European Conservation Action Network
Hungary May 2009

Introduction

On 9th May 2009, 17 of us met and piled onboard a mini bus, to emerge five days later in Northern Hungary, our home for the next fortnight. We were lucky enough to be there on a trip fully funded by the Leonardo da Vinci section of the European Union's Lifelong Learning Programme, where we would be working closely with János Toth, a PhD student studying two species of fritillary butterfly; *Melitaea telona* and *Melitaea phoebe*, and their tendency to migrate between separated habitat patches. These two species of butterfly have only recently been separated as two distinct species by Professor Zoltán Varga of Debrecen University, and it is so far unknown whether or not they are able to migrate between patches of their habitat, separated by areas of unsuitable habitat lacking in their food plant. The ability to migrate between patches would be beneficial to the species as the result would be more food available to each individual, and the opportunity to breed with individuals in other populations, therefore increasing the size of the gene pool. If the results of our surveys conclude that individuals are unable to move between habitat patches and are therefore restricted to very small areas of suitable habitat and food plant, and a very small gene pool, this implies the need for conservation efforts to produce wildlife corridors – areas of suitable habitat planted between existing patches to link them together, allowing the butterflies to move freely between patches.

The European Conservation Action Network was established in 2007 by The Kingcombe Trust, a charity based at The Kingcombe Centre in west Dorset, dedicated to conservation and environmental education (Reg. Charity no. 1054758), in association with the Dorset Branch of Butterfly Conservation. The project is funded through the Leonardo da Vinci section of the European Union Lifelong Learning Programme and has partners in France, Hungary, the Czech Republic and Poland. Further information can be obtained from www.kingcombecentre.org.uk or from Nigel Spring (tel: 0044.1963.23559; email: nigelspring@yahoo.co.uk).

The journey

We travelled overland to Northern Hungary, camping in Kent, Germany (South of Koln), Passau on the German-Austrian border, and Fertö-Hanság National Park in Hungary on the way. As well as being better for the environment than flying, this gave us the opportunity to get a feel of how far we had travelled, and see some other European countries on the way. Being packed in a mini-bus with 16 others also gave us all a great opportunity to get to know each other!

We got the ferry from Dover to Calais early on the second day after meeting, where the wildlife watching began as soon as we had left British soil, with the bird list getting off to a good start

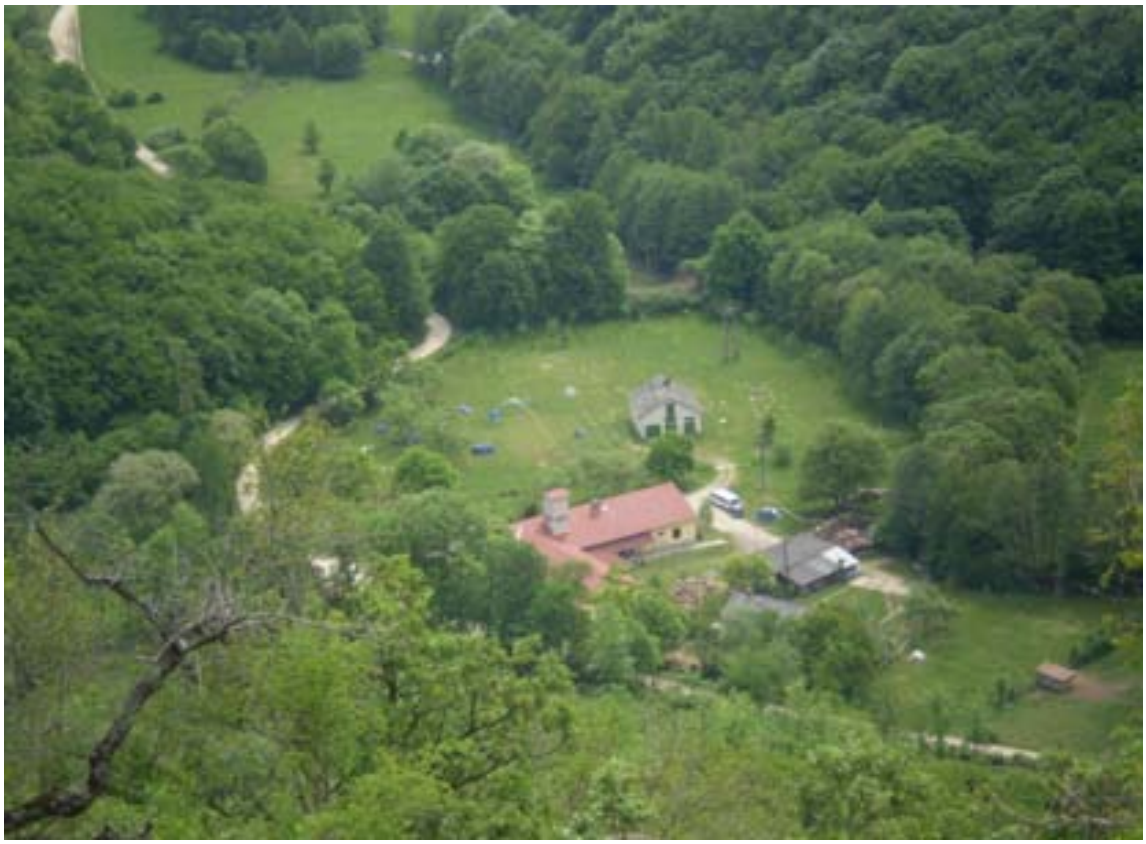
while we were crossing. Staying the night in Fertö-Hanság National Park also gave us the opportunity for some wildlife watching whilst exploring the area, where highlights included spoonbill, black-winged stilts, marsh harrier, avocet and our first white stork!

