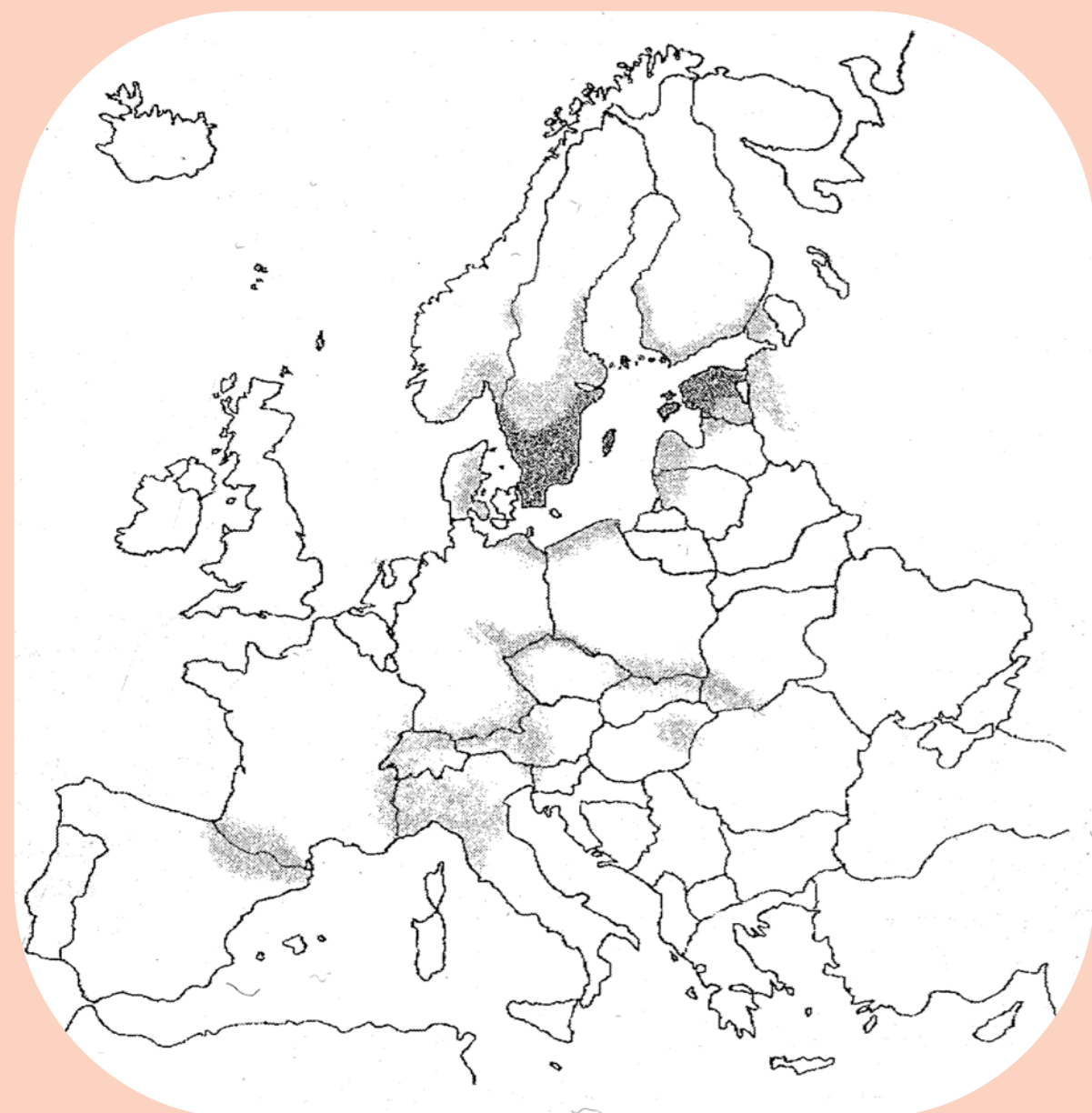


Pattern and development of plant diversity of Estonian wooded meadows

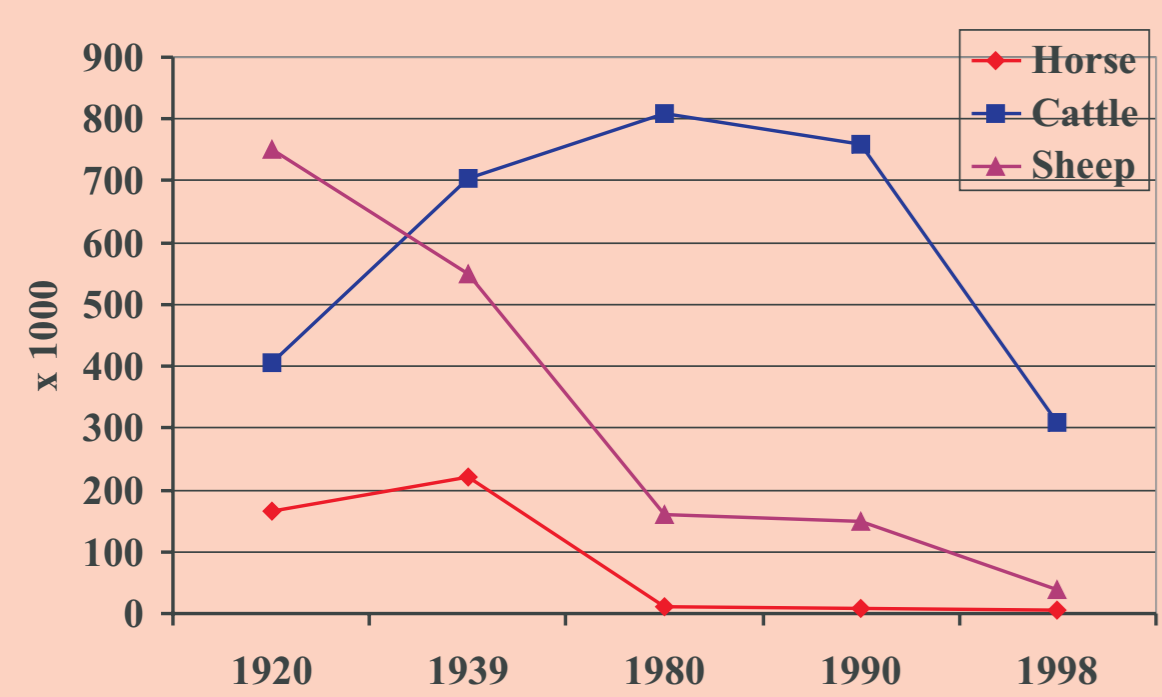


Marek Sammul & Toomas Kukk

