

Latvian rare and endangered woody plants in *ex situ* collections

Madara Lazdāne¹, Inga Apine¹, Linda Strode², Ludmila Višņevska², Liene Opincāne³, Sanita Vaivode-Āzena³

¹ - Botanical Garden of The University of Latvia, ² – National Botanic Garden, ³ – LVM Kalsnava Arboretum
madara.lazdane@lu.lv

INTRODUCTION

An important target for botanical gardens is Target 8th of the Global Strategy for Plant Conservation: "At least 75% of endangered plant species should be in *ex situ* collections, preferably in the country of origin." The aim of our work was to evaluate the *ex situ* collections of rare and endangered woody plants in Latvia. A common list has been created of 30 endangered woody plant species, summarizing 28 species listed in the Red Data Book of Latvia (RDB) (Andrušaitis 2003) and 23 in the Annex of the Regulation of the Cabinets of Ministers No. 396 "Regulations of the list of specially protected species and specially protected species of limited use" (Cabinet of Ministers Regulations No. 396, 14.11.2000). The list was supplemented with data about accessions of species presented in the collections of 3 institutions that are holding documented collections of living plants for the purposes of scientific research, conservation, display, and education - National Botanical Garden (NBG), the Botanical Garden of the University of Latvia (BGUL), and Joint Stock Company "Latvia's State Forests" Kalsnava Arboretum (KA).

The aim of the research is to analyze the *ex situ* collections of endangered woody plants in Latvia and to understand where Latvia is in the fulfillment of Target 8th.

RESULTS AND DISCUSSION

At the end of 2021, there were 25 protected woody plant species in *ex situ* collection in at least one of the mentioned institutions, 23 listed in the Red Data Book of Latvia (82,1%) but 22 listed in Cabinet of Ministers Regulations No. 396. (95,7%) (Table 1.). Accessions of 9 species are found in all 3 collections, 11 species in 2 collections, and 5 species only in one collection (Figure 1.). The most endangered woody plants are represented by NBG, which has accessions of 22 species, followed by KA with 17 species, and BGUL – with 15 species (Figure 1.).

