

Alpine newt (*Ichthyosaura alpestris*) research (Judit Vörös)

The alpine newt (*Ichthyosaura alpestris*) has isolated populations in Hungary. It is found in Órség, the Bakony Mts, the Mátra Mts, the Bükk Mts and the Zemplén Mts, living in small ephemeral or permanent ponds and pools. We study the genetic diversity of these isolated populations and compare them with other populations from Europe in order to reconstruct the post-glacial evolutionary history within the Carpathian Basin.



Alpine newt, male (*Ichthyosaura alpestris*) (photo: Judit Vörös)

Conservation genetics of the olm (*Proteus anguinus*) in Croatia (Judit Vörös, Orsolya Márton)

The olm (*Proteus anguinus*) is the only obligate cave-dwelling (troglobite) vertebrate of Europe. It lives in the underground karst system of the Dinaric Mountains. Since in most caves the research possibilities are limited, and we know very little about the distribution of this species, we need a new method to confirm the presence of the

olm. In the Laboratory for Molecular Taxonomy of the Hungarian Natural History Museum we are developing a non-invasive method based on environmental DNA, that helps to detect the olm from cave water. Our other aim is to describe the genetic diversity of different olm populations. In our study we collaborate with the HYLÁ (the Croatian Herpetological Society).



Olm (*Proteus anguinus*) (photo: Branko Jalzić)

Fire salamander (*Salamandra salamandra*) research (Judit Vörös)

The fire salamander (*Salamandra salamandra*) is a common amphibian species in Hungary. It occurs in the Soproni Mts, the Kőszegi Mts, Órség, the Visegrádi Mts, the Börzsöny Mts, the Karancs-Medves Hills, the Cserhát Mts, the Mátra Mts, the Bükk Mts, the Zemplén Mts and Aggtelek Karst. In 2008 it was rediscovered in the 2nd District of Budapest. Our aim is to describe the genetic diversity of these isolated salamander populations and to reconstruct their evolutionary history in the

Carpathian Basin. The genetic analyses are conducted in the Laboratory for Molecular Taxonomy of the Hungarian Natural History Museum. So far we have studied 350 individuals from 52 localities. Our preliminary results show that the northern Hungarian salamander populations became isolated from the Carpathian populations approximately 40.000 years ago, and from each other nearly 7,000 years ago.



Fire salamander (*Salamandra salamandra*) (photo: Judit Vörös)