

Shade tolerance of the tree of heaven in southern Switzerland

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Tree of heaven - *Ailanthus altissima*

- Deciduous
- Pinnate leaves
- Up to 30 m high
- Dioecious (male and female plants)
- Vegetative reproduction (stem- and root sprouts)



Photo by Darkone

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How shade tolerant is the tree of heaven in southern Switzerland?



Light measurements



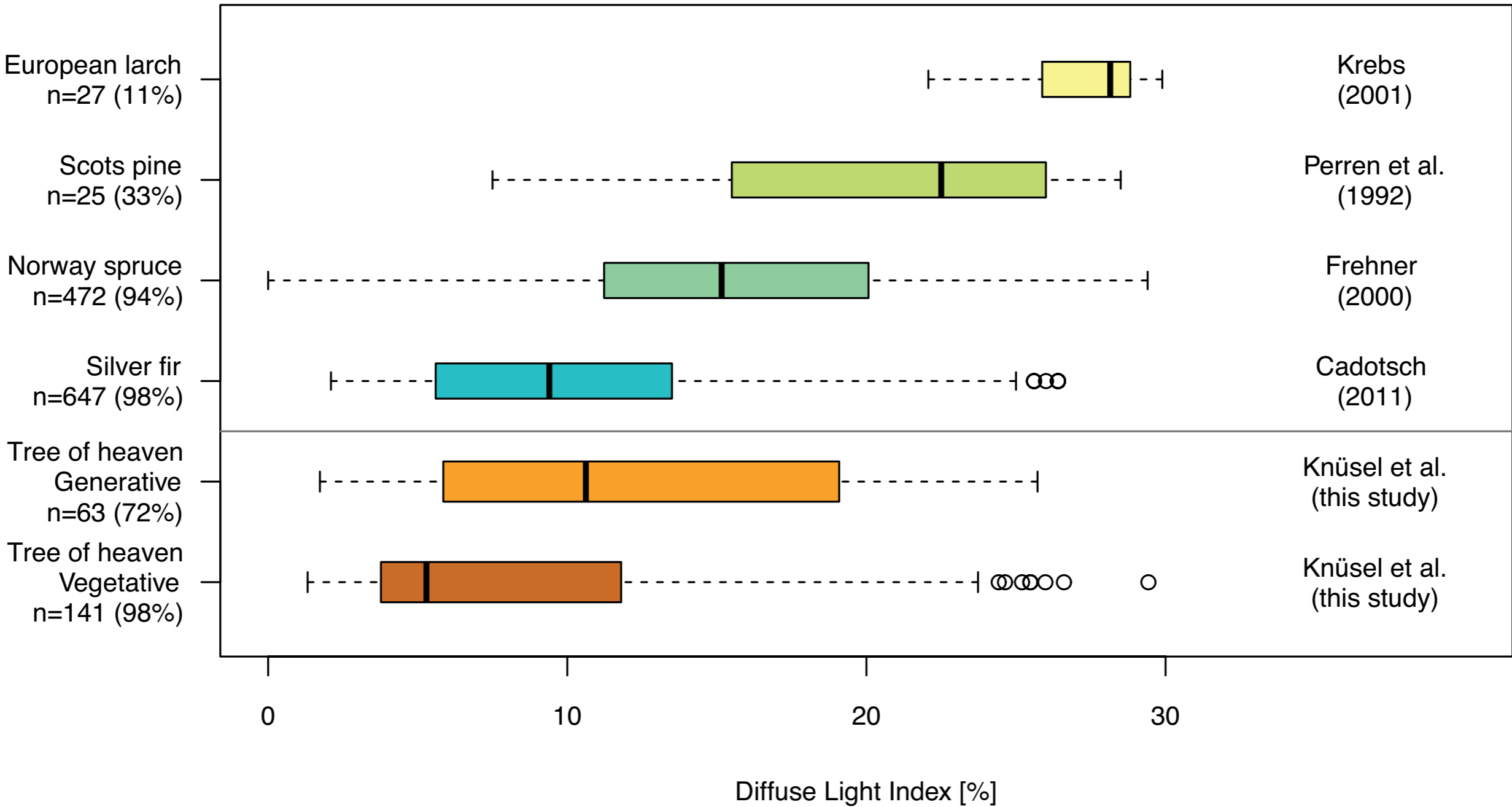
Photo by Andrea De Boni

Light measurements



Photo by Andrea De Boni

Regeneration in low light conditions



Age and height growth

	Tree of heaven generative	Tree of heaven vegetative	Silver fir
Age (years)	3 (1/7)	3 (1/7)	22 (5/32)
Height growth (cm)	38 (9/109)	53 (20/161)	9 (2/93)