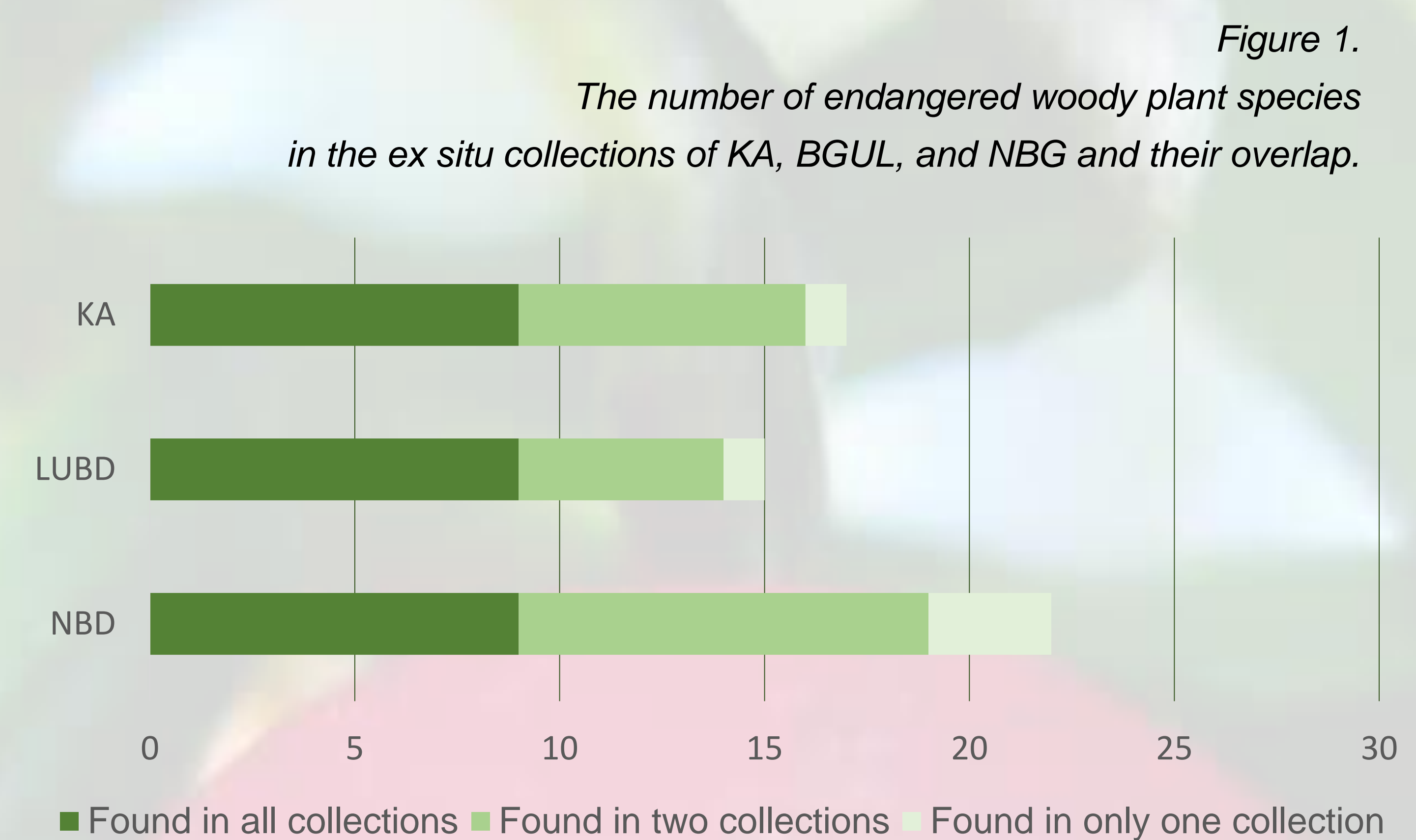


Table 1.

Latvian rare and endangered woody plants and their presence in *ex situ* collections.

Species	RDB category *	Reg. 396 **	NBG	LUBG	KA
<i>Betula nana</i>	2	x	x	x	x
<i>Carpinus betulus</i>	2	x	x	x	x
<i>Chamaepericlymenum suecicum</i>	1	x	-	x	-
<i>Cotoneaster canescens</i>	1	-	-	-	-
<i>Cotoneaster niger</i>	1	x	-	-	x
<i>Cotoneaster orientalis</i>	2	-	x	-	-
<i>Cotoneaster scandinavicus</i>	1	x	x	-	x
<i>Crataegus laevigata</i>	2	x	x	-	x
<i>Crataegus lindmanii</i>	3	x	x	-	x
<i>Crataegus plagiosepala</i>	1	x	x	-	-
<i>Erica tetralix</i>	1	x	x	x	-
<i>Euonymus verrucosa</i>	-	x	x	x	x
<i>Hedera helix var. baltica</i>	1	x	x	x	x
<i>Helianthemum nummularium</i>	3	x	x	x	-
<i>Lonicera caerulea subsp. pallasii</i>	3	x	x	x	x
<i>Myrica gale</i>	3	x	x	x	x
<i>Pentaphylloides fruticosa</i>	1	x	x	x	x
<i>Prunus spinosa</i>	1	-	-	x	x
<i>Rosa coriifolia</i>	3	x	-	-	-
<i>Rosa mollis</i>	3	x	-	x	-
<i>Rosa rubiginosa</i>	3	x	x	x	-
<i>Rosa sherardii</i>	3	-	x	-	-
<i>Rubus arcticus</i>	0	-	x	-	-
<i>Rubus plicatus</i>	0	-	-	-	-
<i>Salix myrtilloides</i>	3	x	-	-	x
<i>Salix phylicifolia</i>	3	x	-	-	x
<i>Salix repens</i>	-	x	-	-	x
<i>Sorbus intermedia</i>	3	-	x	x	x
<i>Taxus bacata</i>	1	x	x	x	x
<i>Viscum album</i>	1	x	-	-	-

* RDB - Red Data Book of Latvia, categories 0 – extinct, 1 – endangered, 2 – vulnerable, 3 – rare, 4 – undetermined;

** Reg. 396 – Regulations of the Cabinet of Ministers of Latvia No. 396

Summarizing the data, it is possible to conclude that one part of Target 8th is fulfilled, but NBG, BGUL and KA should strengthen their cooperation and ensure that accessions of protected plant species are present in all collections. As well as wild origin accessions should be further added to the collections.

It should be mentioned that active work is currently being done to update the Red Data Book of Latvia and Regulation of the Cabinets of Ministers No. 396, so changes to both lists should be awaited. Research continues and results have not yet been published, but the inclusion of four species in the old list of endangered species is already being called into question. *Cotoneaster canescens* and *Rosa sherardii* occurrence in the wild in Latvia is doubtful, *Cotoneaster orientalis* is a synonym of *Cotoneaster niger*, *Crataegus plagiosepala* species name is ambiguous, now likely of hybrid origin. As long as these species are officially listed as endangered, they are included in our collections of endangered woody plants, but as soon as the list changes, the collections will be updated accordingly.

ACKNOWLEDGEMENT

We thank Dr. Pēteris Evarts - Bunders for the information provided on the latest research in the field of endangered woody plants.

REFERENCES

- Andrušaitis G. (ed. In chief) (2003). Red Data Book of Latvia. Rare and threatened plants and animals. Vol. 3. Vascular plants, Riga 691 p.
- Regulations of the Cabinet of Ministers of the Republic of Latvia Nr. 396 "Regulations of the list of specially protected species and specially protected species of limited use". Latvijas Vēstnesis 413/417, 17.11.2000., incl. the Alterations (Regulations of the CM Nr. 627, published 30.07.2004)
- Global Strategy for Plant Conservation, <https://www.cbd.int/gspc/>.