

# MANAGEMENT PLAN TO PREVENT INVASIVE ALIEN SPECIES

## SUPPLEMENT TO THE MANAGEMENT PLANS ADOPTED ON 13 MARCH 2018, 23 MAY 2019 AND 27 OCTOBER 2020

Adopted by decision of the Ministry of Agriculture and Forestry on 8  
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### Contents

MANAGEMENT PLAN TO PREVENT INVASIVE ALIEN SPECIES SUPPLEMENT TO PLANS ADOPTED ON 13 MARCH 2018, 23 MAY 2019 AND 27 OCTOBER 2020	1
1 Background to the project	2
1.1 Invasive (or introduced) species	2
1.2 Preparation and adoption of the management plan	3
1.3 Key content of the management plan	3
1.4 Implementation of the management plan and funding for the measures	4
1.5 Pathways of unintentional release and spread	5
2 Management plan	6
2.1 Classification of measures; species-specific measures and targeting	6
2.2 Recommended measures for the general management of alien species	8
3 Action plan on pathways of spread	10
3.1 Classification of pathways of spread	10
3.2 Results	10
<b>Table 1.</b> Study on pathways of spread. Pathways of spread detected in Finland are marked with an x and potential pathways of spread with an (x).	11
3.3 Goals for management of primary pathways and prevention of spread	12
3.4 Primary measures	12

# 1 Background to the project

## 1.1 Invasive (or introduced) alien species

Alien species are species that humans spread to new areas. According to the EU Regulation on Invasive Alien Species<sup>1</sup>, an alien species is considered invasive if its release or spread has been found to threaten or adversely impact upon biodiversity and related ecosystem services. The risks caused by alien species may increase with climate change. On the other hand, alien species thrive in heavily disturbed and modified environments, so the good state of natural habitats reduces the spreading of alien species.

Invasive alien species must not be brought into the territory of the European Union, transferred from one Member State to another, bred, grown, sold, kept or introduced into the environment. Finland and the other EU Member States must seek to eradicate invasive alien species already found in their territories or prevent them from spreading.

Eradicating invasive alien species and preventing them from spreading will hereinafter be referred to as the 'prevention of alien species'. The purpose of the prevention of alien species is to safeguard biodiversity and the function of ecosystems, as well as the benefits of these for human well-being.

The EU Regulation on Invasive Alien Species requires the Member States to implement effective management measures to prevent widely spread alien species. Each Member State decides on such measures independently. According to the Invasive Alien Species Regulation, these measures must not unreasonably burden the environment, and their benefits must outweigh their costs. In addition, the Member States must prioritise the measures according to the size of the risk caused by the target species and the cost-efficiency of the measures. In accordance with the EU Regulation, management measures must not have adverse impacts on the environment or human health. The measures to eradicate invasive alien animal species, control their populations and limit their spreading must be implemented in a manner that will save the animals from any avoidable pain, distress or suffering.

The invasive alien species to be prevented are specified in the list of invasive alien species of Union concern, which is adopted by the European Commission. The first Union list of invasive alien species entered into force on 3 August 2016<sup>2</sup>. The list was amended with 12 species on 2 August 2017 (1st update of the Union list)<sup>3</sup> and with 17 species on 15 August 2019 (2nd update of the Union list)<sup>4</sup>.

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<sup>1</sup> Regulation (EU) No 1143/2014 of the European Parliament and of the Council on the prevention and management of the release and spread of invasive alien species ([link 1](#)).

<sup>2</sup> Commission Implementing Regulation (EU) 2016/1141 of 13 July 2016 of Union concern ([link 2](#)).

<sup>3</sup> Commission Implementing Regulation (EU) 2017/1263 of 12 July 2017 updating the list of invasive alien species of Union concern established by Implementing Regulation (EU) 2016/1141 pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council ([link 3](#)).

<sup>4</sup> Commission Implementing Regulation (EU) 2019/1262 of 25 July 2019 amending Implementing Regulation (EU) 2016/1141 to update the list of invasive alien species of Union concern ([link 4](#)).

## 1.2 Preparation and adoption of the management plan

According to the Act on Managing the Risk Caused by Alien Species<sup>5</sup>, the Ministry of Agriculture and Forestry approves the alien species management plan to determine and control prevention measures. In 2020, for the purpose of the plan, the Ministry commissioned a study on the extent to which species included in the 2nd update of the Union list are found in Finland and the most cost-effective means to prevent them.

