

# controlinroad - Controlling the spread of invasive alien plant species along roadsides with innovative methods

Swen Follak<sup>1</sup>, Matthias Eberius<sup>2</sup>, Alexander Fürdös<sup>3</sup>, Norbert Sedlacek<sup>4</sup>, Friederike Trognitz<sup>5</sup>

<sup>1</sup>Austrian Agency for Health and Food Safety, <sup>2</sup>Zasso GmbH, <sup>3</sup>AANTA AB, <sup>4</sup>HERRY Consult GmbH, <sup>5</sup>Austrian Institute of Technology

## Introduction

Road construction and maintenance play a significant role in facilitating the spread of invasive alien plant species (IAPs). Therefore, applied strategies to manage this invasion pathway are needed. In this respect, the project Controlinroad ([www.controlinroad.org](http://www.controlinroad.org)) was launched in 2017. The main aims are (1) to compile a list of IAPs found along roadsides, (2) to review current control methods and legislation with regard to IAPs and road construction and maintenance, (3) to test and evaluate innovative control methods, and finally (4) to apply a cost-benefit analysis of proposed control methods.

## Compilation of a list of IAPs along roadsides

### Methods

- A survey of IAPs associated with roads was carried out in seven selected European countries (AT, DE, IR, NL, NO, SI, SE<sup>1</sup>).
- National lists of IAPs and the List of Invasive Alien Species of Union concern<sup>2</sup> (EU) formed the basis of the list.
- Species were checked (literature, expert opinion) for their occurrence along roadsides in each country (i.e. ability to grow in vegetated strips laterally from the pavement to the adjoining land-use type).
- Information on the life-form, origin and the basic pathways of introduction of the IAPs were noted.
- Classification according to EPPO<sup>3</sup> (IAP List, A2 List, Observation List) was added.

Tab. 1: Problematic invasive alien plants that occur along roadsides in seven selected European countries.

Species	Country	EU <sup>2</sup> EPPO <sup>3</sup>
<i>Ailanthus altissima</i>	AT, DE, NL, SI	IAP List
<i>Ambrosia artemisiifolia</i>	AT, DE, NL, SI	IAP List
<i>Amelanchier spicata</i>	NO, SE	IAP List
<i>Asclepias syriaca</i>	AT	EU
<i>Bidens frondosa</i>	SI	Obs. List
<i>Buddleja davidii</i>	AT, IE, SI	IAP List
<i>Cornus sericea</i>	NO	IAP List
<i>Fallopia japonica</i>	AT, DE, NL, IE, NO, SE, SI	IAP List
<i>Fallopia sachalinensis</i>	AT, DE, NL, IE, NO, SI	IAP List
<i>Fallopia x bohemica</i>	AT, DE, NL, IE, NO, SI	IAP List
<i>Gunnera tinctoria</i>	IE	IAP List, EU
<i>Helianthus tuberosus</i>	AT, SI	IAP List
<i>Heracleum mantegazzianum</i>	AT, DE, NL, IE, NO, SE	IAP List, EU
<i>Heracleum persicum</i>	NO, SE	A2 List, EU
<i>Impatiens glandulifera</i>	AT, DE, NL, IE, NO, SE, SI	IAP List, EU
<i>Lupinus polyphyllus</i>	DE, NO, SE, SI	Obs. List
<i>Prunus serotina</i>	NL	IAP List
<i>Senecio inaequidens</i>	AT, DE, NL, NO, SE, SI	IAP List
<i>Solidago canadensis</i>	AT, DE, NL, NO, SE, SI	IAP List
<i>Solidago gigantea</i>	AT, DE, NL, NO, SE, SI	IAP List

### Results

- The assembled list comprises 89 species from 31 plant families.
- The highest number of IAPs was identified for NO (45), followed by SI (29) and SE (24), and the lowest for IE (12).
- Species introduced for horticulture dominate the list (65%), followed by cultivation and forestry purposes (15%) and as a contaminant (17%).
- Five species are on the List of Invasive Alien Species of Union concern. One species is on the EPPO A2 List of pests recommended for regulation as quarantine pests and 16 are listed on the IAP list of EPPO (Tab. 1, Fig. 1).
- Emerging IAPs: *Asclepias syriaca*, *Bunias orientalis*, *Cotoneaster* sp., *Dittrichia graveolens*.



Fig. 1: Commonly found along roadsides (1) *Fallopia* species, (2) *Ambrosia artemisiifolia*, while (3) *Asclepias syriaca* is comparatively rare but populations are increasing.

### Conclusions

- The list highlights the IAPs that the selected countries should primarily focus on in terms of monitoring, containment and control effort.

### Next steps

- Review current control methods and legislation.
- Test of innovative control methods: (1) application of high frequency high voltage electrical power, and (2) use of native seed mixtures in combination with beneficial plant microbes.

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Further information:  
[www.controlinroad.org](http://www.controlinroad.org)

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<sup>1</sup> AT = Austria, DE = Germany, NL = Netherlands, IE = Ireland, NO = Norway, SE = Sweden, SI = Slovenia;

<sup>2</sup> EU Regulation 1143/2014; <sup>3</sup> EPPO classification see <https://www.eppo.int/>

Source: Follak S., Eberius M., Essl F., Fürdös A., Sedlacek N., Trognitz F. (2018), EPPO Bulletin (in press)