

Mapping of invasive plant species

Introduction

Invasive alien species are non-native species whose introduction and / or spread outside their natural past or present ranges pose a threat to biodiversity. Invasive alien species occur in all major groups including animals, plants, fungi and micro-organisms, and are considered as one of the most important reasons for biodiversity loss worldwide (after direct habitat loss or destruction).

About 10,000 alien species have been registered in Europe. Some were imported as ornamental or melliferous plants, which began to spread from parks and gardens to the surrounding area and occupy new areas. They are characterised by high reproductive capacity and resistance to pests. Many of these species currently form in lush vegetation, most often along waterways, roads, railways, abandoned areas, but also in native plant communities.

Invasive species can cause great damage to native species by competing with them for food, eating them, spreading diseases, causing genetic changes through inter-breeding with them and disrupting various aspects of the food web and the physical environment. Their removal is very problematic and requires systematic interventions.

Learn about the problem

Use the internet, (scientific / popular) literature or in collaboration with experts to find available information about invasive plant species. Also focus on the following questions:

- What negative impacts do invasive plants have on local habitats or human health?
- What is the difference between the original and the alien species?
- What are potentially invasive plants?
- What invasive plant species occur in your area?
- How to properly remove invasive plants?

Recommended resources

[Source 1:](#)

Actual and potential future alien plant invasion hotspots under two emissions scenarios



[Source 2:](#)

Invasive alien species: a growing problem for environment and health



[Source 3:](#)

100 of the Worst



[Source 4:](#)

European Alien Species Information Network - EASIN



Verify the occurrence of a problem in your area with your own research

Goal

Students can identify the negative impacts of invasive plants on local habitats, know how to remove invasive plants, and identify measures to prevent invasive plants from spreading.

Tools & Materials

- online maps (e.g. Google maps)
- map of territory or GPS device
- field guide for identifying invasive plant species (characteristic, photograph) or a mobile plant determination application (e.g. Plantnet)
- recording card
- camera / mobile to record activity

Implementation

If you do not have information about the occurrence of invasive plant species in your area, explore the area through online maps (e.g. Google maps) and select their possible sites. Adjust the size of the area in which you will map invasive plant species to the number of people involved and the time you can devote to this activity. Mark the boundaries of the selected territory on the map and divide it into smaller sections that you assign to pairs or groups. Before you start mapping, find your region's invasive list of plants on the internet. Add the list to the record card. During the mapping, make photo documentation for possible species control or additional determination.

Mapping process

Take the determination keys / field guide, a mobile phone with a plant identification application installed, a recording card, a territory map or a GPS device, and camera to the terrain. Scroll through the selected area and record the recognised plant invasive species in the recording card and map, respectively GPS devices. Make photo documentation and assign a photo code to the photo card so that the photo can be clearly matched to the listing in the recording card. Assign a score to each species based on its presence by underlining the corresponding score from 0 to 3 in the table. In addition, assign a score to the attitude of the owner and the municipality regarding the presence of alien species on the monitored area, highlighting the corresponding scores. After completing the mapping of the individual parts of the territory, elaborate the final evaluation. After completing mapping of individual parts of the territory, process the final evaluation. Try to establish a hierarchy of invasive species according to frequency of their occurrence in your area.

Analysis of results and proposal of solution

Have you identified invasive plant species in your area? If so, what kind of prevalence? What is the likely cause of their occurrence? Is it possible to prevent them from spreading? What solutions would you use to remove them? What other measures could you take? Write down your ideas and select the ones you can implement.

Implementation of the solution and evaluation

Have you managed to remove some of the invasive plant species in your area? Was the method chosen effective or do you know about a more appropriate method? Did you inform your community or the landlord about your findings? How did they react? What do you think would be an acceptable total score for your area?

How did you feel after implementing the selected solution?

Frustrated	Disappointed	Rather Negative	Neutral	Rather Positive	Satisfied	Enthusiastic
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Publicity

Record and share photos on social networks with [#mybioprofile](#) during the activity. Help others to join us.

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Example

Recording Card						
Class	8.A					
School	Leonardo's Elementary School					
Municipality	Florence					
Monitoring period	25.-26.06.2019					
1. Invasive Plants:	Photo	Location	We have not seen the incidence	Occurs only in small groups up to 100 m² in total	Occurs in small groups up to 1000 m² in total m²	Generates continuous surfaces totaling over 1000 m²
<i>genus Fallopia</i>	ID_0001, ID_0002	N 48° 10' 47.0" E 17° 06' 04.0"	0	1	2	<u>3</u>
<i>genus Solidago</i>			<u>0</u>	1	2	3
<i>Helianthus tuberosus</i>			<u>0</u>	1	2	3
<i>genus Impatiens</i>			<u>0</u>	1	2	3
<i>Aillanthus altissima</i>			<u>0</u>	1	2	3
<i>Heracleum mantegazzianum</i>			<u>0</u>	1	2	3
2. Owners or users of land with invasive plant species:	They are well known and are trying to make measures to remove these species as thoroughly and regularly as possible. They are known and partly take measures to remove these species. They are known but do not take any action to remove these species. They are not known, no measures are taken to remove them.					0 1 <u>2</u> 5
3. Does the municipality implement measures to remove invasive species in cooperation with landowners or land users?	Significantly. Partially. Just a few. Not at all.					0 1 <u>2</u> 3
Total score:						7

Recording card - Occurrence of invasive plants in our area

Recording Card						
Class						
School						
Municipality						
Monitoring period						
1. Invasive Plants: (rows should be added as needed)	Photo	Location	We have not seen the incidence	Occurs only in small groups up to 100 m² in total	Occurs in small groups up to 1000 m² in total m²	Generates continuous surfaces totaling over 1000 m²
			0	1	2	3
			0	1	2	3
			0	1	2	3
			0	1	2	3
			0	1	2	3
			0	1	2	3
2. Owners or users of land with invasive plant species:	They are well known and are trying to make measures to remove these species as thoroughly and regularly as possible.					0
	They are known and partly take measures to remove these species.					1
	They are known but do not take any action to remove these species.					2
	They are not known, no measures are taken to remove them.					5
3. Does the municipality implement measures to remove invasive species in cooperation with landowners or land users?	Significantly.					0
	Partially.					1
	Just a few.					2
	Not at all.					3
Total score:						