The study and the proposed plan for the prevention of invasive alien species submitted on its basis were prepared by the Natural Resources Institute Finland as part of the EU-HAVI3 project (Distribution, pathways of spread, risks and prioritisation of management measures of species in the 2nd update to the list of invasive alien species of Union concern).

## 1.3 Key content of the management plan

The primary management measures in which Finland should invest were selected based on the risk arising from alien species and the costs and benefits of the prevention measures. The risk assessment is based on the characteristics, harmful effects, current distribution and current stage of spread of the species, their opportunities to spread and thrive in our climate, and the prevention measures available.

Invasive alien species at various stages of spread require varying prevention measures. The most effective option is to completely prevent a species from being introduced or spreading into a new area, if possible. If a species is widely spread and its prevention or eradication is not technically possible or financially sensible, minimising its harmful effects by controlling the population or preventing the species from spreading into new areas can be set as the goal.

### Examples from the plan

- *Lepomis gibbosus* has locally established populations in Southwest Finland. Efforts should be made to prevent further spread of the species and its eradication from ponds to which it has been stocked is recommended. In addition, efforts to raise awareness about the species' adverse impacts and risks and prohibitions related to the species will be increased. Messaging will be targeted especially at recreational fishers and aquarium enthusiasts.
- *Ailanthus altissima*, *Humulus scandens* and *Gymnocoronis spilanthoides* have been occasionally used as garden or aquarium plants in Finland. Recommended management measures for these species include raising awareness about the ban on their import and release. In addition, the eradication of existing specimens is recommended.

Raising awareness about alien species through multichannel messaging continues to be necessary in order to prevent the spread of invasive alien species.

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<sup>5</sup> Act on Managing the Risk Caused by Alien Species (1709/2015, Alien Species Act), Section 9 ([link 5](#)).

## 1.4 Implementation of the management plan and funding for the measures

In accordance with the Alien Species Act, the Centres for Economic Development, Transport and the Environment (ELY Centres) monitor compliance with the bans and obligations included in the EU Regulation on Invasive Alien Species and national legislation<sup>6</sup>. The bans and obligations as well as the statutory means to enhance compliance facilitate the prevention of invasive alien species. Bans and obligations may be used when the party responsible for the spread of an invasive alien species can be expressly identified. However, prevention of invasive alien species mostly concerns populations whose origin and method of spread are not known and there is no party responsible for prevention. The management plan addresses the prevention of such populations of invasive alien species in particular.

The Invasive Alien Species Act does not impose the task of implementing the management plan on any specific party. The authorities are responsible for the prevention of alien species in accordance with their jurisdiction based on other laws. ELY Centres and local authorities are responsible for promoting environmental protection in their respective areas<sup>7</sup>. Local authorities must monitor and promote environmental protection in their areas in order to ensure a healthy, pleasant, stimulating and ecologically sustainable living environment for municipal residents by protecting, maintaining and developing natural and other environments<sup>8</sup>. For example, the Finnish Transport Infrastructure Agency is responsible, in addition to its other duties, for maintaining the state road and railway networks and co-ordinating measures related to these<sup>9</sup>. The public administrative duties of Metsähallitus include, for example, the maintenance and use of the national network of nature reserves and the maintenance of other land and water areas and assets intended for the fulfilment of these duties<sup>10</sup>. In 2019, the duties of the Finnish Wildlife Agency and their funding remained unchanged, even though the control of the raccoon dog and certain other previous game species was transferred from the Hunting Act (615/1993) to the Alien Species Act by an amendment to the latter.

The EU Regulation on Invasive Alien Species and the national legislation do not require the prevention of all occurrences of alien species. Management measures must be planned and implemented paying attention to the damage caused by the invasive alien species and its likelihood, as well as to the costs of the measures relative to their benefits. Based on the study carried out for the management plan, it is fair to say that the current prevention measures – such as the work carried out by the ELY Centres and local authorities, voluntary measures and provision of information and advice – also meet the requirements of the alien species legislation.

The management plan describes the responsible parties and co-operation partners for the implementation of the measures, as well as presenting a schedule for implementation. The management plan is intended for use by the authorities and other operators in their efforts to prevent invasive alien species, with a view to allocating the measures and the necessary resources as effectively as possible.

