

**DISTRIBUTION AND HABITAT ECOLOGY OF THE THREATENED FOREST LICHEN
LOBARIA PULMONARIA IN ESTONIA**

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Introduction

Lobaria pulmonaria (L.) Hoffm. is a conspicuous and widely known epiphytic lichen of the northern hemisphere. Due to intensified forest management practices and air pollution populations of *L. pulmonaria* have been heavily fragmented and have declined considerably in Europe (Wolseley & James 2000). *L. pulmonaria* is a widely used as an indicator species of undisturbed old-growth forests ecosystems, but the knowledge about its habitat ecology is still highly fragmented (Jüriado & Liira 2009, Scheidegger & Werth 2009).

Methods

We used data set of 426 records to give an overview of the distribution and stand-scale habitat ecology of *L. pulmonaria* in Estonia. The factors affecting the presence and coverage of *L. pulmonaria* within the stand were estimated in traditionally managed but now abandoned wooded meadows of Estonia.

Results

The number of *L. pulmonaria* localities is the highest in the densely forested regions in north-eastern and south-western Estonia, concentrated mainly in small forest patches defined as ‘ecologically highly valuable’. The species grows mostly on deciduous trees, particularly on aspen (*Populus tremula*). *L. pulmonaria* is most common in oligo-mesotrophic boreal, eutrophic boreo-nemoral and in eutrophic paludifying forests, and prefers forests with an average age of trees more than 100 years. In overgrown wooded meadows the probability of presence of *L. pulmonaria* is significantly correlated with the height of the shrubs of one meter radius around the trunk. Moreover, this probability and coverage of *L. pulmonaria* increase with a coverage of bryophytes. The probability of the presence of *L. pulmonaria* decreases with the distance from the nearest colonized trees.

Discussion

In spite of the many localities of *L. pulmonaria* in Estonia, the species is still threatened because (1) the rotation period of tree stands is short, (2) it is abundant in forest types which are rare or under strong economic pressure, (3) and it prefers host trees which have a restricted distribution in Estonia or are not favoured in forest management practice.

References

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