Genetic diversity of orchid *Malaxis monophyllos* over European range as an effect of population properties and postglacial colonization

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**INTRODUCTION**

In the northern hemisphere, climatic oscillations during the Quaternary Period produced significant changes in species distribution (Taberlet *et al.* 1998, Hewitt 2004, Parmesan 2006), which resulted in the repeated expansion and fragmentation of species’ ranges and influenced their genetic diversity patterns. Cold-adapted plants (arctic and boreal) are believed to have been more severely threatened during the Quaternary Period than other plant groups (Comes and Kadereit 1998, Davis and Shaw 2001, Alsos *et al.* 2012, Eidesen *et al.* 2013). Moreover, the climate scenarios that predict future geographic distributions of northern species in Europe revealed further disadvantageous changes; by the end of the 21st century, the majority of these plants’ ranges will shrink and shift northwards and to higher altitudes, into the probable warm-stage refugia (Bhagwat and Willis 2008, Gentili *et al.* 2015), leading to greater isolation of their populations or even to extinction (Thuiller *et al.* 2005).