

Water holding capacity, thallus anatomy and photosynthetic performance in *Lobaria pulmonaria* from retained-forest patches and isolated-trees

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Oak-dominated forests are important habitats for *Lobaria pulmonaria* populations in the Mediterranean area, where this indicator species is threatened by intensive forest management, habitat fragmentation and climate change. Retention forestry represents a suitable option to conserve the structural, functional, and compositional diversity of forest ecosystems. To test this statement, photosynthetic performances, thallus anatomy and water holding capacity (WHC) in thalli of *L. pulmonaria* were investigated in a logged mixed oak forest (Tuscany, Italy), comparing individuals from retained-forest patches and retained-isolated trees, 18 months after logging.

Thalli on the trunks of retained-isolated trees were thinner and showed lower vitality (as indicated by the potential quantum yield of primary photochemistry – F_v/F_m and the index of overall photosynthetic performance – PI_{ABS}), as well as lower water holding capacity. Thalli from forest patches showed performances comparable to those of healthy samples from unlogged forests. In the case of forest logging, retaining unlogged patches and buffer strips improve biodiversity conservation and enhance ecosystem functioning of managed forests.