

Note on the presence and distribution of *Parnassius apollo pumilus* Stichel in Aspromonte

Francesco Manti¹, Elvira Castiglione¹, Filippo Fabiano², Carmelo P. Bonsignore¹

¹ Entomology and Applied Ecology Laboratory, PAU Department. Mediterranean University of Reggio Calabria, Italy; ² Natural History Museum, Zoology Section “La Specola”, Florence, Italy

Parnassius apollo (Linnaeus) is a butterfly belonging to the Papilionidae family which has specific ecological characteristics, particularly regarding the trophic needs of the larvae that induce its preference for xerophytic mountain microenvironments, where the caterpillars feed on Crassulaceae belonging to the *Sedum* and *Sempervivum* genera. It is considered an "umbrella species" because its conservation allows the protection of a wide range of species coexisting in the same habitat, which are less known and therefore more difficult to protect. For the same reason, *P. apollo* can be a good bioindicator whose status provides information on the general conditions of the entire ecosystem; in particular, it appears to be a sensitive indicator of environmental quality in the monitoring of xerothermic biotopes at risk of disappearing. It also shows high intra-specific variability due to the distribution of its populations in isolated habitats. It is linked to medium and high-altitude sunny environments with abundance of outcropping rock and occurs in Italy from 400 to 2.500 msl, although it is by far more frequent above 1.000 msl. This species, which requires peculiar climatic conditions (cold winter, sunny summer), as well as open spaces (with a low shrubs cover) and a large surface of meadows, has a habitat characterized by high-altitude sites, where it prefers open areas and flowery valleys, but also rocky slopes. As well as other species within its genus, it is vulnerable due to the isolation of its populations produced by the last ice age, but in the places where it is present it is quite common. The range of the species is gradually decreasing throughout the European territory. In Italy it is quite common in the Alps. On the Apennines its presence is more sporadic, being absent in large sectors, showing, locally, a more or less marked degree of decline. In Calabria it is present in Aspromonte with the subspecies *pumilus*, also reported on the Sila massif, although currently it is quite legitimate to assume that the population present on Monte Botte Donato (CS) has become extinct; in fact, *P. apollo* is a steppe species, so it is possible that the Silane population has shrunk and eventually become extinct due to bioclimatic changes locally tending towards mesophilic regimes or because of other unknown factors. This work is based on the sightings of the butterfly occurring in the studies conducted by the entomologists of the LEEA during their years of research on the Aspromonte arthropods fauna, which allowed the creation of a distribution map based on the real presence of the species and on the identification of potential areas having the characteristics of suitable habitats for hosting it.

KEY WORDS: *Parnassius apollo*, Aspromonte, distribution.