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## Distribution and habitat ecology of the threatened forest lichen *Lobaria pulmonaria* in Estonia


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### *Lobaria pulmonaria*




*Lobaria pulmonaria* (lung lichen, h. kopsusamblik) is a conspicuous and widely known epiphytic lichen species of the northern hemisphere.

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## Introduction

- Favours natural forests and grows in woodlands or parklands of long ecological continuity
- Sensitive to forest management and air pollution (SO<sub>2</sub>)
- Major decline in Europe, Asia and North-America
- National status: near threatened (NT), protection category III.



*L. pulmonaria* in Järvelja old-growth forest

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## Task I To quantify:


- the distribution
- habitat preference
- host tree specificity of *L. pulmonaria* in Estonia

## Task II

- the factors affecting the presence and coverage of *L. pulmonaria* within the stand – in traditionally managed but now abandoned wooded meadows of Estonia (Suurekivi, Haavakannu and Lasila wooded meadows).




Lasila wooded meadow with large population of *L. pulmonaria*

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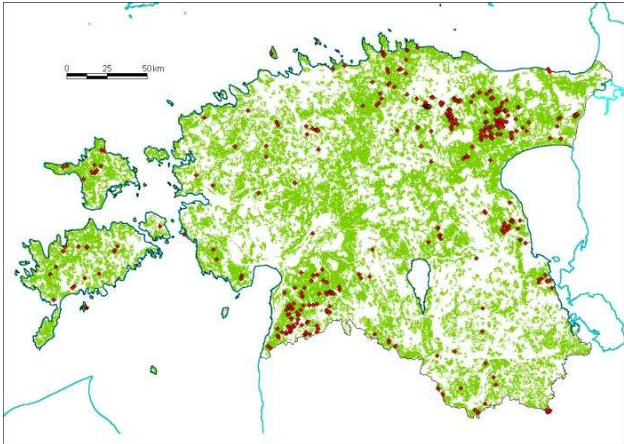
## Data

- 302 records were registered during Woodland Key Habitat Inventory (1999-2002);
- 107 records were registered during the survey "Estonian Forest Conservation Area Network" from the period 1999-2000;
- 95 personal notes and the herbarium specimens deposited at the University of Tartu (TU), the period 1904-2002;
- 159 trees with *L.pulmonaria* studied in northeastern Estonia in three overgrown wooded meadows.