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<sup>6</sup> The embargo on import into the EU area is monitored by Finnish Customs. The Southern Finland Regional State Administrative Agency supervises compliance with the permits it grants for the use of invasive alien species.

<sup>7</sup> Nature Conservation Act (1096/1996), section 6.

<sup>8</sup> Act on the Administration of Municipal Environmental Protection (64/1986), section 3.

<sup>9</sup> Act on the Finnish Transport Infrastructure Agency (862/2009), section 2.

<sup>10</sup> Act on Metsähallitus (234/2016), section 5.

The Natural Resources Institute Finland co-ordinates the measures presented in the management plan and their monitoring. Under the supervision of the Natural Resources Institute Finland, a national network of experts in alien species supports the monitoring of alien species.

As noted above, the authorities carry out their respective measures to prevent invasive alien species as part of their statutory duties. In line with the 2019 Government Programme, the Ministry of Agriculture and Forestry was granted EUR 0.8 million in budget funding for 2020 in order to enhance the prevention of invasive alien species and EUR 0.5 million for 2021. This budget was used to allocate one additional person-year to the operating expense item for the Centres for Economic Development, Transport and the Environment in order to enhance the national co-ordination of management of alien species and another two additional person-years to the Natural Resources Institute Finland's budget item in order to enhance messaging on alien species and management of risks caused by such species. Parliament decides on the budget every year (incl. the 2019 Government Programme items during the period from 2022 to 2023). It is possible to apply for separate funding for research, analysis and development projects aiming to improve the management of alien species on a case-by-case needs basis; for example, through the Government's joint analysis, assessment and research programme (VN TEAS) or from the EU LIFE+ programme.

## **1.5 Pathways of unintentional release and spread**

According to the Alien Species Act, the Ministry of Agriculture and Forestry also approves the action plan on the pathways of unintentional spread of invasive alien species. The plan is intended to help with the management and steering of measures to prevent the species included in the EU list of alien species from spreading in Finland unintentionally – on imported goods or vehicles, for example.

In 2020, the ministry carried out a study concerning the plan as part of the EU-HAVI3 project mentioned above. Based on the study, the pathways of unintentional release and spread of invasive alien species in the EU were analysed, and a proposal was prepared for primary measures to limit and prevent the spreading of invasive alien species through these pathways.

## 2 Management plan

### 2.1 Classification of measures; species-specific measures and targeting

Based on the risk analysis, the 17 species included on the updated list of species of national concern can be divided into three groups according to their current distribution, risk of spread, and the necessary primary management measures.

#### 2.1.1 Established species

Group 1 consists of one species: *Lepomis gibbosus*.

*Lepomis gibbosus*, which belongs to this group, has locally established populations in Southwest Finland, where it has been introduced into ponds in at least nine municipalities.

Primary measures for *Lepomis gibbosus* are as follows:

#### **Known populations of *Lepomis gibbosus* will be eradicated wherever possible.**

- Pond-specific management measures and the feasibility of their implementation will be planned.
- *Lepomis gibbosus* and other invasive alien species will be eradicated in accordance with pond-specific plans using methods that ensure that no harm is caused to other species.
- Co-operation with owners of the water areas will be ensured in the prevention work.
  - Responsible parties and co-operation partners: ELY Centres, Natural resources institute Finland, Finnish Environment Institute SYKE, local authorities in Southwest Finland, recreational fishing and water protection associations, nature conservation associations, fisheries areas, owners of water areas.
  - Schedule: 2021, to be continued until further notice.

#### **Ensuring that *Lepomis gibbosus* populations which cannot be eradicated do not cause adverse impacts.**

- *Lepomis gibbosus* habitats and populations will be monitored and a plan to limit their stocks will be prepared before adverse impacts emerge.
- Stocking density in *Lepomis gibbosus* populations is kept sufficiently low through means such as fishing in order to minimise adverse impacts.
- Co-operation with owners of the water areas will be ensured in the prevention work.
  - Responsible parties and co-operation partners: ELY Centres, Natural resources institute Finland, Finnish Environment Institute SYKE, local authorities in Southwest Finland, recreational fishing and water protection associations, nature conservation associations, fisheries areas, owners of water areas.
  - Schedule: 2021, to be continued until further notice.