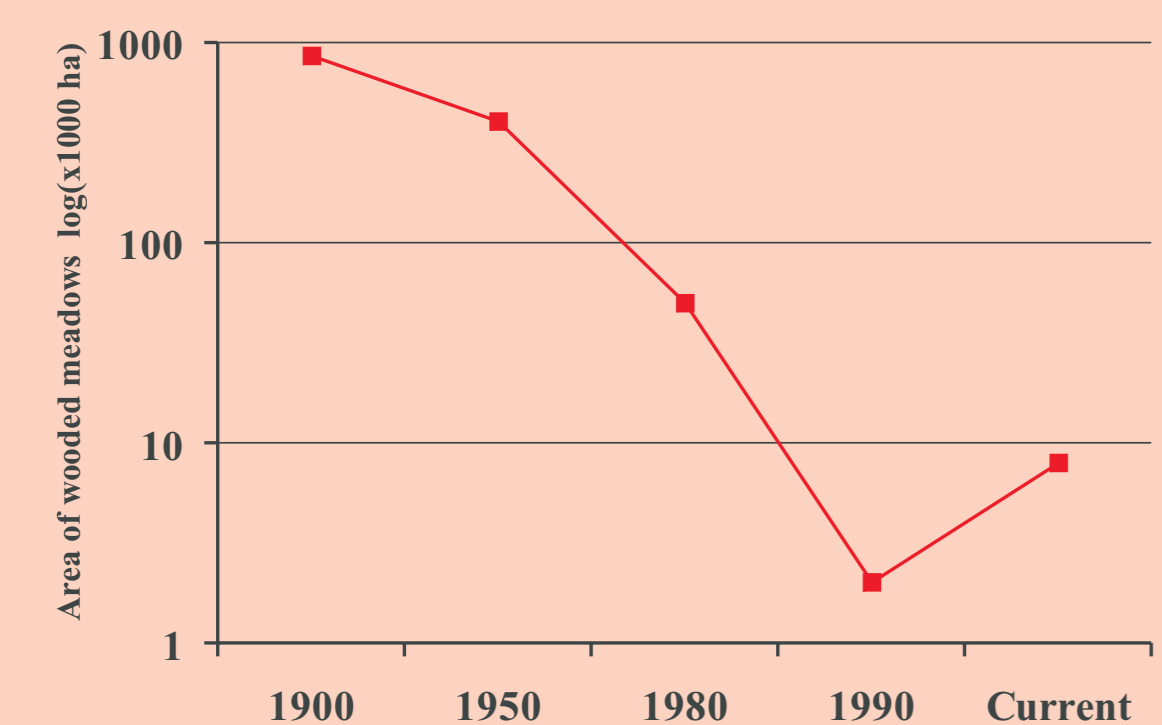
Estonian University of Life Sciences, Institute of Agricultural and Environmental Sciences
Riia str. 181, 51014 Tartu, Estonia. marek.sammul@eau.ee toomas.kukk@emu.ee