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## Results

### Localities of *L. pulmonaria*

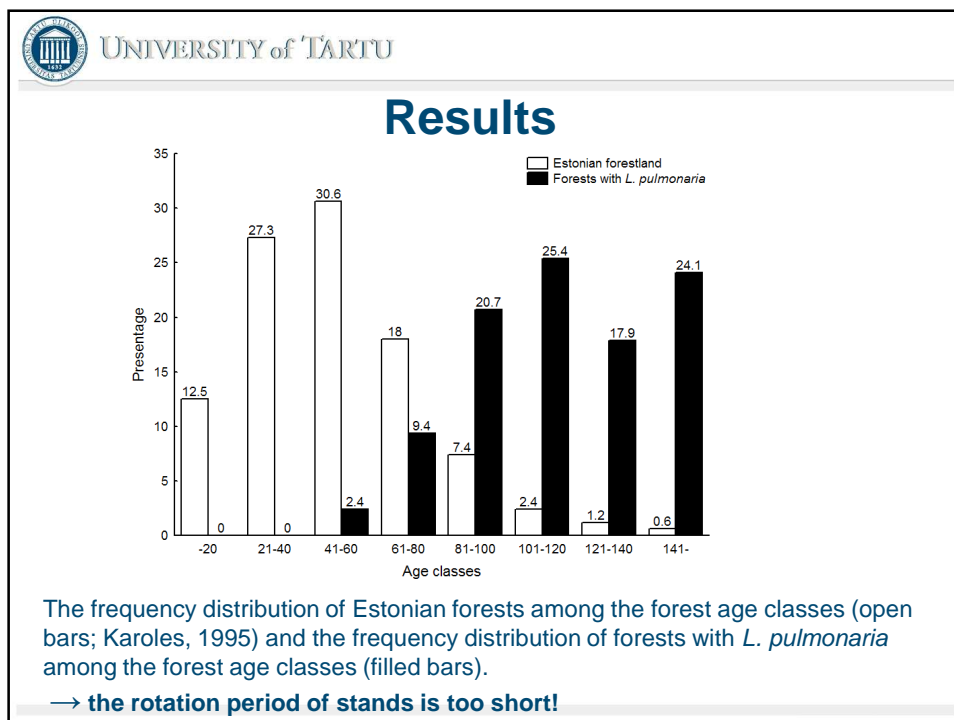
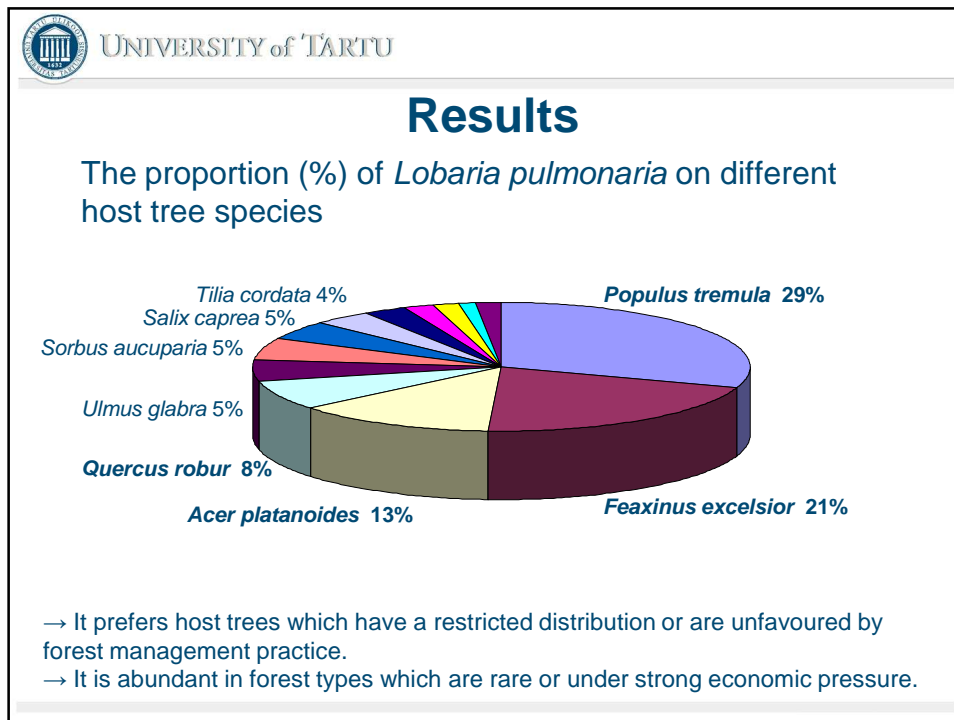