Median values (min/max in brackets)

Height growth: mean growth over the last 3 years

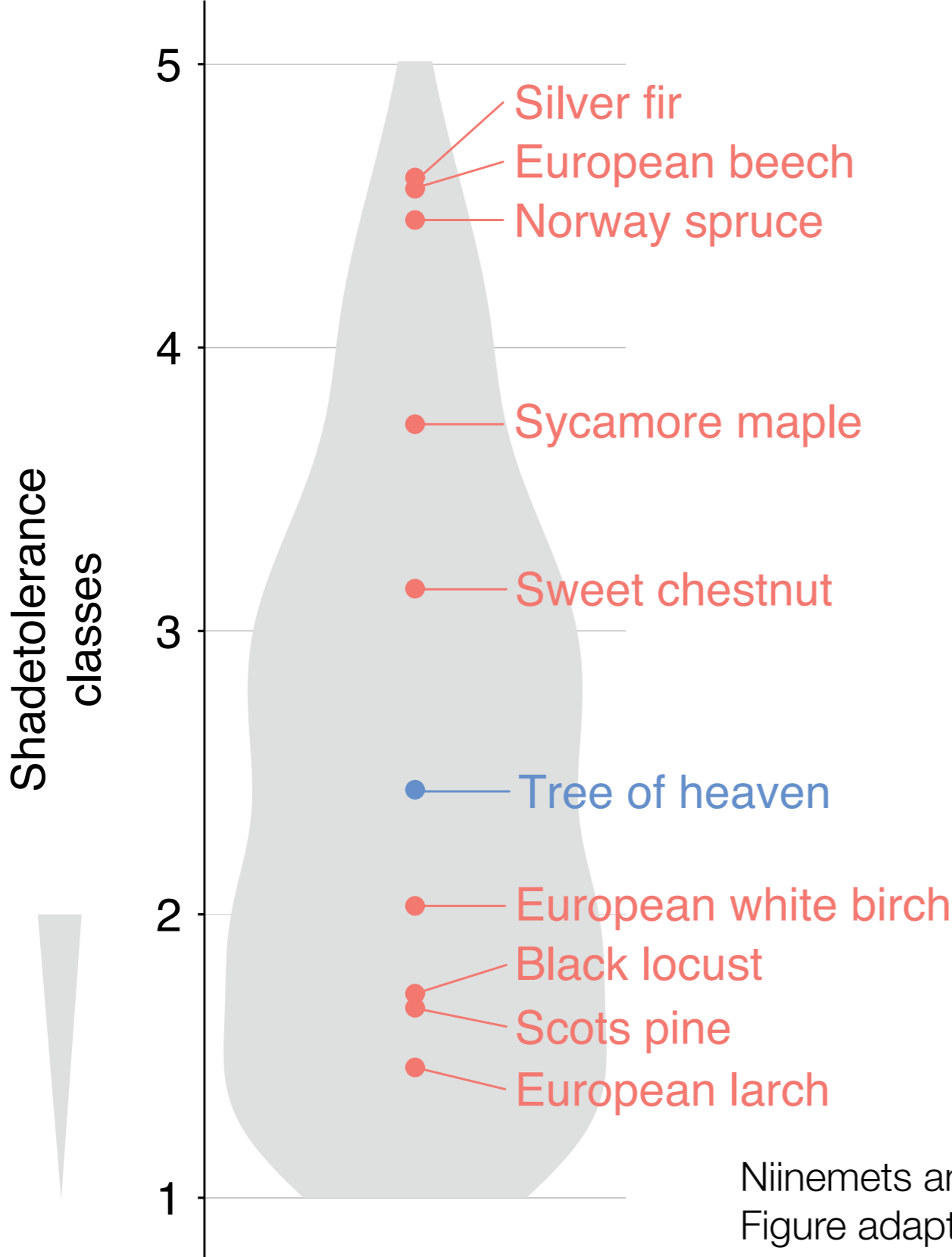
Tree of heaven:
Knüsel et al. (2016), Biological Invasions

Silver fir:
Cadotsch (2011)

How shade tolerant is the tree of heaven?

