

# The underground adventures of the Mediterranean frog *Rana iberica*

April 30 2013

---



This image shows a male *Rana iberica* climbing up the gallery wall. Credit: Gonçalo M. Rosa

Do frogs live underground? The answer is yes, some amphibians, such as salamanders and frogs have been often reported to dwell in subterranean habitats, some of them completely adjusted to the life in darkness, and others just spending a phase of their lifecycle in an underground shelter. Up until 2010, however, no one suspected that the Mediterranean anuran frog *Rana iberica* - commonly known as Iberian brown frog and usually found in streams - also participates in underground adventures. A new study published in the open access journal *Subterranean Biology* confirms the first report of *Rana iberica* reproduction in a cave-like habitat, with all life stages observed in the galleries.

[Serra da Estrela Natural Park](#)

[is located in north-central Portugal and is the largest protected area and one of the most biodiverse regions in Portugal and the](#)

[Iberian Peninsula](#). Several drainage galleries were created for water capture in the 1950s, even before the establishment of the boundaries of the Natural Park. It is namely in these artificial subterranean habitats that the Iberian brown frog was discovered dwelling underground by [biologists](#).



This image shows one of the cool humid tunnel of the drainage galleries in Serra da Estrela Natural Park. Credit: Gonalo M. Rosa

"The unusual sighting of *R. iberica* motivated a series of subsequent visits that started in 2011 up until December 2012 to understand the use of this artificial subterranean habitat by this species.", explains the lead author of the study Dr. Gonalo M. Rosa. "All life stages were observed in the gallery during the study period, particularly adults, which were observed every month of the year."

The Iberian brown frog does not only seek refuge in the drainage galleries as a sporadic visitor. During long observations, adults from the species have been noted in the galleries, often standing on the ground or

in crevices, swimming underwater or even climbing up the walls. There is evidence of mating activity, and batches of eggs have been found stuck to submerged rocks in the subterranean stream. Recently hatched tadpoles were also observed, initially remaining stationary above the egg mass for about two weeks, then swimming in the streams and feeding on the dead egg mass. The galleries are used by other amphibians as well, and larvae of the fire salamander *Salamandra salamandra gallaica* have been recorded twice while preying on brown frog [tadpoles](#).



This image shows *Salamandra salamandra gallaica* larvae recorded ingesting a *Rana iberica* tadpole. Credit: Gonalo M. Rosa

The choice of the artificial drainage gallery for a habitat of the Iberian



brown [frog](#) may appear odd initially. However, it seems that the animals find a refuge in the cool and humid tunnels, often containing a small stream. These artificial subterranean habitats are in fact often used as a refuge for many species. They are, for example, particularly important for the salamander *Chioglossa lusitanica*, an Iberian endemic of conservation concern. Scientists express their fear that such preferences for underground habitats might in fact be a sign for the ecological dangers of the dramatic climate changes experienced by the Iberian region. Monitoring the subterranean activity of various species might provide important cues for future conservation efforts.

**More information:** Rosa GM, Penado A (2013) *Rana iberica* (Boulenger, 1879) goes underground: subterranean habitat usage and new insights on natural history. *Subterranean Biology* 11: 15–29, [doi: 10.3897/subtbiol.11.5170](https://doi.org/10.3897/subtbiol.11.5170)

Provided by Pensoft Publishers

Citation: The underground adventures of the Mediterranean frog *Rana iberica* (2013, April 30) retrieved 12 August 2024 from <https://phys.org/news/2013-04-underground-adventures-mediterranean-frog-rana.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--