Aggtelek National Park

Aggtelek National Park was declared a UNESCO World Heritage Site in 1995. It is situated to the north of Miskolc, bordering Slovakia, and comprises an area of 20,000 hectares. It is home to approximately 1000 species of butterfly and moth, and 127 species of breeding birds. The park lies mostly on limestone formed during the Triassic, 220 – 240 million years ago, and therefore displays typical karstic features - erosion of limestone has produced fissures, sinkholes, underground streams, and caverns. The number of known caves in the Aggtelek National Park has grown over time to 262, and the total length of known passes is now 47km. Most of the caves are thought to have been formed by streams as water runs off underground, but the largest caves have been hollowed out not only by the dissolving effect of the run off, but also by the gravel that it carries, which wears the rock beds away.

So far, biologists have discovered 500 exclusively cave dwelling invertebrate species and sub-species in the Aggtelek caves, 38 of which were new to science. Bats can also be found in the caves, which they use to roost – 21 out of the 28 bat species found in Europe can be found here.

We were staying in Szálámándrá Haz just outside the village of Szögliget, 15km south from the Slovak border, which used to be the old border post. Staying in dorms of 2 – 4 people, this was a fantastic place to stay, with beautiful Hungarian countryside on our doorstep, and wonderful Eszter who cooked for us every day and made sure that we never went hungry!



Szálámándrá Haz

The work

We were assisting János with mark and recapture work on *M. telona* and *M. phoebe*. Each day we were separated into groups of two – three people, and given separate study sites. Each study site was identified by a different letter. We searched for our target species in our study site and, using butterfly nets, caught them. If they were definitely *M. telona* or *M. phoebe* we carefully used marker pens to mark on their wings the letter indicating the study site that individual had first been caught in, and a number to distinguish between individual specimens. This was delicate work and involved gently holding the butterflies by their abdomen while marking their wings. We recorded details of species, letter, number, gender and activity (i.e. feeding, flying, mating) of each specimen and then let them go. After the first couple of days, we started to recapture butterflies which had previously been captured either on that site or elsewhere, which enabled us to see whether or not they had been migrating between patches, and if so, how far they had travelled. This work also provided an indication of population size of both species.

