

Kleinbauer, I., Dullinger, S., Peterseil, J. & Essl, F. (2010): Climate change might drive the invasive tree Robinia pseudacacia into nature reserves and endangered habitats. Biological Conservation 143: 382-390.

Teljes hivatkozás: Kleinbauer, I., Dullinger, S., Peterseil, J. & Essl, F. (2010):
Climate change might drive the invasive tree Robinia
pseudacacia into nature reserves and endangered habitats. Biological
Conservation 143: 382-390.

Rövid hivatkozás: Kleinbauer et al. (2010)

Első szerző: Kleinbauer, I.

Év: 2010

Összefoglalás

Climate change might drive the invasive tree Robinia pseudacacia into nature reserves and endangered habitats

I. Kleinbauer, S. Dullinger, J. Peterseil, F. Essl

Static networks of nature reserves disregard the dynamics of species ranges in changing environments. In fact, climate warming has been shown to potentially drive endangered species out of reserves. Less attention has been paid to the related problem that a warmer climate may also foster the invasion of alien species into reserve networks. Here, we use niche-based predictive modelling to assess to which extent the Austrian Natura 2000 network and a number of habitat types of conservation value outside this network might be prone to climate warming driven changes in invasion risk by Robinia pseudacacia L., one of the most problematic alien plants in Europe.

Results suggest that the area potentially invaded by R. pseudacacia will increase considerably under a warmer climate. Interestingly, invasion risk will grow at a higher than average rate for most of the studied habitat types but less than the national average in Natura 2000 sites. This result points to a potential bias in legal protection towards high mountain areas which largely will remain too cold for R. pseudacacia. In contrast, the selected habitat types are more frequent in montane or lower lying regions, where R. pseudacacia invasion risk will increase most pronouncedly.

We conclude that management plans of nature reserves should incorporate global

warming driven changes in invasion risk in a more explicit manner. In case of *R. pseudoacacia*, reducing propagule pressure by avoiding purposeful plantation in the neighbourhood of reserves and endangered habitats is a simple but crucial measure to prevent further invasion under a warmer climate.

[klíma: klímaváltozás](#)

[Natura 2000](#)

[ökoszisztéma: invázió, inváziós faj](#)

[természetvédelem: kezelés, terv](#)

Megjegyzések

Climate change might drive the invasive tree *Robinia pseudacacia* into nature reserves and endangered habitats

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Tartalom:

Introduction

Material and methods

Study area

Study species

Species distribution data

Reserve and habitat distribution data

Environmental data

Climate data and climate change scenarios

Niche-based distribution modelling

Calculating invasion risk for reserves and habitats

Results

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Invasion risk of Austria as a whole

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Invasion risk of habitat types particularly sensitive to *R. pseudacacia*

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Implications for management strategies

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Acknowledgements

References

Austria, Climate change, Endangered habitats, Invasion risk, Natura 2000, Reserve networks, Species distribution models

Címszavazva - GE

Kiadó: Elsevier

Folyóirat: Biological Conservation

Lelőhely: ER Archívum (2010/P-018)

Típus: tudományos folyóiratcikk

Katalógusba vette: Gulyás Györgyi

Katalógusbavétel időpontja: cs, 04/07/2011 - 12:00