## **Informing the public about all bans concerning the species, particularly the ban on release. Raising awareness about threats and adverse impacts of *Lepomis gibbosus* in order to stop the spread of the species.**

- Responsible parties and co-operation partners: Ministry of Agriculture and Forestry, Ministry of the Environment, ELY Centres, fisheries areas, local authorities in Southwest Finland, Natural Resources Institute Finland, Finnish Environment Institute SYKE, fisheries-based education institutions, Finnish Federation for Recreational Fishing, Federation of Finnish Fisheries Associations and other associations, including recreational fishing and water protection associations, nature conservation associations and media representatives.
- Schedule: to be started immediately, continuous.

### **2.1.2 Garden and aquarium plants found in Finland**

Group 2 consists of the species *Gymnocoronis spilanthoides*, *Ailanthus altissima* and *Humulus scandens*.

Species belonging to this group have been occasionally used in Finland as garden or aquarium plants. Recommended management measures for these species include raising awareness about the ban on their import and release. In addition, the eradication of existing specimens is recommended.

## **Horticulture professionals, garden retailers and garden and aquarium enthusiasts will be informed about the species' ban on import and release.**

- Responsible parties and co-operation partners: Ministry of Agriculture and Forestry, Ministry of the Environment, Natural Resources Institute Finland, Finnish Environment Institute SYKE, ELY Centres, Finnish Customs, Finnish Food Authority, Finnish Association of Landscape Industries, Taimistoviljelijät ry, Finnish Glasshouse Growers' Association, Hedelmä- ja marjanviljelijäin liitto ry, Dendrologian seura ry, other interest groups and NGOs, garden retailers and enthusiasts, aquarium retailers and enthusiasts.
- Schedule: continuous.

## **Growths of *Gymnocoronis spilanthoides*, *Ailanthus altissima* and *Humulus scandens* will be eradicated on sight.**

- Responsible parties and co-operation partners: ELY Centres, local authorities, landowners.
- Schedule: continuous.

### **2.1.3 Species with a low risk of spread**

Group 3 consists of the species *Cardiospermum grandiflorum*, *Lygodium japonicum*, *Ehrharta calycina*, *Lespedeza cuneata*, *Triadica sebifera*, *Prosopis juliflora*, *Andropogon virginicus*, *Salvinia molesta*, *Cortaderia jubata*, *Acacia saligna*, *Plotosus lineatus*, *Acridotheres tristis* and *Arthurdendyus triangulatus*.

Of the 13 species belonging to this group, only *Acridotheres tristis* has been encountered in Finland on one occasion, and *Plotosus lineatus* has been used occasionally as an aquarium fish in Finland and in nearby countries. All of the species in the group have a non-existent or low probability of surviving in the Finnish climate. For these species, monitoring their distribution outside Finland and providing information about the prohibition on importing them to Finland are currently sufficient management methods.

### **Monitoring the development of the species' distribution outside Finland with the help of the EU information support system, among other means.**

- Ministry of Agriculture and Forestry, Natural Resources Institute Finland, Finnish Environment Institute SYKE, Finnish Museum of Natural History, ELY Centres.
- Schedule: continuous.

### **Informing the public about the ban on import of the species.**

- Responsible parties and co-operation partners: Ministry of Agriculture and Forestry, Ministry of the Environment, Natural Resources Institute Finland, Finnish Environment Institute SYKE, ELY Centres, Finnish Customs, Finnish Food Authority, Finnish Association of Landscape Industries, Taimistoviljelijät ry, Finnish Glasshouse Growers' Association, Hedelmän- ja marjanviljelijäin liitto ry, Dendrologian seura ry, other interest groups and NGOs, garden retailers and enthusiasts, aquarium retailers and enthusiasts, recreational fishers.
- Schedule: continuous.

## **2.2 Recommended measures for the general management of alien species**

The measures listed below are needed for the general management of invasive alien species.