It was important to be accurate when identifying the butterflies caught as either *M. telona* or *M. phoebe*, as the visual differences between them are very small:

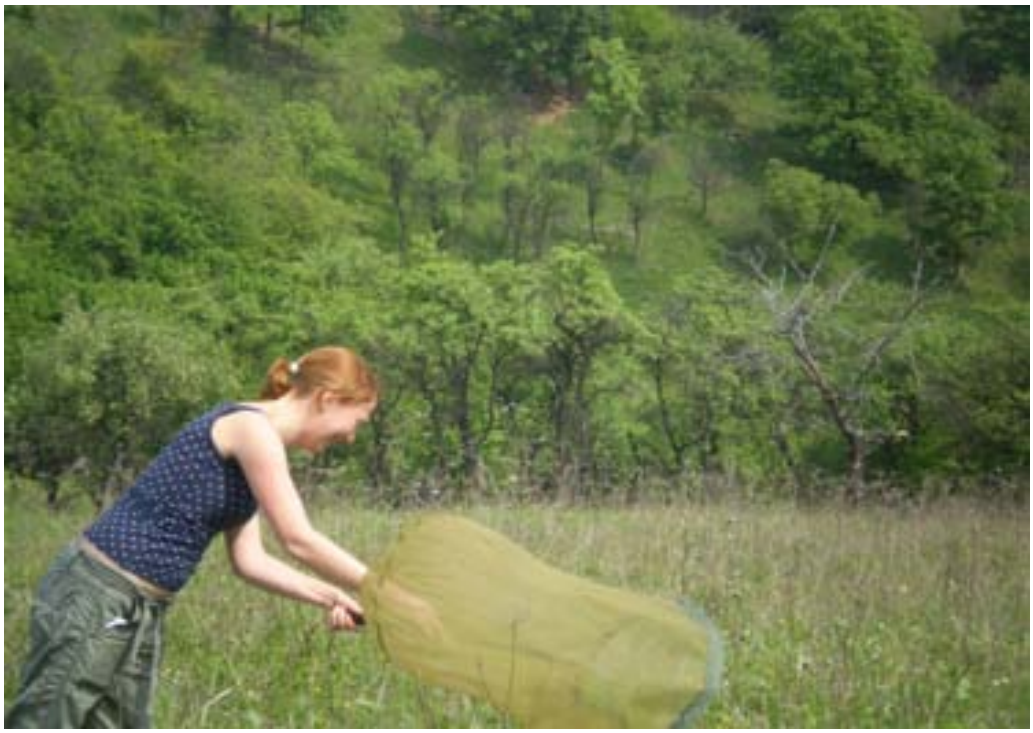
- The tip of the antennae is more elongated in *M. phoebe*

- The tip of the forewing is more elongated in *M. phoebe*
- The light stripe on the hindwing is more asymmetric on *M. phoebe*
- The forewing of *M. phoebe* is slightly concaved along the edge

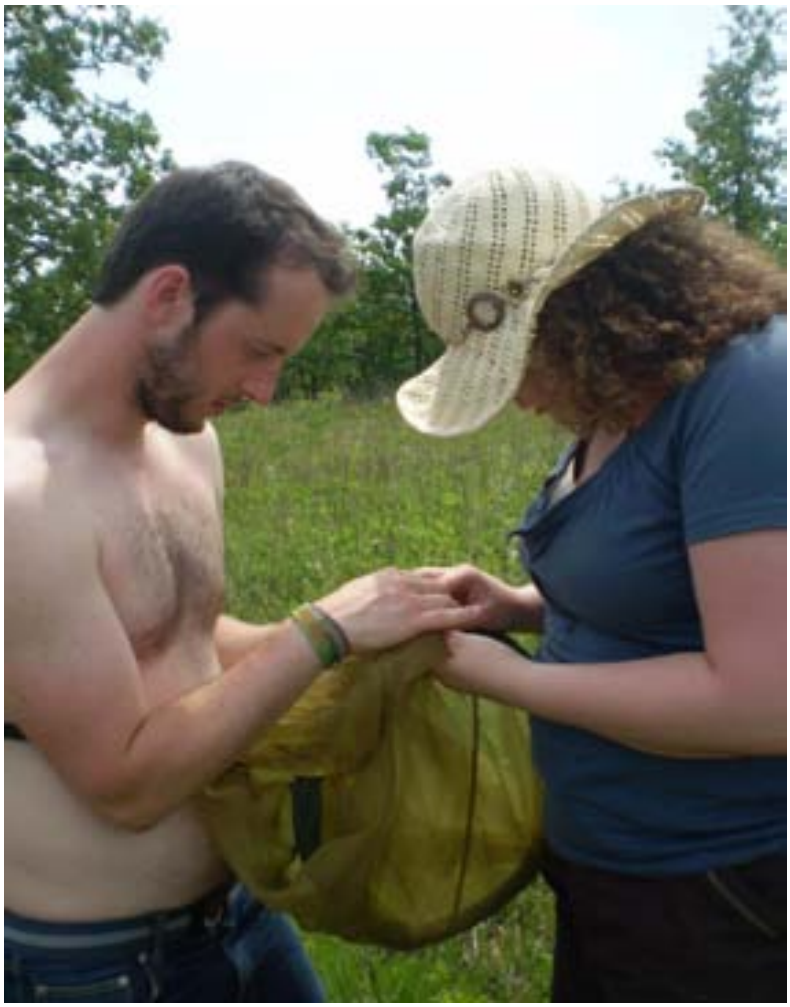
If we find from our survey work that butterflies are not restricted to one small area of habitat, this indicates that there is exchange of genetic material between several small populations in an area, which is advantageous in terms of the species ability to evolve.