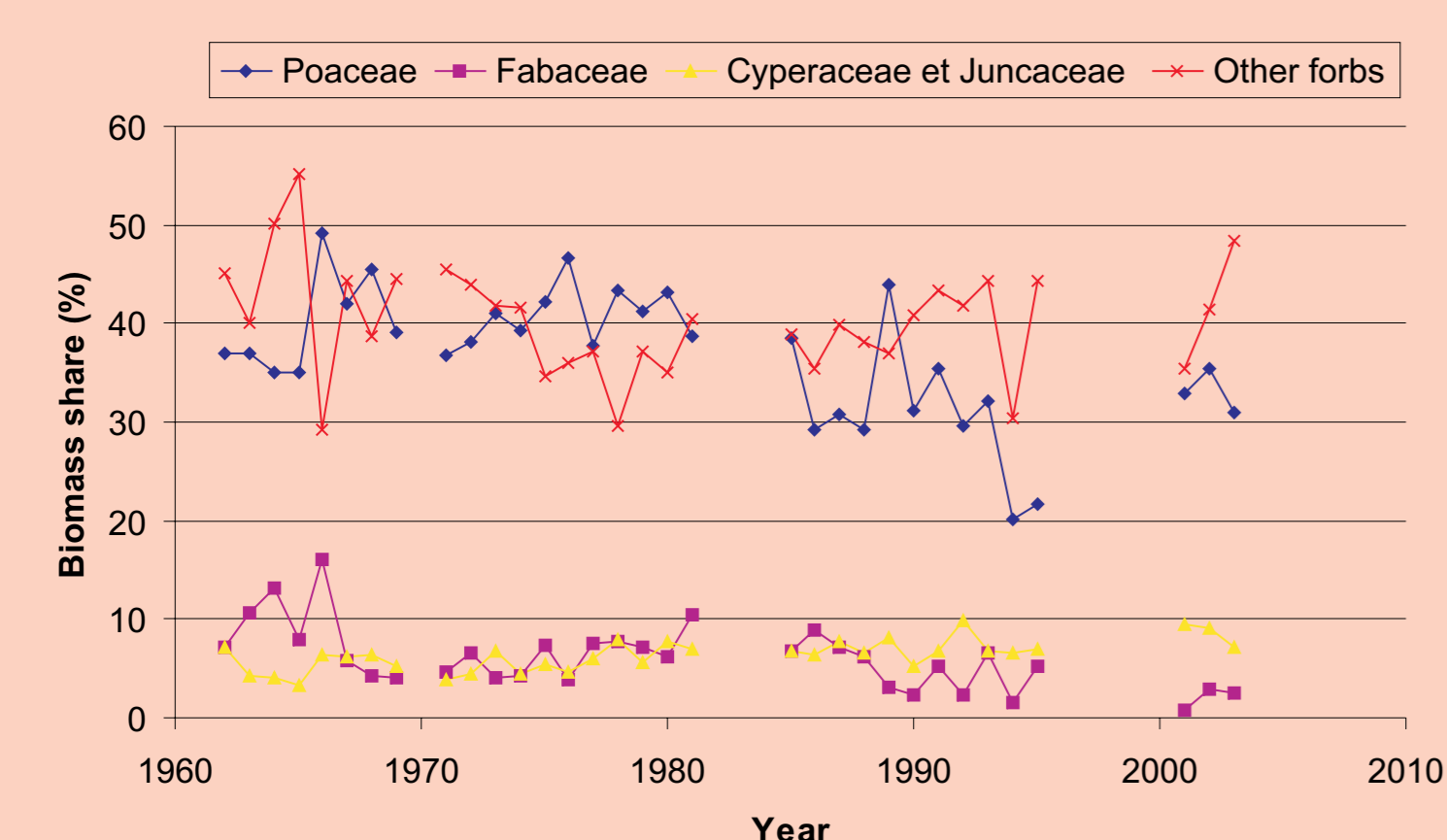
Historic distribution of wooded meadows in Europe



