We studied inter-patch dispersal and effective population sizes of the specialist butterfly *Maculinea alcon* with microsatellite markers to provide guidance for management of endangered populations.

Despite the very sedentary behavior of the *Alcon Blue*, we found relatively high numbers of putative first-generation migrants. For the Belgian locations, 7 butterflies (6.7%) were putative first-generation migrants. These were all found within the Valley of the Zwaarte Beek where 4 populations form a metapopulation. Other Belgian locations were geographically and reproductively isolated. They are genetically differentiated with relatively high pairwise FST values over short distances of only a few kilometers. For several populations, a genetic bottleneck is suggested. When reliable estimates of the effective population size were obtained (LDNe-method, program NeEstimator v2.), they were extremely small, ranging from 3.2 to 17.6. A few first-generation migrants (3/191 or 1.6%) were also detected between local populations at the studied sites in the Netherlands. The relatively low numbers of putative migrants detected here, compared to the one of the Zwaarte Beek, are likely a result of the assignment criterion used (L_home) and the corresponding lower power to identify migrants when not all source populations for immigrants are sampled (Paetkau, 2004). We observed maximum dispersal distances of 3 km, which are much larger than the maximum recorded movement in mark-release-recapture studies (0.5 km) and still larger than the maximum dispersal distance of 1.7 km that has so far been recorded from spontaneous colonization data.

Our findings indicate that the viability of a population may depend on demographic-genetic rescue from surrounding populations (at < 3 km). It is therefore important to take metapopulation dynamics into account during reserve design and management. However, the limited dispersal capacity and restricted gene flow between populations may provide a greater potential for coevolution of mutualistic and parasitic interactions between the *Alcon Blue*, its host plant and its host ants.