The areas that we were surveying in can be divided into two large populations, divided by a river, which is a strong barrier for them to cross. We can therefore analyse data on two levels: movement within sites and movement between sites.

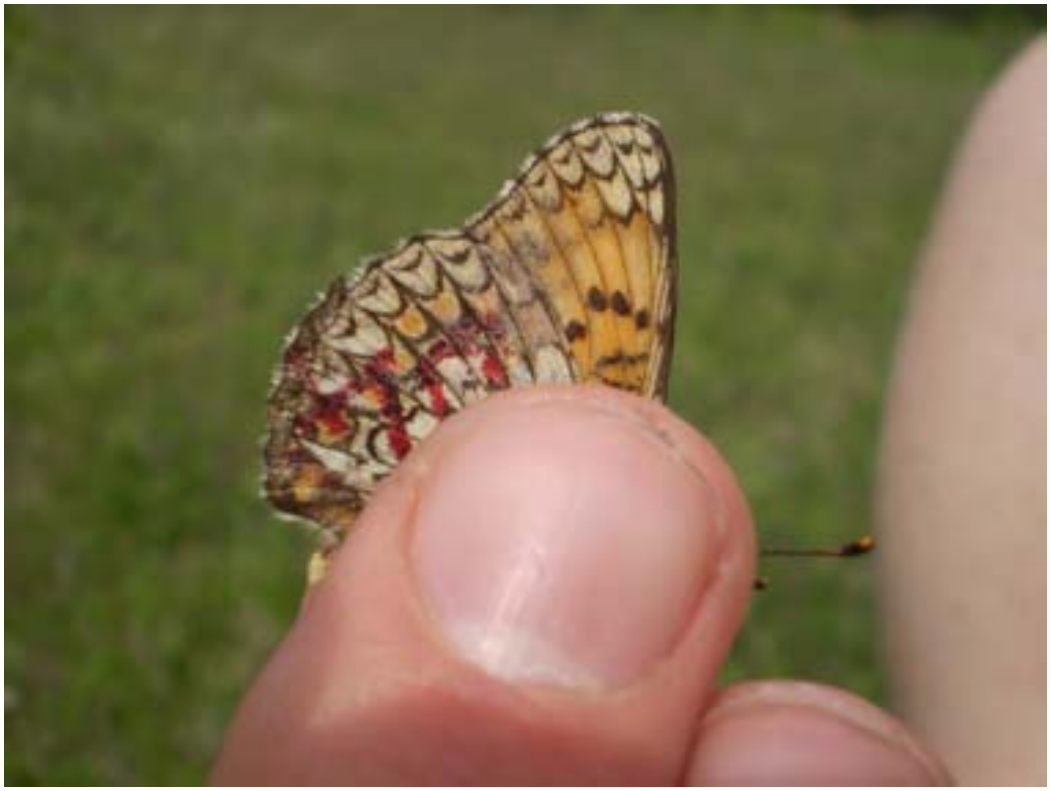
By the end of the fortnight we had marked between us 138 *M. phoebe* individuals, and 315 *M. telona*. 70% of butteflies caught were therefore *M. telona*, and it is believed that the sample sizes were large enough that this is a reliable indication of the actual difference in population numbers between the two species. The migration rate of the two species was found to be the same, whereas predictions had been that *M. telona* would be more sedentary than *M. phoebe*. This is an encouraging result as it means that *M. telona* is able to move to find more food, and exchange genetic material. The number of males captured decreased during the two weeks, whereas the number of females captured increased. This was expected, as males tend to emerge first to ensure that they are available and ready to mate when the females emerge.



