Report on

SER EUROPE – Eurosite SUMMER SCHOOL ON ECOLOGICAL RESTORATION

Best practice in management and restoration of European dry grasslands

August 20-24, 2018

21 participants from 13 countries attended the summer course held by the MTA Centre for Ecological Research under the auspices of SER Europe and Eurosite. Most participants (11) were students (from bachelor to PhD) or young researchers, but 3 professors and 7 practitioners also joined the 2018 SER Europe-Eurosite Summer School from 20th August to 24th August. The countries represented include mainly Europe (Belgium, Croatia, Finland, France, Germany, Latvia, Poland, Slovakia and Portugal), but also China, Ecuador and Brazil.

The program included both theoretical aspects and practical issues related to the state, threats, management and restoration of dry grasslands with a special focus on Natura2000 areas in an intensive five day program. Starting with some **introduction** on August 20th the greatest national holiday for Hungarians, the summer school opened with fireworks along the Danube in Budapest. The second day was dedicated to lectures on the present state of dry grasslands (Monika Janišová, SK) , the major threats, such as climate change (Sándor Bartha, H) and invasive species (Johannes Kollmann, D) and possible management especially by seeding (Ivana Jongepierova, CZ). Anna Varga (H) talked about possibilities of including traditional knowledge into management and restoration, and Szabolcs Lengyel (H) summarized the responses of different animal groups to large-scale restoration in the Hortobágy.

The lecture day was followed by **three days of field trips** in different types of dry grasslands characteristic to Hungary. Each day begun with lectures that connected to the field visits. In the **Fülöpháza Sand Dunes** we visited the remaining semi-natural grasslands with the last moving sand dunes, abandoned fields, some restoration sites and **Exdrain**, an intensive experiment to study the impact of climate change on vegetation. They study the impact of a single extreme drought combined with long-term chronic precipitation change (four levels: 2-month drought / 1-month drought / control / irrigation) on dry grassland. Till now, the results suggest that some ecosystem functions may recover very fast after extreme events, even if composition remain very different.

The most prominent program based on feedback from participants was the visit to **kurgans**, ancient burial mounds in the **Hortobágy region** with loess grasslands in more or less degraded or restored state. Kurgans were built by ancient cultures (mostly by the Yamnaja culture) during the Eneolitics (3500-2500 BC). Their height ranges between 0.5-15 metres and their area is generally less than 1 hectare. Despite their small size, kurgans often act as biodiversity hotspots and harbour many red-listed species. In Hungary, kurgans are generally embedded in agricultural fields, act as refuge for grassland species. Restoration measures involve seed sowing or hay transfer, elimination of woody species and establishment of seminatural grassland buffers around the kurgans in order to reduce the negative effects received from the neighbouring agricultural fields.

The second top listed program was in **Zámolyi-medence Natura 2000 site**, where the landowner demonstrated dolomite grassland restoration and management, and took the participants to a Hungarian safari with buffalo and water birds. They consider buffalo as the best working staff of their NGO that control invasive species and create habitat diversity. The NGO creates a proper and sustainable grassland management technology that serves the preservation of Natura2000 habitats and species and also for the livelihood of local human population.

Check here the program and the course presentations for more information.