Trends in animal husbandry in Estonia during 20th century



Dynamics of area of wooded meadows in Estonia



Dynamics of species groups in Laelatu wooded meadow

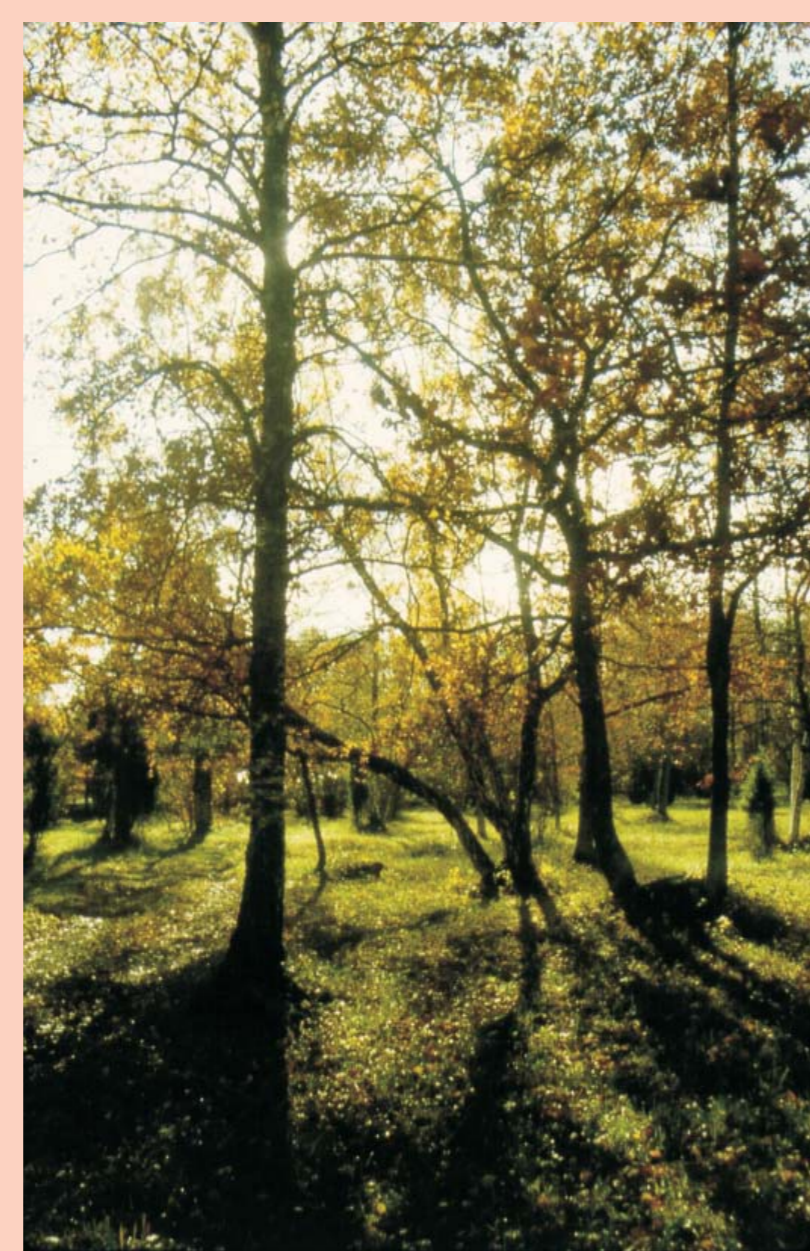