Testing the butterfly net



Identifying the species



Marked specimen

Exploring the local area

Part of the Leonardo da Vinci funding involved putting money back into the community, and therefore supporting the village and local area that we were staying in. We were lucky enough to have two trips into the famous caves of the Aggtelek region, and they provided very different, but both fantastic, experiences. The first cave we visited was the Rákóczi cave, one of the more un-commercialised caves, where the tour involved slipperly walk ways and climbing up and down several ladders. The inside of the cave was stunning and we learnt how the different features in the cave were formed and how the iron ore industry had discovered the cave by accident. Our second cave visit was a guided walk through the more touristy Vőrős-to Cave, which caters for visits by large numbers of tourists every day, and ended in a light show accompanied by music – not to everyone's taste(!) but there was no denying that the caves themselves were spectacular.

Rákóczi cave

On a free day we had, myself and 4 others borrowed bikes from Szálámándrá Haz and cycled across the border to Slovakia (unfortunately to find that Slovakia appeared to be closed for

business, with no life to be found in either of the two villages that we visited!). On the way we visited Derenk, a Polish village that was established in 1717 and depopulated between 1938-1943, so that the surrounding area could be used as hunting grounds by the Govenor at that time, Miklós Horthy. Now Derenk is a monument village within the territory of the Aggtelek National Park, with a free museum in the only remaining building, the village school.

Cycling to Slovakia: made it to the border!

On our final day a group of us went for a ride on the native Hucul ponies through streams, woods and grasslands around Jósvafő, and then finished the trip with a carriage ride around the village, which gave us the opportunity to see parts of the village that we had not explored.

The wildlife

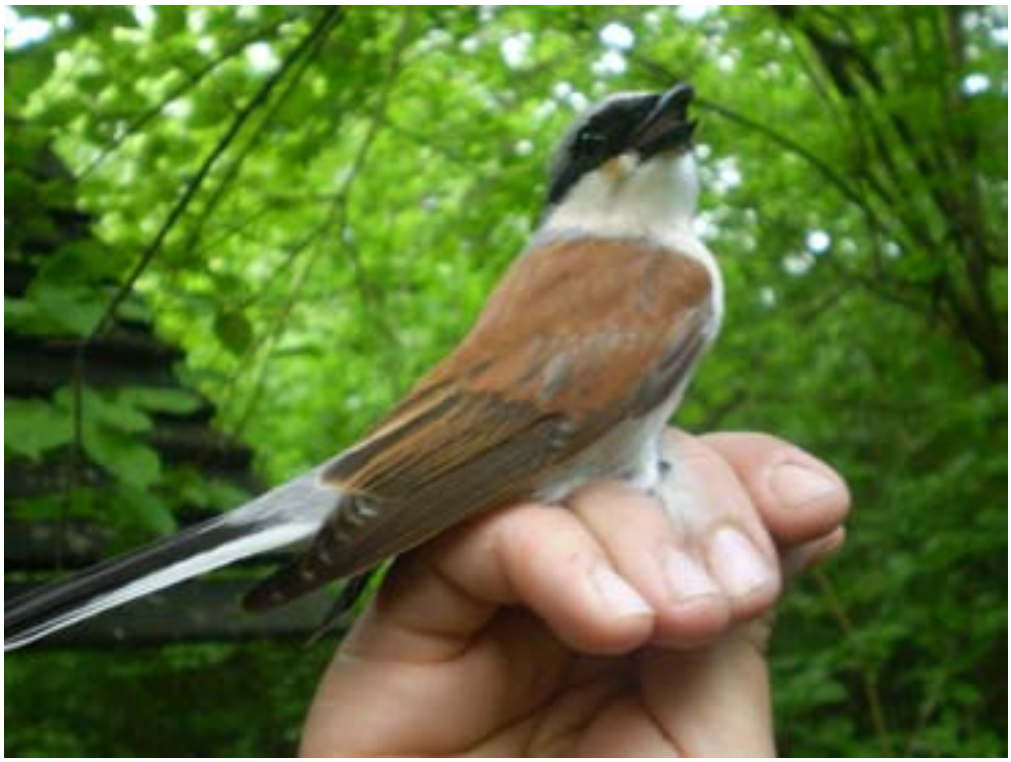
As well as butterflies, the Aggtelek region is packed full of amazing wildlife, and we were extremely lucky throughout our trip in terms of the variety of fantastic species we managed to see.