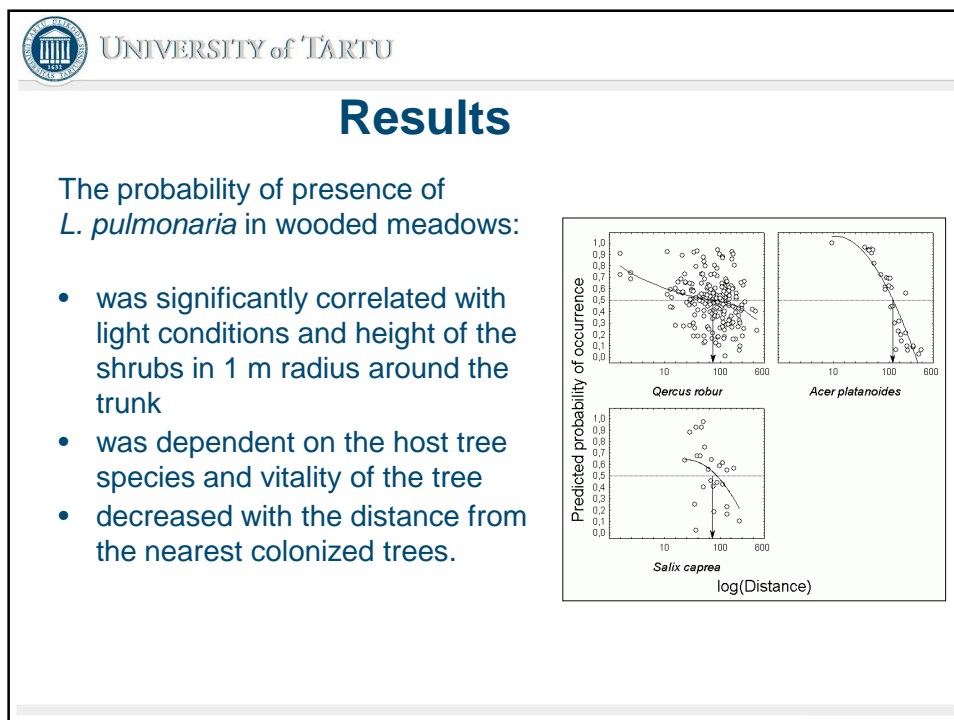
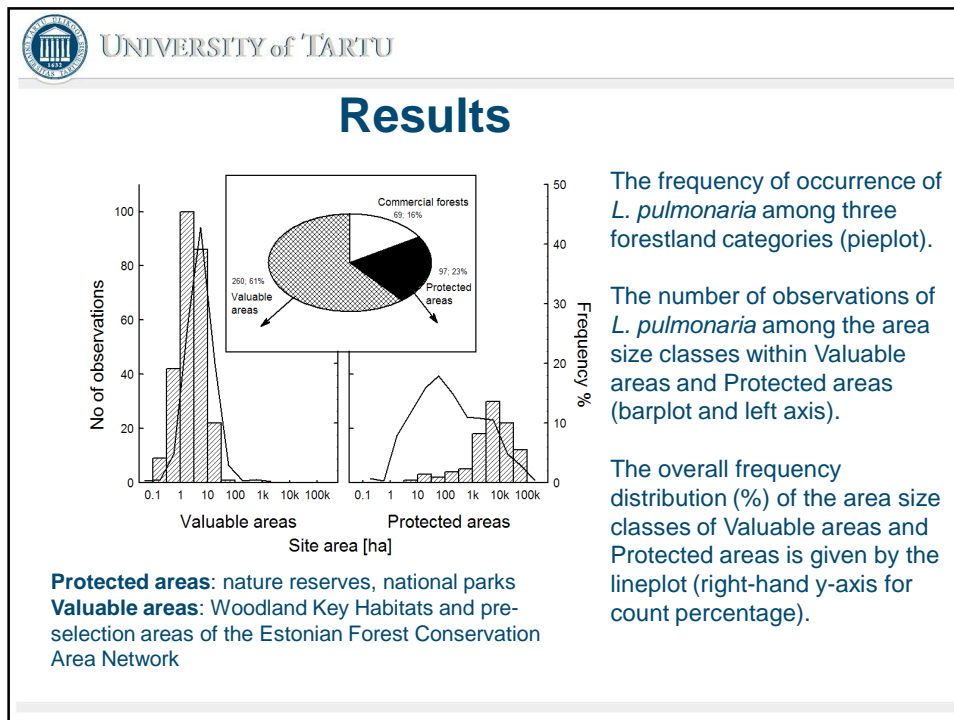
*Lobaria pulmonaria* is a forest dependent species:

