species original distribution was potentially very large compared with the current," the scientists explain. But, they add, "relatively intensive searches in and around the current caves where the species occurs have failed to find additional subpopulations."

Human Disturbance Assumed to Have Caused Spider Reduction

"The trend of decline is based on the assumption that this species can occur in all these caves and that the absence is due to anthropogenic disturbance on caves during the last 50 years," the researchers note.

"Three subpopulations are known in the island, but two of them are very small and located in disturbed lava tubes. The single large subpopulation is located in the show cave Algar do Carvão, which is under intensive pressure due to increasing levels of visitation in the last ten years.

"The large system of lava tubes in Terceira island is fragmented both naturally and artificially. Natural fragmentation is due to the occurence of several independent historical lava-flows in the island. Artificial fragmentation is due to recent destruction of caves for road construction and intensive pasture implementation. Two out of thee subpopulations are considered non-sustainable."

The IUCN - Spider and Scorpion Specialist Group and the Azorean Biodiversity Group (cE3c) at University of Azores teamed up with colleagues from University of Barcelona, Spain, and the Finnish Museum of Natural History.

Borges P, Crespo L, Cardoso P (2016) Species conservation profile of the cave spider *Turinyphia cavernicola* (Araneae, Linyphiidae) from Terceira Island, Azores, Portugal. *Biodiversity Data Journal* 4: e10274. doi: 10.3897/BDJ.4.e1027

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Forty years in U.S., UK, and South African media gives David Braun global perspective and experience across multiple storytelling platforms. His coverage of science, nature, politics, and technology has been published/broadcast by the BBC, CNN, NPR, AP, UPI, National Geographic, TechWeb, De Telegraaf, Travel World, and Argus South African Newspapers. He has published two books and won several journalism awards. He has 120,000 followers on social media. David Braun edits the National Geographic Society blog, hosting a global discussion on issues resonating with the Society's mission and initiatives. He also directs the Society side of the Fulbright-National Geographic Digital Storytelling Fellowship, awarded to Americans seeking the opportunity to spend nine months abroad, engaging local communities and sharing stories from the field with a global audience. Follow David on Facebook Twitter LinkedIn

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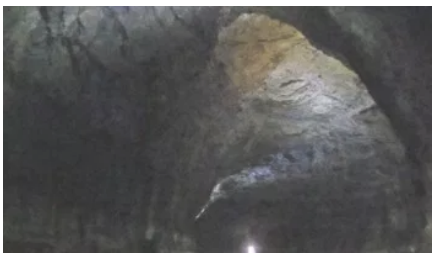

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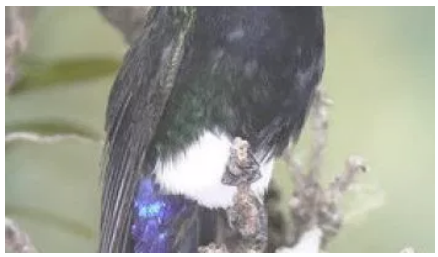

Global extinction crisis gathers momentum

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