One evening Sandor Boldogh, the Director of conservation in the National Park took us up into the attic of Szálámándrá Haz where there are large numbers of lesser horseshoe bat roosting. We then walked up the track to a stream where Sandor had hung a mist-net, and were able to get close up views of several species of bat, including greater horseshoe, noctule and serotine. That very same evening also heard corncrake calling – the first time I had ever heard them.

One evening we were given a talk by Adam Szabo about his work on wolves, lynxes and bears in Aggtelek National Park. This was followed by a wolf-tracking walk a few days later, where we found evidence of wolves including the remains of a deer that had been killed by a wolf a few days earlier, and wolf faeces which seemed to mainly consist of hair from its prey! Even just seeing these small bits of evidence that wolves had been there was exciting, to think that they had been in the exact same spot that we were standing in, possibly just hours earlier.

The birdlife that we saw throughout the trip was amazing, including many species that are extremely rare in the UK such as turtle doves. Some of the highlights included three young fluffy tawny owls perched up in the trees by the Martonyi Monastery, an amazing view of a ural owl as it flew right across our path during our cycle ride to Slovakia, the white storks who build their nests high above peoples heads on the top of electricity pylons in the villages, and the fantastic moment when we visited a bee eater colony – not only was it my first sighting of bee eaters, but just as I raised my binoculars to have a closer look, a golden oriole flew into the same tree! Amazing!

One morning I was lucky enough to be asked if I would like to join Roland Farkas, a member of the Aggtelek National Park scientific staff, while he went bird ringing. The answer was a definite yes, despite the 5am start! So myself and two others were up at the crack of dawn to meet Roland, and together we headed to his study site. The site was a constant effort site, which is where ringers operate the same nets in the same locations over the same time period at regular intervals through the breeding season. This was a fantastic opportunity as it allowed us to see the birds caught in the mist nets birds close up, and even carefully hold a few of them. We trapped red-backed shrike (male and female), barred warbler, tree sparrow, long-tailed tit, robin and great tit.

