

LIFE IN CAVES

Currently, about 3.000 different species of animals are known from caves in Germany.

Those which enter a cave accidentally are called cave visitors (eutrogloxenes).

Other species are regularly cave-dwelling during certain times of the year - for example bats. These are subtrogliphiles.



"Cave-loving" animals (eutroglophiles) are building stable populations in subterranean habitats, but also above ground.

Of special interest are the so-called "true" cave animals (eutroglobionts), which are exclusively living belowground and which are adapted to this way of live, for example by reduction of the eyes or the loss of pigmentation.



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CAVE ANIMAL OF THE YEAR 2014



Ground waters, and thus also cave waters,
harbour a multitude of animal species.

One of these species is
Proasellus cavaticus –
the Cave Animal of the Year 2014

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Cave water hoglouse – *Proasellus cavaticus*

Proasellus cavaticus belongs to the class of the Crustaceans (Crustacea). It was first described in 1871 by the German zoologist Franz VON LEYDIG. Like many „true“ cavernicoles, *Proasellus cavaticus* is blind and lacks pigments. It seems to have only in the German language an accepted common name, „Höhlenwasserrassel“, which translates to „cave water hoglouse“. *Proasellus cavaticus* was chosen as Cave Animal of the Year 2014 because it is one of the species which can't survive outside of their subterranean habitat.

Over 60 percent of the more than 170 species of European freshwater isopods are found exclusively in the ground water. The cave water hoglice are true inhabitants of the ground water and occur exclusively in fresh water. They are found in caves, mines, and wells. Rarely, single animals are also found in springs. From ground water, they often happen to enter the water supply intakes, where they are caught in the filtering equipment. The isopods prefer water temperatures which are low and stable. The food of these animals consists of all kinds of organic material. *Proasellus cavaticus* may reach a size of 8 mm, with the males usually being somewhat smaller. Main predator of *Proasellus cavaticus* are the cave amphipods of the genus *Niphargus* (Cave Animal of the Year 2009), which are also inhabitants of the ground water.



Proasellus cavaticus with typical yellow coloration of the abdomen



Head of *Proasellus cavaticus*

Records of *Proasellus cavaticus* are known from Germany, Austria, Belgium, Great Britain, Czech Republic, France, Luxembourg, Switzerland and the Netherlands. Although the species is widely distributed, the number of known locations is rather low. This is due to the fact that to date only few comprehensive zoological surveys of the ground water fauna have been made.

In Northern and Central Germany, *Proasellus cavaticus* is to date the only cave water hoglouse recorded, whereas in Southern Germany, other species of this genus are found in ground waters as well.

Proasellus cavaticus stands for a large number of species, which are dependent on an intact ecosystem in the subterranean aquifers.

The German Speleological Federation has chosen the Cave Animal of the Year with the intention to point out the immense deficiencies in the research of subterranean ecosystems and their associated faunas.



THE CAVE AS HABITAT

For all living organisms, caves are a very special place. The most characteristic trait is the lack of sunlight.

What seems to be a disadvantage on first sight also has its merits:

- There is no danger of sunburn or desiccation, and no need for camouflage.
- Cave animals have neither to adapt to daily or seasonal cycles, unless their food source shows such cycles.
- Temperatures are uniform, with no danger of freezing.

In Central Europe, the main challenge for cave dwellers is the low food supply. Cave animals adapted to these conditions by developing a small body size, slow movements and a low metabolism.

Cave animals are very sensible to environmental changes. Therefore, a strict protection of subterranean habitats is essential.