### **Awareness about alien species will be raised through multichannel communication:**

- Enhancing targeted messaging to local authorities, citizens and various interested parties, including aquarium retailers and enthusiasts, garden retailers, horticulture professionals, garden enthusiasts, pet retailers and enthusiasts, recreational and professional fishers, hunters, tourists.
- Activating citizens through messaging to report observations in the vieraslajit.fi website and participate in prevention and voluntary work. Encouraging education institutions to use materials on the vieraslajit.fi website and participate in projects on alien species.
- Messaging will also be used to encourage landowners and local authorities to be aware of their obligations concerning the prevention of invasive alien species found on their lands.
  - Responsible parties and co-operation partners: Ministry of Agriculture and Forestry, Ministry of the Environment, Ministry of Transport and Communications, research institutes, higher education institutions, ELY Centres, local authorities, Metsähallitus, National Resource Institute Finland, Finnish Environment Institute SYKE, Finnish Advisory Board for Invasive Alien Species, Finnish Game Centre, game management associations, Association of Finnish Local and Regional Authorities, Finnish Federation for Recreational Fishing, Finnish Hunters' Association, agricultural, forestry and horticulture interest groups, advisory organisations and education institutions, horticulture and nature conservation associations, local associations (including local history, sports, outdoors, nature and youth associations), aquarium and pet retailers, other businesses.
  - Schedule: continuous.



**Reporting on the vieraslajit.fi website about measures and observations in a uniform manner for all invasive alien species. Developing the monitoring system for preventive measures and its implementation.**

- Responsible parties and co-operation partners: Natural Resources Institute Finland; Finnish Environment Institute; Finnish Museum of Natural History; ELY Centres; local authorities, Finnish Wildlife Agency; Metsähallitus; Federation of Finnish Fisheries Associations; interest groups and advisory organisations in the agriculture, forestry and horticultural sectors; groups of enthusiasts (e.g. hunters, fishers, nature enthusiasts).
- Schedule: continuous.

## 3 Action plan on pathways of spread

### 3.1 Classification of pathways of spread

Pathways of spread of the 17 species included in the 2nd update to the list of invasive alien species of Union concern (Annex 1) were investigated by classifying them according to the categories of the UN Convention on Biological Diversity (CBD) (Harrower et al. 2018). The CBD divides pathways of spread into six categories, which are further divided into 44 subcategories (Table 1). The six categories can be divided into intentional (release into nature or escape from confinement) and unintentional (transport by contaminated organisms or by vectors) pathways, and into categories that describe both the pathway and spread (corridor or unaided dispersal) (Table 1). A species may have several pathways of spread. The study distinguished the pathways of spread detected in Finland from the potential pathways of spread of the species.

### 3.2 Results

#### Observed pathways of spread

Release into nature was a pathway of spread in the case of *Lepomis gibbosus*, which has been released intentionally by planting it in ponds in Southwest Finland.

Escape from confinement is a potential pathway of spread for three of the listed plant species. *Ailanthus altissima* is found in the botanical garden in Kaisaniemi, Helsinki. *Gymnocoronis spilanthoides* and *Humulus scandens* have been imported as aquarium and garden plants, respectively.

#### Potential pathways of spread

Plant species not native to Finland have several potential pathways of spread in all of the identified categories. The main potential pathway of spread is use as a garden or aquarium plant and resulting escape from confinement. Escape from confinement may also occur in other use of the plants (incl. use in horticulture, agriculture or forestry). Intentional release may occur only as the result of erosion control and/or landscape/flora/fauna 'improvement' using alien species. Plant species may spread in contaminated products as a byproduct of transportations of fauna, other flora, saplings, timber trade or habitat materials. Of these, the most likely pathway of spread to Finland is arrival with other plant material. Plant species may spread shorter distances along waterways. However, this is not a likely pathway of spread for these species.

Potential pathways of spread for *Plotosus lineatus* include natural distribution along waterways, spread with ballast water and possible use in aquariums. However, as the species' chances of success in the Baltic Sea are low, it is unlikely to spread naturally in Finland. The most potential pathway of spread for *Acridotheres tristis* is natural distribution (one specimen has been encountered in Finland). It could potentially spread into the country as a stowaway aboard a ship or as the result of being imported intentionally by humans as pets and released into the environment. Potential pathways of spread for *Arthurdendyus triangulatus* include introduction with contaminated goods, particularly plant nursery material. The species can also spread over short distances with plant material, animals, machinery and equipment.

**Table 1.** Study on pathways of spread. Pathways of spreading detected in Finland are marked with an x and potential pathways of spreading with an (x).

