

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.

Reference: 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.

Short reference: Kleinbauer et al. (2010)

First author: Kleinbauer, I.

Year: 2010

Abstract

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.

[climate: climate change](#)

[Natura 2000](#)

[ecosystem: invasion, invador species](#)

[nature conservation: management, plan](#)

Notes

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

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

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

Current pattern of R. pseudoacacia distribution and SDM evaluation

Invasion risk of Austria as a whole

Invasion risk of Natura 2000 sites

Invasion risk of habitat types particularly sensitive to R. pseudacacia

Discussion

Climate warming and R. pseudacacia invasion

Caveats

Implications for management strategies

Conclusions

Acknowledgements

References

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

Címszavazva - GE

Publisher: Elsevier

Journal: Biological Conservation

Location: ER Archívum (2010/P-018)

Type: scientific paper

Katalógusba vette: Gulyás Györgyi

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