We view the **tree of heaven** as a tree species with a **low to intermediate shade tolerance**.

How shade tolerant is the tree of heaven?



Niinemetts and Valladares (2006), Ecological Monographs, Figure adapted from Appendix

How shade tolerant is the tree of heaven?

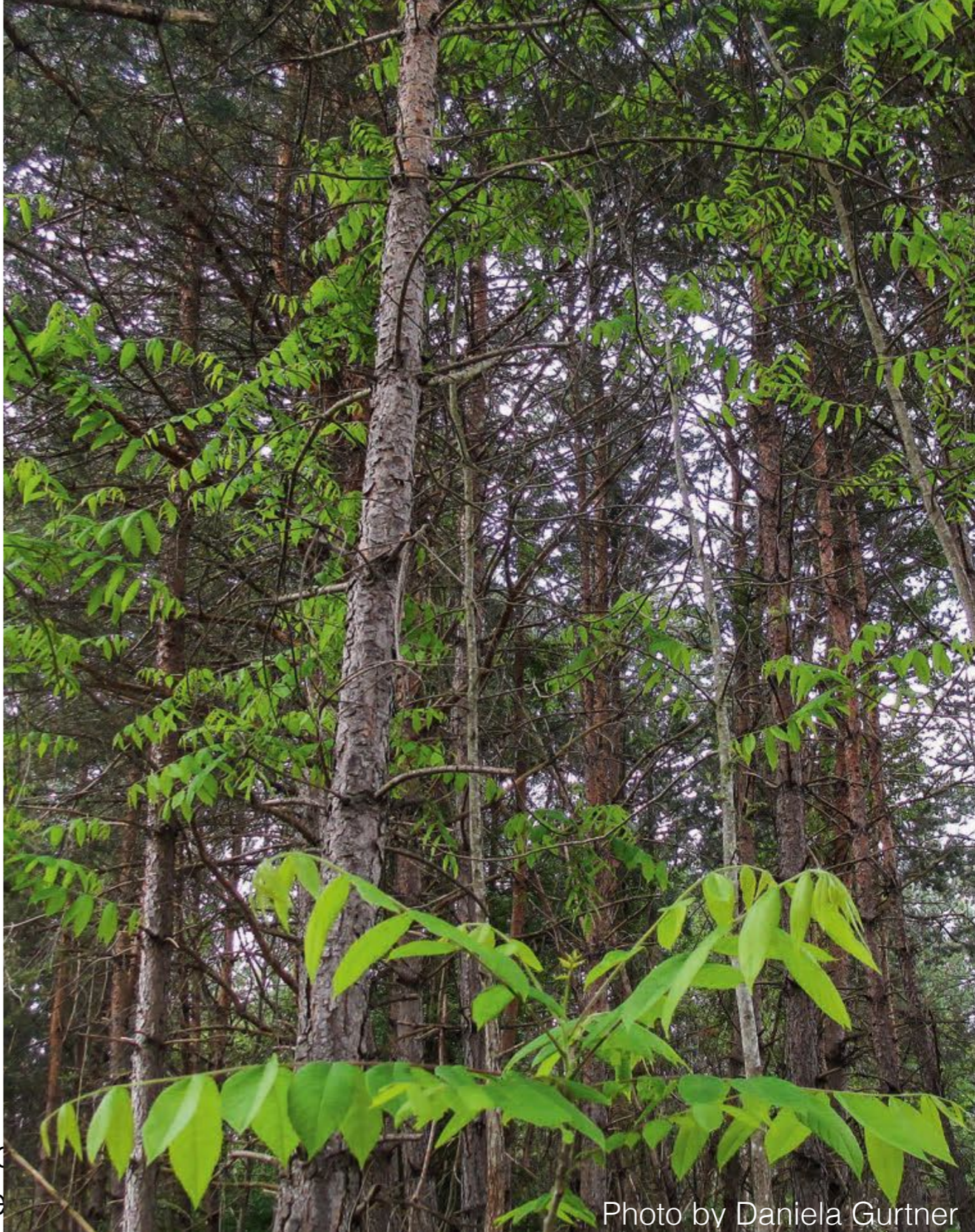
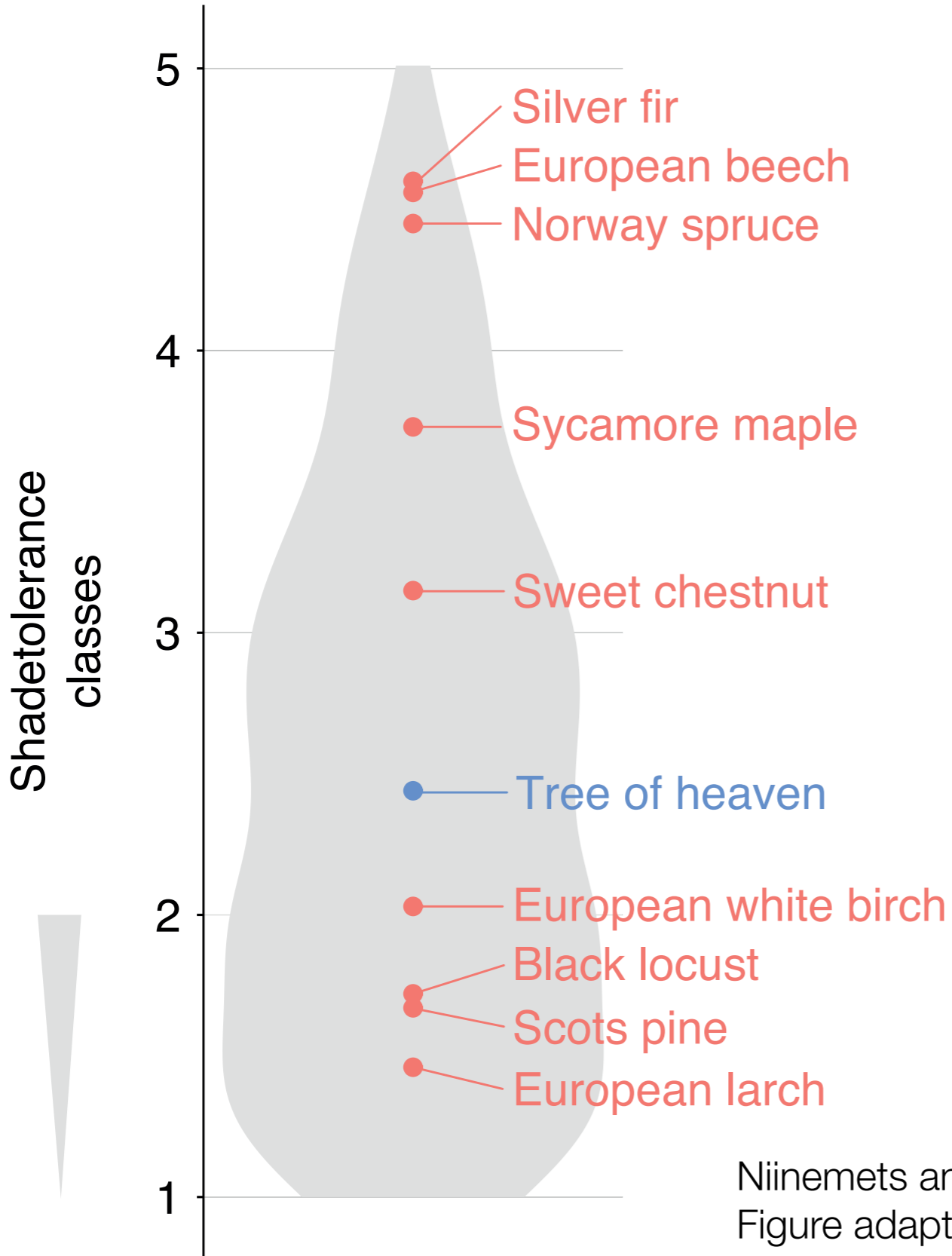