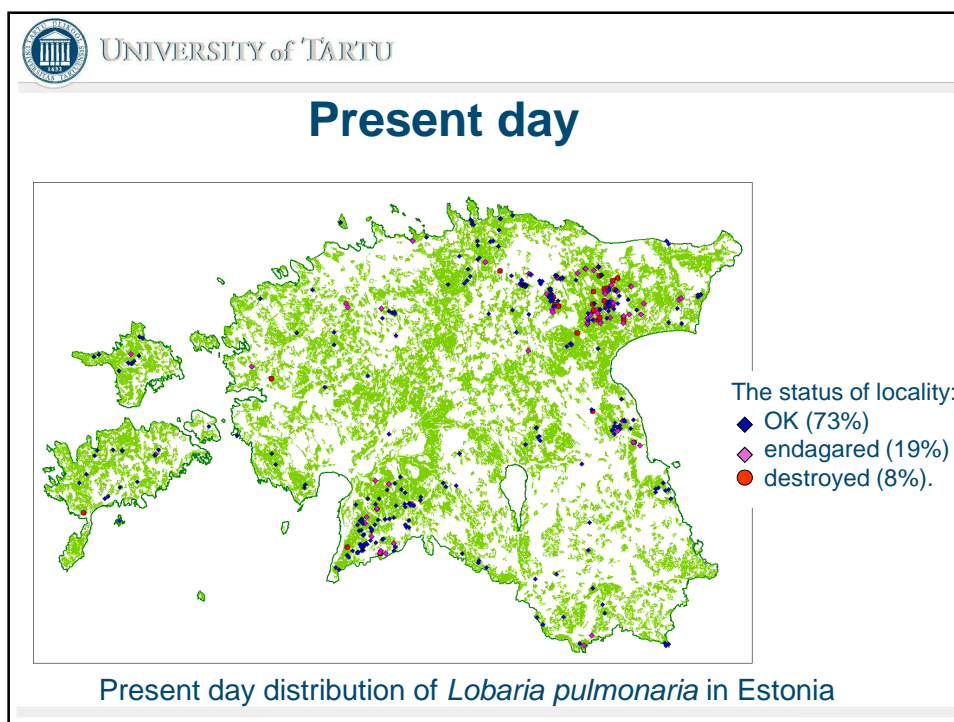
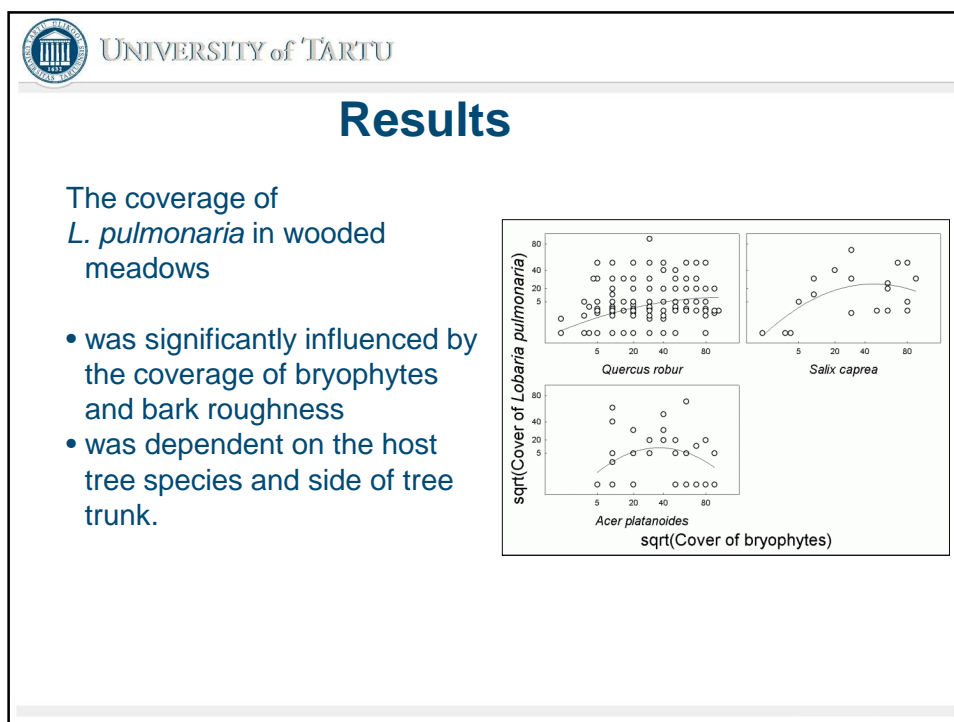
- 87% of the records were from forests,
- 10% from wooded meadows,
- 3% from parks.

