

Summary of EPPO Prioritization process¹ for: *Rhododendron ponticum* L.

In 2022/23, a number of species on the EPPO Observation List were re-prioritized with current information to assess if they should remain on the Observation List or be moved to another list. This is the prioritization summary for *Rhododendron ponticum* where the outcome is the species should remain on the Observation List.

Section A. Prioritization process scheme for the elaboration of different lists of invasive alien plants (pests or potential pests) for the area under assessment

A.1 Is the plant species known to be alien in all, or a significant part, of the area under assessment?

Yes: The invasive taxon likely results from artificial introgressive hybridization of *R. ponticum* subsp. *baeticum* (native to and close to extinction in the Iberian Peninsula) with the Appalachian species *R. catawbiense* Minchx. Another subspecies *R. ponticum* subsp. *ponticum* (not invasive) is native to Black Sea and Caucasus (Milne & Abbott 2000, Casati et al 2022).

A.2 Is the plant species established in at least a part of the area under assessment? (if yes goto A5)

Yes. The species is widely established in the Atlantic bioregion in Europe. The species has been recorded and considered invasive e.g. in Belgium, France, Ireland, Netherlands and United kingdom (Casati et al 2022).

A. 3 Is the plant species known to be invasive outside the area under assessment?

A yes for question A.2 means this question is skipped.

A.4 Based on ecoclimatic conditions, could the species establish in the area under assessment?

A yes for question A.2 means this question is skipped.

A.5 How high is the spread potential of the plant in the area under assessment?

Medium spread potential with moderate uncertainty: The plant produces a huge quantity of small seeds that are wind-dispersed up to distances of maximum 50 to 100 meters (Stephenson et al 2007), and could travel exceptionally up to 1 km (Rotheram 1983). Seeds and seedling require moist microhabitats for germination and establishment, including the presence of bryophyte mats (Casati et al, 2022).

A.6 How high is the potential negative impact of the plant on native species, habitats and ecosystems in the area under assessment?

High impact with a low uncertainty: *R. ponticum* forms monospecific stands with a dense and permanent canopy preventing the development of native species; it has the potential to prevent natural regeneration of native trees and to outcompete many species in wood- and heathlands. Competition is favoured by the production of allelopathic compounds. This species is poorly consumed by herbivores and its litter is hardly degraded by soil and water organisms (Branquart et al 2007). It is also known to affect consumer assemblages and food chains. The nectar of *R. ponticum* flowers is toxic to many pollinators, such as solitary bee and honeybee species native to the British Isles, but not to a common bumblebee species (Tiedeken et al. 2016).

¹ EPPO (2012) EPPO Prioritization process for invasive alien plants. EPPO Bulletin 42, 463-474.

A.7 How high is the potential negative impact of the plant on agriculture, horticulture or forestry in the area under assessment?

High with a low uncertainty: *R. ponticum* has a major impact on forestry through direct decrease regeneration and recruitment and as a major vector of two serious forest fungal pathogens, *Heterobasidion annosum* and *Phytophthora spp.*, that may cause the mortality of a wide range of deciduous and conifer trees (Branquart et al 2007, Casati et al 2022).

A.8 How high are the potential additional impacts (e.g. on animal and human health, on infrastructures, on recreational activities, other trade related impacts such as market losses)?

A positive impact has been suggested, through entrance fees in parks during the flowering period of the species (Dehnen-Schmutz et al. 2004).

Outcome of Section A: *Rhododendron ponticum* is included on the EPPO Observation List

		A5 -Spread potential		
		Low	Medium	High
Adverse impacts (maximum rating from questions A6, A7 and A8.	Low	List of minor concern	List of minor concern	List of minor concern
	Medium	List of minor concern	Observation List	Observation List
	High	Observation List	Observation List	List of invasive alien plants

Alternanthera sessilis is not considered further. The assessment stops here.

B. Prioritization process scheme for the identification of invasive alien plants for which a PRA is needed

B.1 Is the plant species internationally traded or are there other existing or potential international pathways?

B.2 Is the risk of introduction by these international pathways identified to be superior to natural spread?

B.3 Does the plant species still have a significant area suitable for further spread in the area under assessment?

Outcome of section B:

Selected references

Branquart Etienne, Vanderhoeven Sonia, Van Landuyt Wouter, Van Rossum Fabienne, Verloove Filip (2007): Harmonia database: *Rhododendron ponticum* L.. Harmonia version 1.2, Belgian Forum on Invasive Species, accessed on 26.4.2023 from: <http://ias.biodiversity.be>

Dehnen-Schmutz, K, C Perrings, M Williamson (2004): Controlling *Rhododendron ponticum* in the British Isles: an economic analysis. *J Environ Manage.* 70(4):323–332. DOI:10.1016/j.jenvman.2003.12.009.

Marion Casati, Thomas Kichey & Guillaume Decocq (2022): Monographs on Invasive Plants in Europe: *Rhododendron ponticum* L., *Botany Letters*, DOI: 10.1080/23818107.2022.2052182

Milne, RI, RJ Abbott (2000): Origin and evolution of invasive naturalized material of *Rhododendron ponticum* L. in the British Isles. *Mol Ecol.* 9(5):541–556. DOI:10.1046/j.1365-294x.2000.00906.x

Stephenson, C.M., Kohn, D.D., Park K.J., Atkinson, R., Edwards, C. & Travis, J.M. (2007): Testing mechanistic models of seed dispersal for the invasive *Rhododendron ponticum* (L.). *Perspectives in Plant Ecology, Evolution and Systematics*, 9. 15-28.

Tiedeken, EJ, PA Egan, PC Stevenson, GA Wright, MJF Brown, EF Power, I Farrell, SM Matthews, JC Stout. (2016): Nectar chemistry modulates the impact of an invasive plant on native pollinators. *Funct Ecol.* 30 (6):885–893. DOI:10.1111/1365-2435.12588.