	FLORA													FISH		BIRDS	INVERTEBRATES
	Gymnocoronis	Ailanthus altissima	Cardiospermum	Humulus scandens	Lygodium japonicum	Einharta calycina	Lespedeza cuneata	Triadica sebifera	Prosopis juliflora	Andropogon virginicus	Salvinia molesta	Cortaderia jubata	Acacia saligna	Lepomis gibbosus	Plotosus lineatus	Acridotheres tristis	Arthurdendyus triangulatus
<b>INTENTIONAL</b>																	
<b>MOVEMENT OF COMMODITY</b>																	
<b>RELEASE IN NATURE</b>																	
Biological control																	
Erosion control	(x)				(x)			(x)			(x)	(x)					
Fish stocking														X			
Game stocking																	
Landscape/flora/fauna 'improvement' with alien species	(x)				(x)	(x)		(x)				(x)					
Release for conservation or population management purposes																	
Release for other purposes (furs, transport, haulage, medicinal use)														X			
Other intentional release													X	(x)	(x)		
<b>ESCAPE FROM CONFINEMENT</b>																	
Agriculture (incl. bioenergy)						(x)	(x)		(x)			(x)					
Aquaculture																	
Botanical garden/zoo/aquarium (excl. home aquariums)	X				(x)	(x)		(x)	(x)			(x)					
Pet, aquarium and terrarium species and live food for such species	X										(x)					(x)	
Farmed animals (incl. animals left under minimal supervision)																	
Forestry (incl. reforestation)	(x)							(x)	(x)				(x)				
Fur farming																	
Horticulture	(x)												(x)				
Ornamental purpose (other than horticulture)	(x)	(x)	(x)	X	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)				
Research and ex-situ breeding																	
Live food and live bait																	
Other escape from confinement																	
<b>UNINTENTIONAL</b>																	
<b>TRANSPORT BY CONTAMINATED ORGANISMS</b>																	
Contaminant nursery material					(x)												(x)
Contaminated bait																	
Food contaminant (incl. live food)																	
Contaminant on animals (excl. parasites, species transported by host/vector)						(x)	(x)	(x)	(x)			(x)					(x)
Parasites on animals (incl. species transported by host/vector)																	
Contaminant on plants (excl. parasites, species transported by host/vector)					(x)					(x)	(x)	(x)					(x)
Parasites on plants (incl. species transported by host/vector)																	
Seed contaminant																	
Timber trade	(x)																
Transportation of habitat material					(x)							(x)					(x)
<b>VECTOR</b>																	
<b>TRANSPORT BY VECTORS</b>																	
Angling/fishing equipment	(x)																
Container/bulk																	
Hitchhikers in or on airplane																	
Hitchhikers on ship/boat (excl. ballast water and hull fouling)																(x)	
Machinery and equipment	(x)	(x)	(x)	(x)	(x)	(x)	(x)		(x)		(x)						(x)
People and their luggage/equipment (in particular tourism)	(x)			(x)					(x)		(x)						
Organic packaging material (in particular wood packaging)					(x)												
Ship/boat ballast water														(x)			
Ship/boat hull fouling																	
Other vehicles																	
Other means of transport																	
<b>CORRIDOR &amp; DISPERSAL</b>																	
<b>DISPERSAL</b>																	
<b>CORRIDOR</b>																	
Interconnected waterways	(x)	(x)	(x)	(x)		(x)		(x)	(x)		(x)		(x)		(x)		
Tunnels and land bridges																	
<b>UNAIDED</b>																	
Natural dispersal of an alien species across borders														(x)	(x)		

### **3.3 Goals for management of primary pathways and prevention of spread**

#### **3.3.1 Prevention of intentional spreading**

In the case of *Lepomis gibbosus*, prevention of intentional spreading and release is essential in preventing the spread of the species.

#### **3.3.2 Escape prevention**

Escape prevention is a key measure in terms of preventing the spread of alien species under human control. Among species in Finland to which this measure applies are the locally established *Lepomis gibbosus* as well as *Gymnocoronis spilanthoides*, *Ailanthus altissima* and *Humulus scandens*, which are occasionally used as garden and aquarium plants. In the case of these species, educating the public about the ban on their import is also important.

