

Abstract

The progressive degradation of natural habitats caused by anthropogenic pressure and climate change is currently one of the greatest threats to biodiversity. Sensitive to changes in habitat conditions, plant glacial relicts inhabiting peatland ecosystems are particularly vulnerable to extinction. The aim of this study was to assess the effectiveness of translocating threatened wetland plants of the genus *Salix* as an active conservation method in the context of projected climate change. The acclimatization capacity of plant material cultivated ex situ was evaluated empirically in terms of its ability to survive short- and long-term exposure to abiotic stressors. The research strategy adopted a complementary approach, combining laboratory experiments, in which defined levels of abiotic stress were simulated under controlled conditions, with field studies conducted directly at natural recipient habitats. At each stage of the study, plant condition was assessed using morphological and physiological indicators.

The obtained results indicated that the successful translocation of ex situ-grown *Salix myrtilloides* plants depended substantially on both the acclimatization procedure and the duration of acclimatization. Physiological responses of *S. lapponum* to abiotic stress provide sensitive and reliable indicators of how successfully translocated plants acclimatize to conditions at recipient sites. Combined with visual assessment of morphological traits, these indicators may form an integrated framework for monitoring the condition of translocated plants. The field experiment revealed that *S. lapponum* plants could survive, grow, and initiate reproduction at recipient sites where habitat conditions differed substantially from those typically preferred by the species. Peatland habitats undergoing changes driven by climate change may therefore serve as recipient sites for *S. lapponum*. Maintaining stable hydrological conditions within these habitats is a key factor determining the success of translocation of the species.

Key words: climate changes, peatlands, species translocations, *Salix lapponum*, *Salix myrtilloides*