Tärkma wooded meadow - 61 sp. per m²

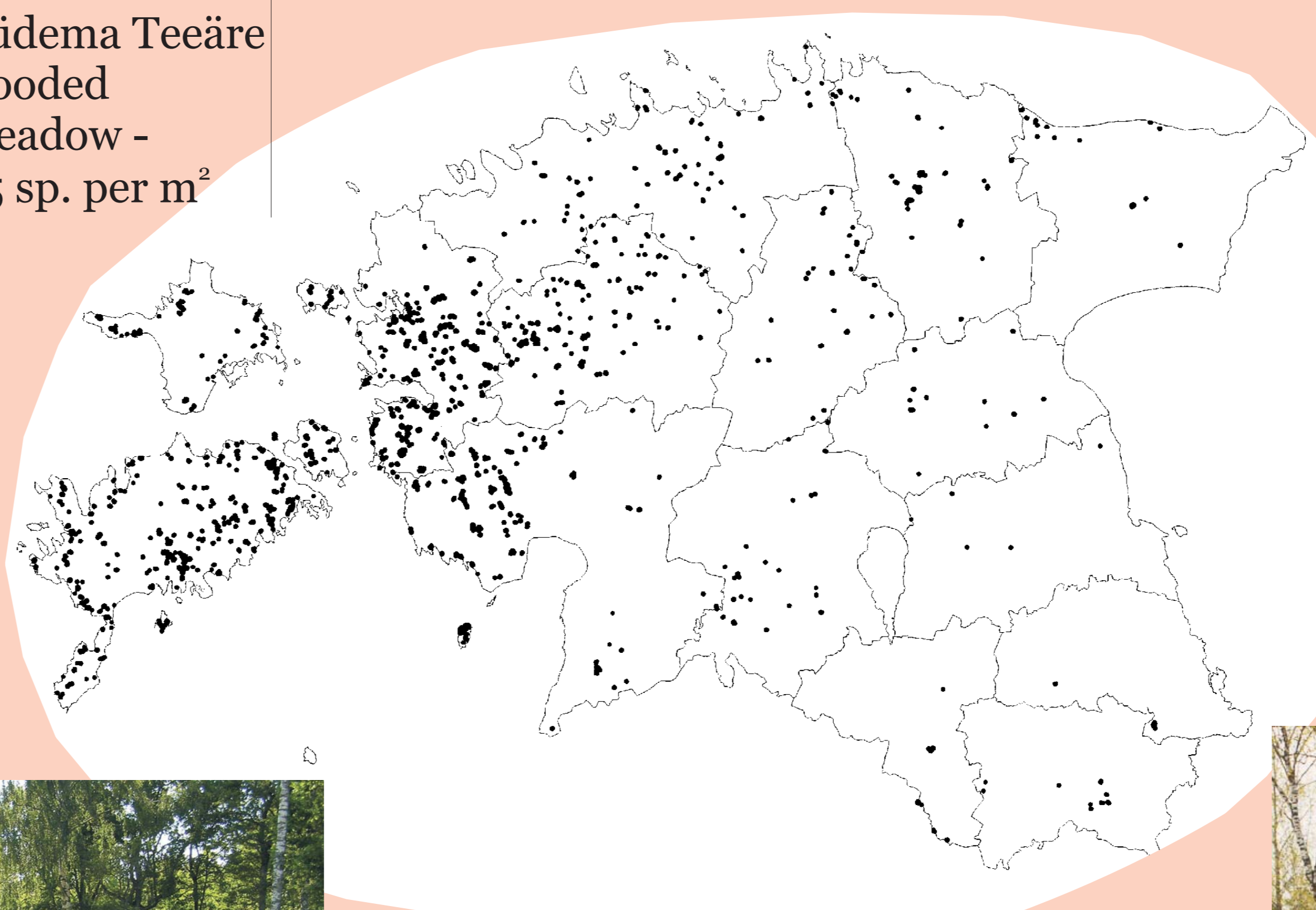


Laelatu wooded meadow -
76 species* per m²;
42 sp. per 400 cm²;
25 sp. per 100 cm²