Photo by Daniela Gurtner

Management options

- Monitoring of the colonization frontier
- Monitoring should include closed canopy forests
- Especially important in the vicinity of female trees

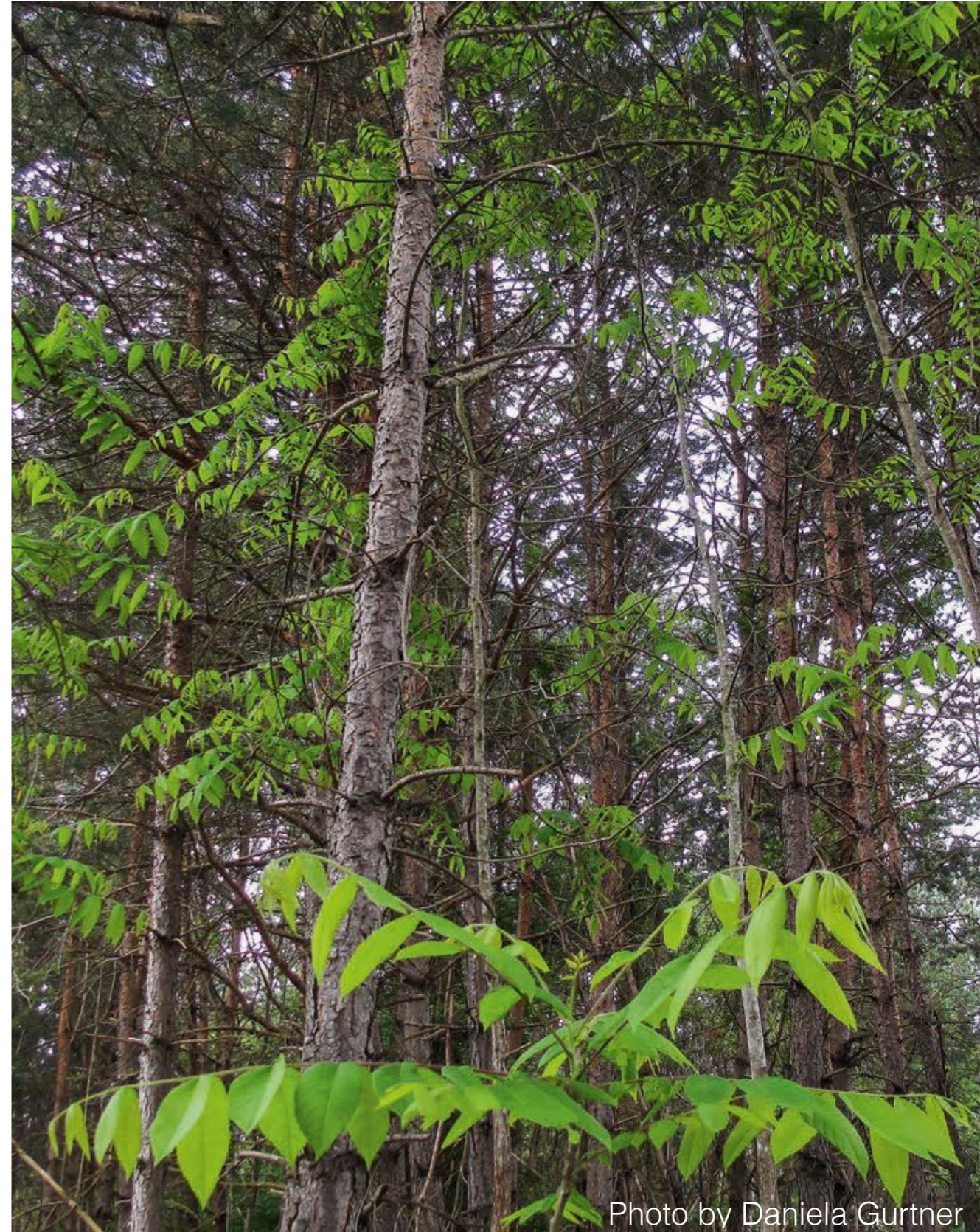


Photo by Daniela Gurtner

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