SUMMER SCHOOL OF KARST AND SPELEOLOGY
(interdisciplinary scientific camp in the Kraków-Częstochowa Upland, within the International Year of Caves and Karst 2021)

The first Summer School of Karst and Speleology was held on the 12th – 30th of July. It was organised by the University of Wrocław (Faculty of Biological Sciences, Faculty of Earth and Environmental Sciences, Faculty of Biotechnology), Silesian University (Faculty of Natural Sciences) and the Foundation Nature and Man, in three one-week periods in Olsztyn near Częstochowa.

The participants were biology and geology students – 17 (Wrocław University), geography students – 4 (Silesian University), geology students – 2 (Jagiellonian University), geography teachers - 4, civil servants - 2, guides - 1, speleologists and private persons - 4.

We managed to realise the planned programme which was divided into three thematic blocks:

- **Palaeozoology and archaeology**

  During the course the participants could get familiar with practical methods of palaeontological and archaeological research, obtaining, documenting, cataloguing and describing collections and specimens. Problems of the evolution of the fossil fauna of Poland in the Neogene and Quaternary, stages of colonisation of karst areas of Poland by humans from the Palaeolithic till historic times, taphonomic mechanisms of accumulation of animal and plant remains in caves were discussed.

- **Geology and geomorphology of caves and karst, protection of karst forms**

  As in the case of the palaeontological-archaeological block, the participants were introduced into methods of research of geomorphology and geology of caves and karst areas, as well as methods of spatial data processing with free GIS software. The course included geological-geomorphological mapping using the numerical terrain model LiDAR. Geophysical measurements were taken using 2D electro-resistant tomography and georadar, in order to visualise the structure of limestone outcrops and possibly detect
unknown karst voids. Processing of the obtained measurement data in order to visualise the geophysical background was demonstrated.

Problems associated with karst and cave phenomena formed a very important part of the course. The participants were introduced into methods of speleological research aimed at recognising the process of origin and evolution of caves and relief of karstic areas; they visited localities in the Towarne Mts. and within the Castle Hill.

An equally important part of the workshop was devoted to active and passive protection of karstic areas; it was demonstrated how to preserve the unique character of deforested limestone hills using conservative breeds of farm animals (sheep and goats) and wild animals.

The course was run by prof. Krzysztof Stefaniak, prof. Adrian Marciszak, dr. Urszula Ratajczak-Skrzatek (Palaeozoology Department, Wrocław University), prof. Paweł Mackiewicz (Faculty of Biotechnology, Wrocław University), dr. hab. Marek Kasprzak, dr. Artur Sobczyk (Faculty of Earth and Environmental Sciences, Wrocław University), dr. Andrzej Tyc (Faculty of Natural Sciences, Silesian University), mgr Marceli Ślusarczyk, dr. Mikołaj Urbanowski, mgr eng. Maciej Florys (Foundation Nature and Man).

In the opinion of both organisers and participants the initiative was successful and should be continued in the future.

We would like to express our sincere thanks to the authorities of the Faculty of Biological Sciences an the Faculty of Earth and Environmental Sciences, Wroclaw University, and to the vice-rector for student affairs of the Wroclaw University, dr. hab. Tomasz Kalisz, for their financial support for the students, and to dr. Patrycja Cicha for her organisational-administrative help.