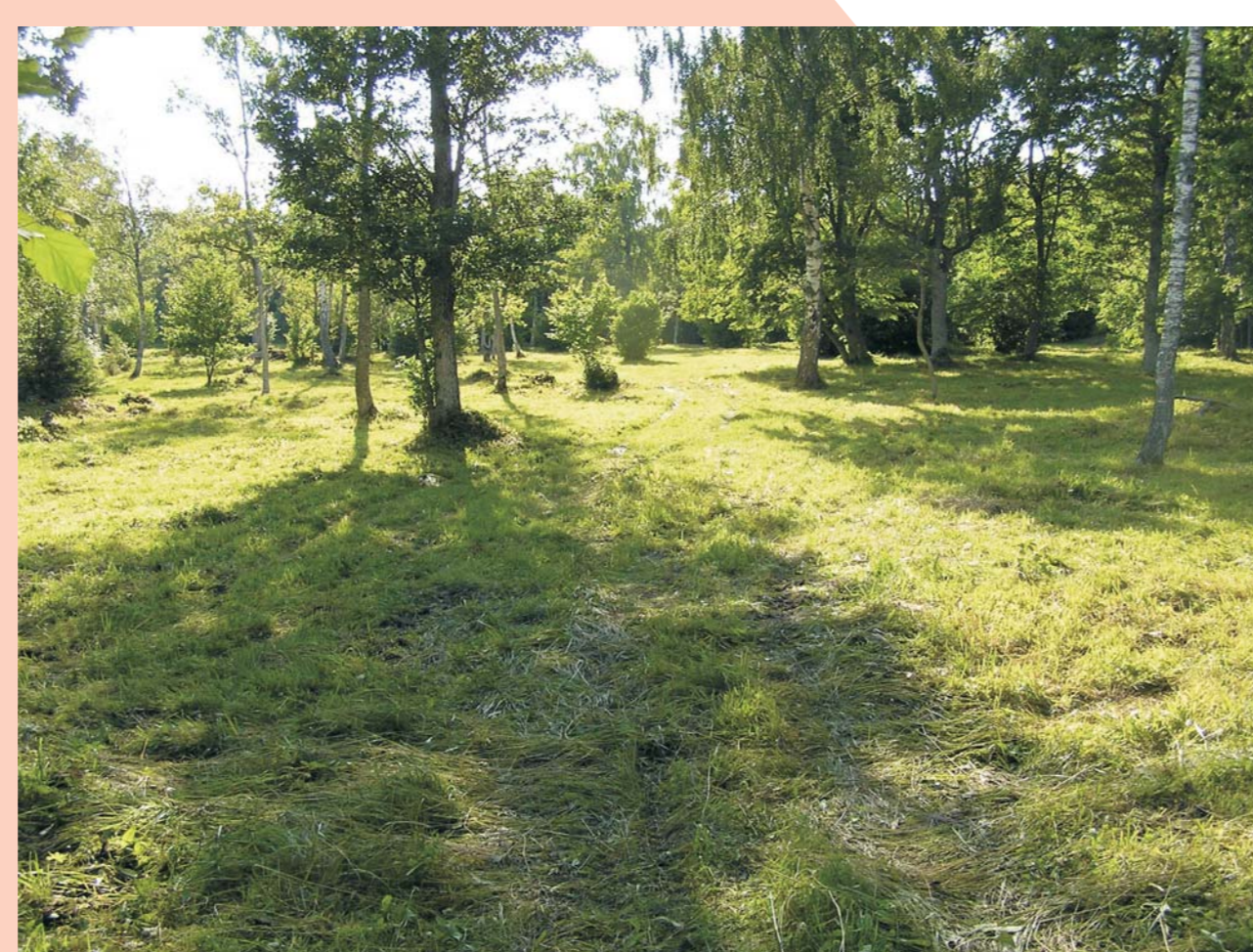
(*species of vascular plants growing above ground together at one time)