#### **3.3.3 Transport by contaminated products or vectors**

Transport by contaminated products or by vectors may occur both from abroad to Finland and within Finland. In the spread from abroad to Finland, potential major pathways of transport by contaminated products are transport as contaminants on the seeds and saplings of garden plants. However, this pathway of spread is unlikely for the listed species. *Arthurdendyus triangulatus* can potentially spread into Finland as a contaminant in nursery material, but the species is unlikely to succeed in the wild.

### **3.4 Primary measures**

#### **Targeted civic awareness and general messaging:**

- Information will be provided about species governed by legislation.
- Information will be provided to citizens about the EU Regulation and its implementation through the Alien Species Act, as well as the species that the legislation concerns. This measure could go a long way in preventing the intentional and unintentional sale, purchase and cultivation and release into nature. Of the listed species, messaging will be targeted particularly at *Gymnocoronis spilanthoides*, *Ailanthus altissima* and *Humulus scandens* in order to prevent their further introduction in Finland as garden plants. In addition, civic awareness will be raised about the bans on the aquarium use of *Lepomis gibbosus* and its release into nature.
  - Responsible parties and co-operation partners: Ministry of Agriculture and Forestry, Ministry of the Environment, Natural Resources Institute Finland, Finnish Environment Institute SYKE, Finnish Food Authority, ELY Centres, local authorities, hobbyist associations, associations and NGOs, businesses.
  - Schedule: continuous, no later than 2021.

## Sources and background material

Harrower, CA., Scalera R., Pagad, S., Schönrogge, K. & Roy, HE. 2018. Guidance for interpretation of CBD categories on introduction pathways. <https://circabc.europa.eu/sd/a/738e82a8-f0a6-47c6-8f3b-aeddb535b83b/TSSR-2016-010%20CBD%20categories%20on%20pathways%20Final.pdf>

### Annex 1. Second update of the list of Invasive Alien Species of Union concern (entry into force 15 August 2019)

#### FLORA

[Tree of heaven](#) (*Ailanthus altissima* (Mill.) Swingle)

[Balloon vine](#) (*Cardiospermum grandiflorum* Sw.)

[Japanese hop](#) (*Humulus scandens* (Lour.) Merr.) *Humulus japonicas*

[Vine-like fern](#) (*Lycodium japonicum* (Thunb.) Sw.)

[Perennial veldt grass](#) (*Ehrharta calycina* SM.)

[Chinese bushclover](#) (*Lespedeza cuneata* (Dum.Cours.) G.Don)

[Chinese tallow](#) (*Triadica sebifera* (L.) Small (*Sapium sebiferum* (L.) Roxb.)

[Mesquite](#) (*Prosopis juliflora* (Sw.) DC.)

[Broomsedge bluestem](#) (*Andropogon virginicus* L.)

[Purple pampas grass](#) (*Cortaderia jubata* (Lemoine ex Carrière) Stapf)

[Golden wreath wattle](#) (*Acacia saligna* (Labill.) H.L.Wendl.)

#### AQUATIC PLANTS

[Senegal tea plant](#) (*Gymnocoronis spilanthoides* (D.Don ex Hook. & Arn.) DC.)

[Salvinia moss](#) (*Salvinia molesta* D.S. Mitch. (*Salvinia adnata* Desv.))

#### BIRDS

[Common myna](#) (*Acridotheres tristis* Linnaeus, 1766)

#### FISH

[Pumpkinseed](#) (*Lepomis gibbosus* Linnaeus, 1758) (15 August 2019)

[Striped eel catfish](#) (*Plotosus lineatus* (Thunberg, 1787))

#### OTHER INVERTEBRATES

<http://www.vieraslajit.fi/fi/lajit/MX.5014780/show> New Zealand flatworm (*Arthurdendyus triangulatus* (Dendy, 1894) Jones and Gerard (1999)) (15 August 2019)

Original source: Commission [Implementing Regulation](#)(EU) 2016/1141 of 13 July 2016 adopting a list of invasive alien species of Union concern pursuant to pursuant to [Regulation \(EU\) No 1143/2014 of](#)

[the European Parliament and of the Council](#). The list has been updated by Commission [Implementing Regulation \(EU\) 2017/1263](#) of 12 February 2017 and [Commission Implementing Regulation \(EU\) 2019/1262](#) of 25 July 2019.