

The Metamorphosis Life Project Inventory and monitoring of butterflies in ten Natura 2000 sites

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Abstract: Fundatia ADEPT, in collaboration with the Romanian Lepidopterological Society, is a partner in the international LIFE Metamorphosis project “Developing best practices in butterfly conservation in Central and Eastern Europe” (LIFE21-NAT-SK-LIFE Metamorphosis/ 101074487). The project will be implemented between 2022 and 2029 in three EU member states: Slovakia, Hungary, and Romania. The main goal of the project is to conserve 15 protected species of diurnal butterflies included in Annexes II and IV of the Habitats Directive. The coordinator for Romania is Fundatia ADEPT.

In Romania, the most laborious activity in the first three years of the project is the inventory and mapping of butterflies in ten Natura 2000 sites included in the project: ROSCI0227 Sighișoara-Târnava Mare (89264.88 ha), ROSCI0323 Munții Ciucului (60044.99 ha), ROSCI0253 Trascău (49963.47 ha), ROSCI0295 Dealurile Clujului de Est (19622.88 ha), ROSCI0238 Suatu - Cojocna – Crairât (4157.70 ha), ROSCI0427 Pajiștile de la Liteni – Săvădisla (2424.65 ha), ROSCI0074 Făgetul Clujului – Valea Morii (1686.42 ha), ROSCI0439 Valea Chiurușilor (1245.22 ha), ROSCI0035 Cheile Turzii (326.40 ha) și ROSCI0274 Agârbiciu (240.81 ha).

During 2023-2024, the activities were implemented by three teams of two people each. The teams were coordinated by Prof. Dr. László Rákosy, Drd. Tibor-Csaba Vizauer, and Drd. Mihai Pop, respectively. The working protocol included 52 transects with a length of 500 m, covered monthly between May and July. After completing each transect, lepidopterofaunistic observations continued on a freely chosen route, approximately 1.5 km long. The species protected by the Habitats Directive that were mapped and inventoried were: *Colias myrmidone* (Agârbiciu, Munții Ciucului, Valea Chiurușilor); *Euphydryas aurinia* (Munții Ciucului, Sighișoara-Târnava Mare, Trascău, Valea Chiurușilor); *Euphydryas maturna* (Cheile Turzii); *Leptidea morsei* (Dealurile Clujului de Est, Munții Ciucului), *Lopinga achine* (Munții Ciucului, Sighișoara-Târnava Mare, Trascău); *Lycaena dispar* (Munții Ciucului, Sighișoara-Târnava Mare, Trascău, Valea Chiurușilor); *Parnassius mnemosyne* (Dealurile Clujului de Est, Trascău); *Phengaris arion* (Cheile Turzii, Munții Ciucului, Sighișoara-Târnava Mare, Trascău, Valea Chiurușilor), *Phengaris nausithous* (Dealurile Clujului de Est); *Phengaris teleius* (Dealurile Clujului de Est, Munții Ciucului).

We collected data on the distribution of the following protected species of national interest: *Arethusana arethusana* (Trascău); *Argynnis laodice* (Sighișoara-Târnava Mare); *Boloria titania transsylvanica* (Munții Ciucului, Valea Chiurușilor); *Coenonympha tullia* (Munții Ciucului); *Cupido osiris* (Dealurile Clujului de Est, Munții Ciucului, Sighișoara-Târnava Mare, Trascău); *Erebia melas runcensis* (Trascău); *Eumedonia eumedon* (Munții Ciucului, Trascău, Valea Chiurușilor); *Heteropterus morpheus* (Sighișoara-Târnava Mare, Trascău); *Lycanea hippothoe* (Munții Ciucului); *Muschampia tessellum* (Dealurile Clujului de Est); *Neptis sappho* (Dealurile Clujului de Est, Munții Ciucului, Sighișoara-Târnava Mare); *Phengaris alcon* (Dealurile Clujului de Est, Munții Ciucului, Sighișoara-Târnava Mare, Trascău).

In total, 119 species and 20,989 individuals were recorded in 2023, and 127 species and 21,284 individuals in 2024. All results are included in a project database, which currently contains over 7,000 records with more than 42,000 individuals.

Various measures have been proposed to protect and conserve valuable habitats, such as: optimizing livestock numbers on pastures, removing invasive plants *Pteridium* sp., *Robinia pseudoacacia*, *Betula* sp., *Asclepias syriaca* etc.

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