

Demographic and functional study of *Coenonympha tullia*

(the Large Heath or common ringlet)

Call for volunteers

We are looking for partners/volunteers to participate in the "movement and search for dispersing individuals" part of a CMR study on the Large Heath (*Coenonympha tullia*) in the Jura Massif in France. As dispersal of individuals is a rare event, we propose to external persons to participate in the survey effort to increase the probability of detection of this phenomenon. Several missions will be proposed to the participants:

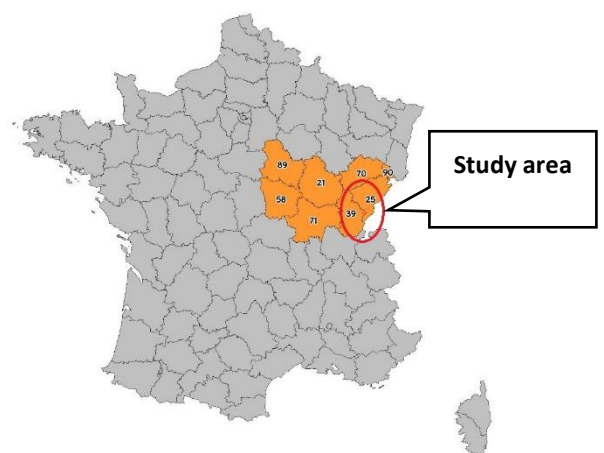
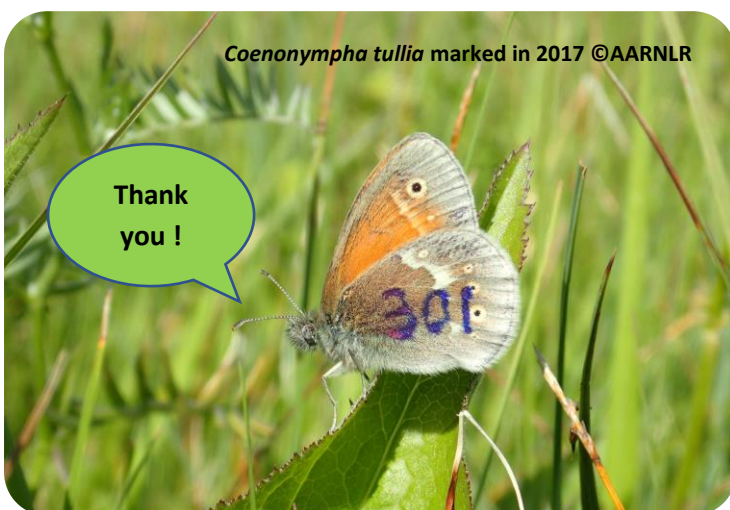
- **To follow individuals already marked** and study their movement within the study site and peripheral habitats.
- **Search for individuals** in targeted habitats **around the study site**.
- Other ideas, under consideration...

Availability: During the flight period of *Coenonympha tullia* which lasts the whole month of June (varies according to the year). Hours of operation: 9am to 4pm (approx.).

Volunteers/partners will be supervised by an employee of the association providing the study. A briefing of the missions to be carried out will be presented with the protocol to be followed, the study areas and the loan of the necessary equipment. Lunch will be taken care of and participation in the accommodation possible.

If you are interested or would like more information, please contact and register with Romain Decoin, study manager, entomologist in the association providing the study - 03 81 69 78 23 or email: romain.decoin@espaces-naturels.fr

Poachers abstain!



1. Context of the study

The Large Heath, *Coenonympha tullia* (Stichel, 1908) is a species protected by the ministerial order of 23 April 2007, considered according to IUCN criteria as vulnerable (VU) in Europe and France, and endangered (EN) in Franche-Comté. It depends on habitats listed in Annex I of the Habitats Directive: alkaline and acidic marshes; in good hydrological status.

The study site is an area with a very **strong local responsibility** for the conservation of this species. The populations are in a fragile state of conservation, as is the case for the species on a regional scale.

The first elements of the genetic study in progress show that the area appears to be a zone where populations are **little differentiated** from one another, with very small genetic distances - and therefore **large gene flows** between these different populations. The **temporality** of these exchanges has not yet been investigated, however this result raises questions about the butterfly's real dispersal capacities and the role of the landscape matrix in the movements.

2. Study area

The study area, located in the Jura massif, is home to **small populations** of Large Heath, within mosaics of wetland habitats, for much community interest. These populations are spaced at presumed functional distances (Bernard *et al.*, 2018).

A demographic study has already been carried out in 2017, as part of "Des ailes pour les tourbières du Jura" programme, on a large population in the Jura Massif. Here, studying **lower density populations** could provide additional elements for a better understanding of the ecology of this species. It should also be noted that the majority of Large Heath populations in the peat bogs of the Jura massif are in this category.

General framework :

- Multi-partner project "Ailes pour les tourbières du Jura" which aims in particular to better define the **ecological requirements** and to characterise the **exchanges between *C. tullia* populations**.
- **CMR test** in 2017 on *C. tullia* in a nearby site with the largest population in France.
- Genetic study in progress on the whole of the Jura massif
- **Recent vegetation mapping** of the study site

3. Objectives of the study

The overall objective of this study is to improve knowledge of the influence of the environment on the **spatial and temporal dynamics** of *Coenonympha tullia* populations in the study area; to think about the necessary **connectivity** between habitats favourable to the dispersal of the species.

The lines of work envisaged concern: the study of the demographic parameters of the populations; the typology of habitats used, in particular for travel; the search for corridors and secondary habitats; the qualification of the functioning between the two populations; and the search for potential connections with neighbouring populations.

4. Planned method

The method planned for this purpose is **capture-marking-recapture** combined with a sustained **search for dispersing individuals**.

5. Similar study :

<https://www.researchgate.net/publication/329269907> Etude expérimentale du Fadet des tourbières *Coenonympha tullia* sur une population du bassin du Drugeon 25