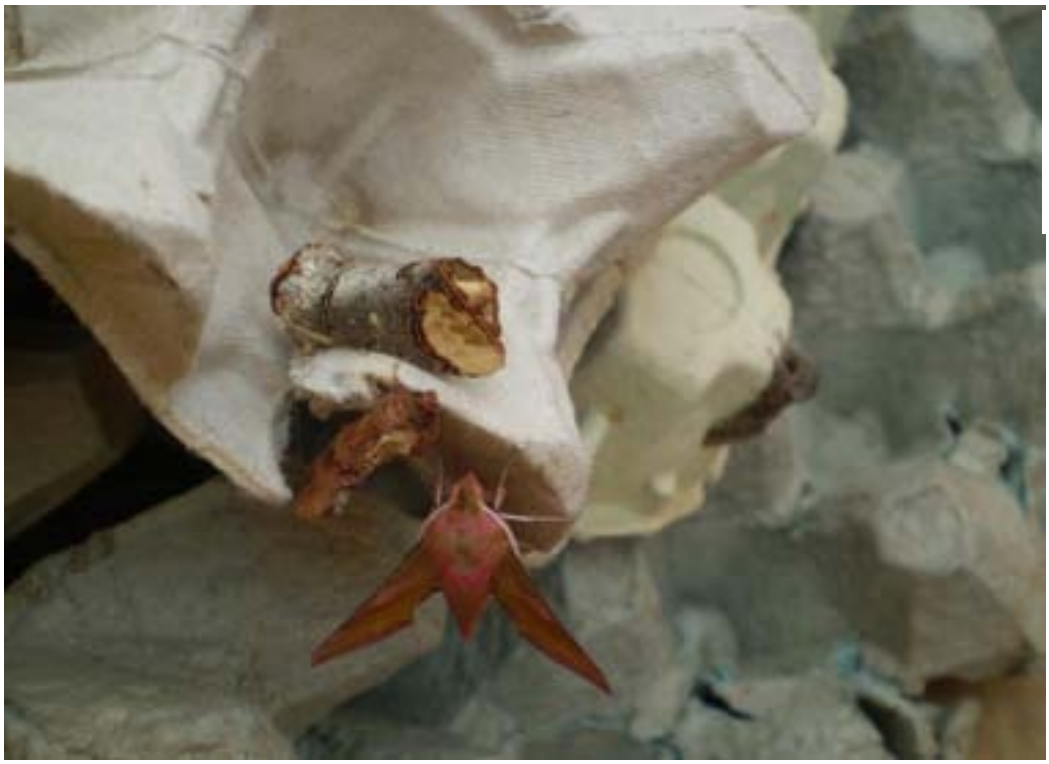


Bird ringing: male red-backed shrike

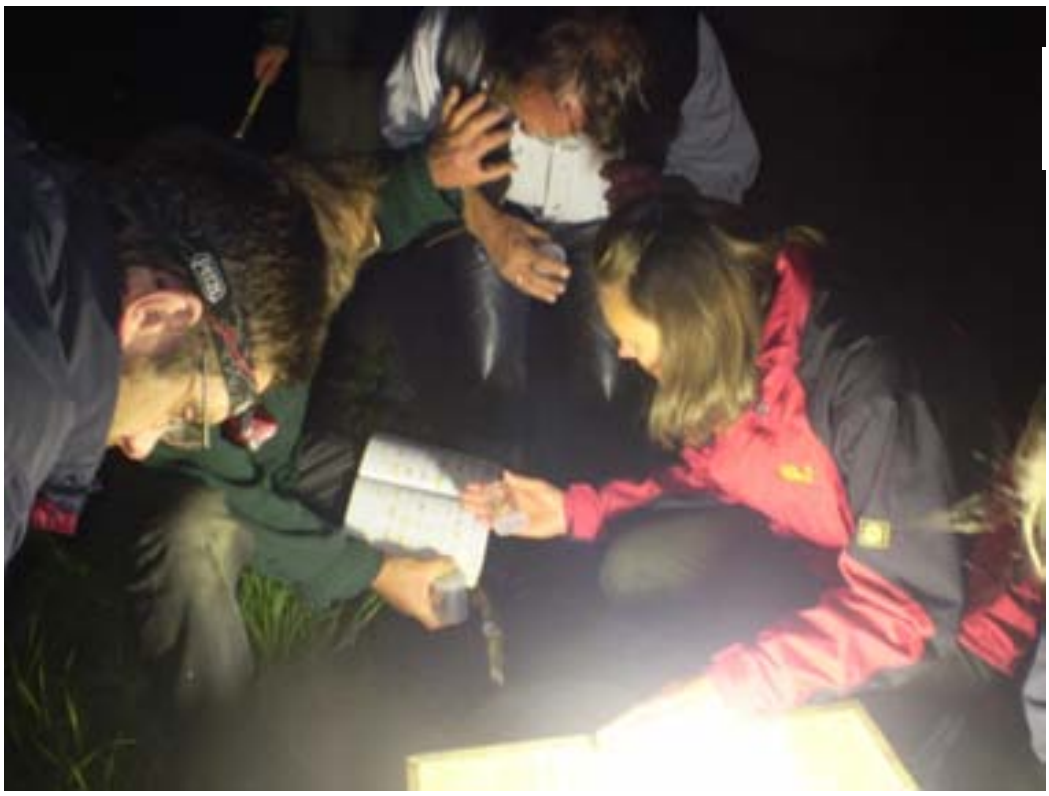
Bird ringing: Long-tailed tit

Throughout the trip we regularly set-up the moth trap in the evening, and we all became addicted to checking the trap in the morning to see how many moths we had caught, and how

many we could identify. The highlight for most of us was undoubtedly the giant peacock, Europe's largest moth, reaching up to 15cm in wingspan. We also caught several hawk-moths including lime, elephant, small elephant and poplar.



Buff-tip moth and elephant hawk-moth



Identifying the moths in the trap

In conclusion, this was a fantastic opportunity and I feel so lucky to have been chosen to go on the trip. I met some fantastic people, saw some amazing wildlife and learnt so much about Hungary and its wildlife. Thank you to Nigel, Kathy, and Leonardo!