Green area represents forestland according to Peterson (2003).

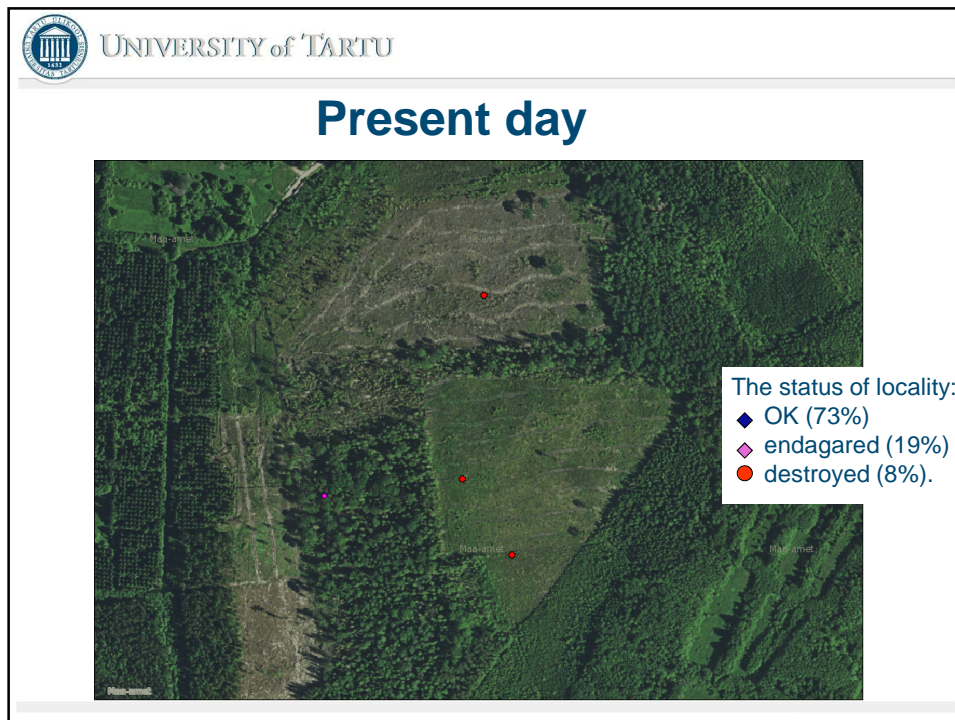
(Jüriado & Liira 2009)











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### Where to go now?


- **Habitat protection** – more attention for habitat remnants
- **Protection of host tree** – changes in forest management style – more species-rich (mixed) stands
- **The maintenance of suitable environmental conditions** – heterogeneous environment with gaps, bushes, regrowth and old trees
- **Overcoming the dispersal limitation** – transplantation of *L. pulmonaria* in suitable habitats

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## Where to go now?

Partially overgrown wooded meadows proved to be suitable habitats for *L. pulmonaria*



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## Where to go now?


Old wooded parks could be alternative habitats for *L. pulmonaria*, if their management would become more flexible.




*L. pulmonaria* in the park of manor Krüüdneri

Transplantation into the park of manor Kastre from manor Luke






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## Thanks!




We are very grateful to all persons who recorded the presence of *L. pulmonaria* in Estonia.

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