Küdema Teeäre wooded meadow - 65 sp. per m²



Vahenurme wooded meadow - 74 sp. per m²



Tagamõisa wooded meadow - 67 sp. per m²



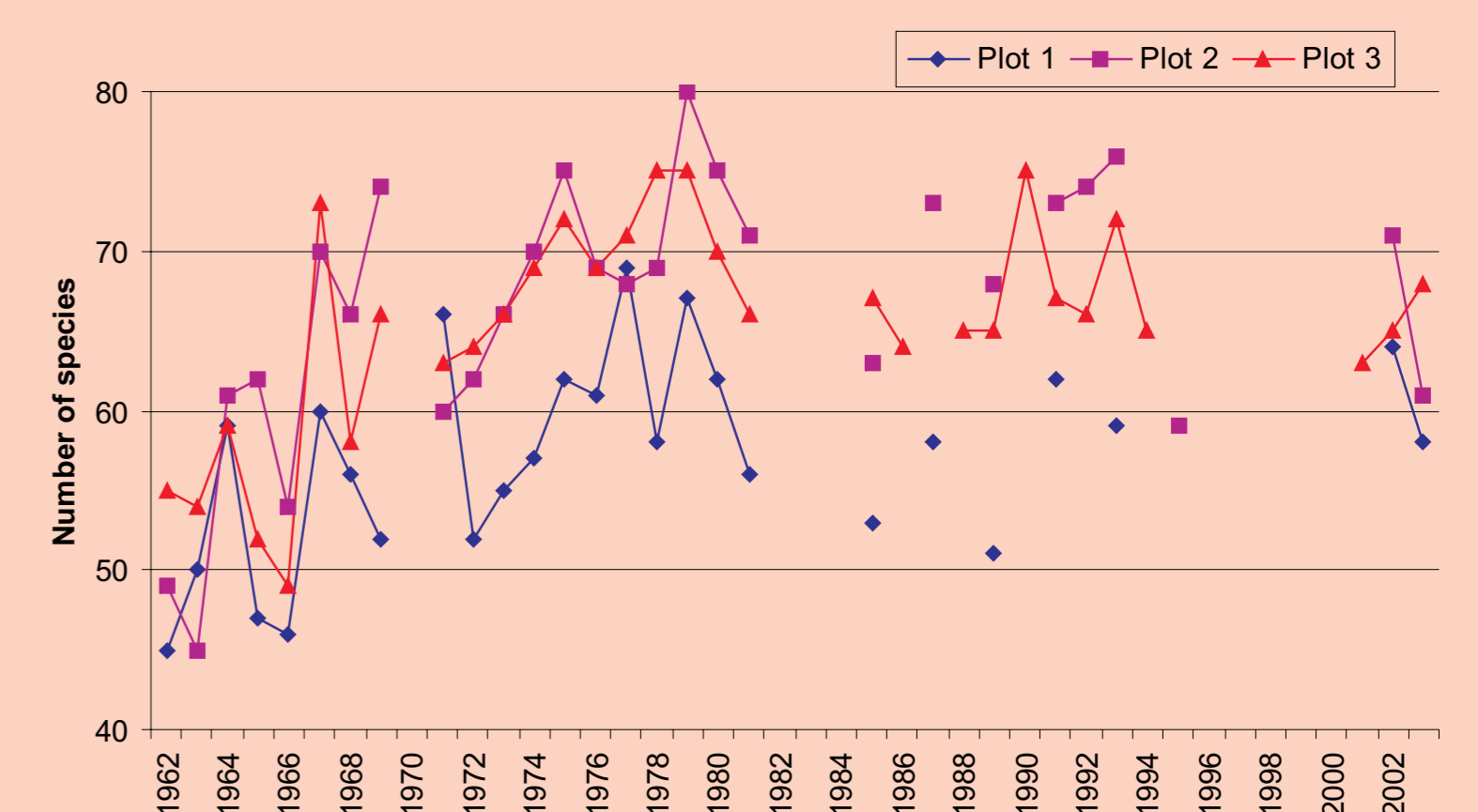
Allika wooded meadow - 61 sp. per m²



Nedrema wooded meadow - largest mown wooded meadow of Europe (over 110 ha)

Man-made origin

- ◆ Oldest man-made habitat in Northern Europe
- ◆ First used as a pasture, but since wider use of scythe, primarily as a hay meadow
- ◆ Latitude and climate at winter determine the need for collecting winter fodder
- ◆ Cultural and religious attitude towards nature has been respectful and wooded meadows have been valued also for their beauty and landscape



Dynamics of plant species number in permanent plots in Laelatu wooded meadow

Semi-natural vegetation

- ◆ Regularly mown once a year and only occasionally grazed (if at all)
- ◆ No ploughing or fertilization or seeding
- ◆ Sparse tree and shrub layer
- ◆ Complex vegetation consisting of fragments of various associations
- ◆ Coexisting meadow and forest plants

Cumulation of species

- ◆ There is a diversity of microhabitats in wooded meadows
- ◆ There is a large species pool for calcareous habitats
- ◆ There has been a good connectivity between habitats
- ◆ Low-intensity regular disturbance along with low productivity has minimised competitive exclusion
- ◆ The management has been long-lasting and continuous