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EU4GREEN
RECOVERY
EAST

GUIDANCE PAPERS TO IMPLEMENT THE EU REGULATION 1143/2014

Implementing partners:

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Remember

https://environment.ec.europa.eu/topics/nature-and-biodiversity/invasive-alien-species_en

The European Commission provides support to the implementation of the Regulation, amongst others, through several guidance papers related to:

1. **Prevention**
2. **Early detection and rapid eradication**
3. **Management**

- In addition, several other EU Implementation Regulations:
  - updating the list of invasive alien species of Union concern (2025, 2022, 2019, 2017, 2016)
  - specifying the technical format for reporting by the Member States (2024)
  - regarding to risk assessments in relation to invasive alien species (2018)
  - adopting the format of the document serving as evidence for the permit issued by the competent authorities of Member States (2016)

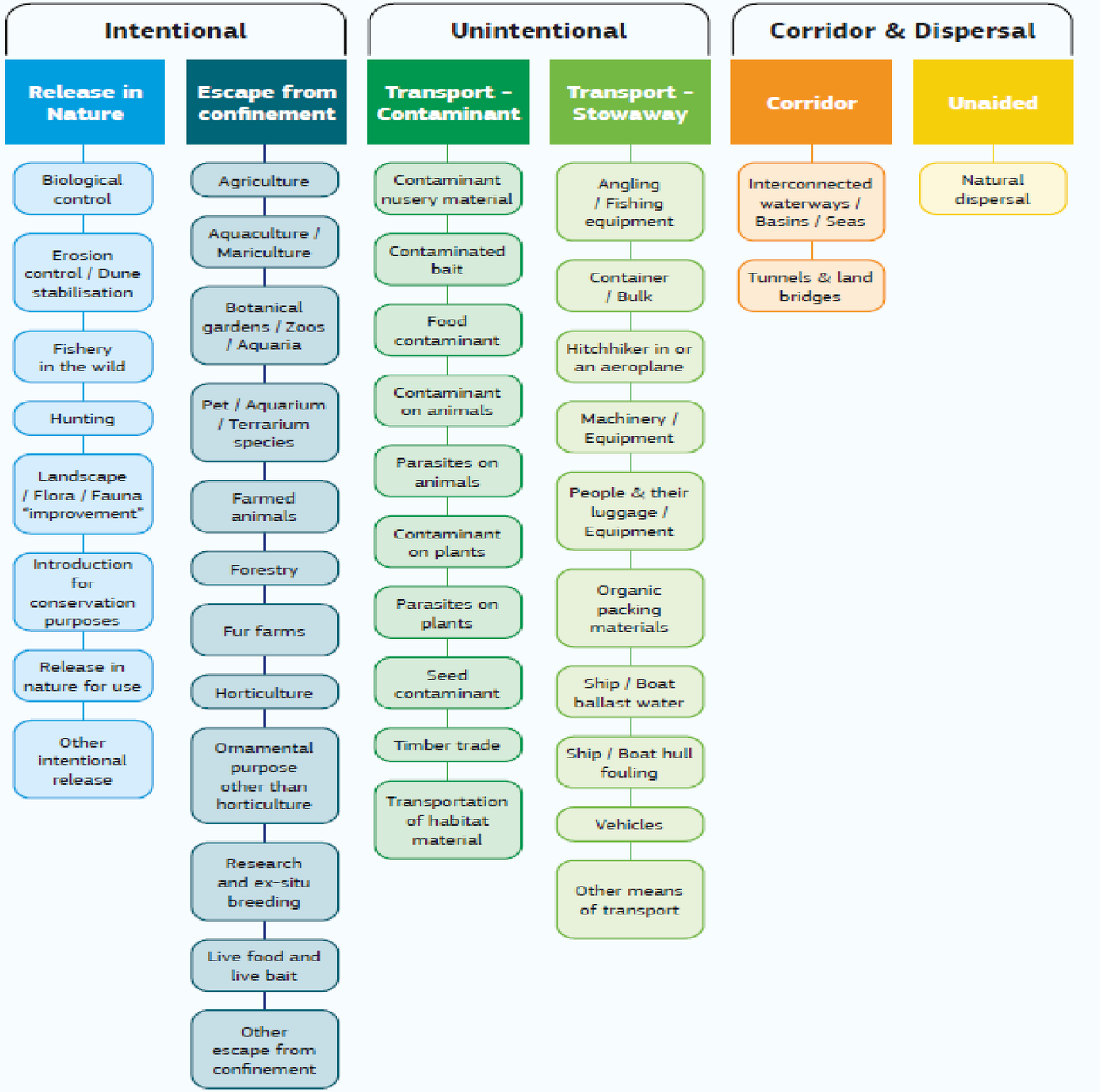
1. PREVENTION

Categories of pathways of introduction and spread of IAS

https://circabc.europa.eu/w/browse/591f53bc-346c-43ee-9647-a0f69c59fc6d

1. Release in nature
2. Escape from confinement
3. Transport – contaminant
4. Transport – stowaway
5. Corridor
6. Unaided

Are pathways/entry points anywhere covered in Ukrainian legal documents?


Intentional
Release in Nature
Biological control
Erosion control / Dune stabilisation
Fishery in the wild
Hunting
Landscape / Flora / Fauna "improvement"
Introduction for conservation purposes
Release in nature for use
Other intentional release
Escape from confinement
Agriculture
Aquaculture / Mariculture
Botanical gardens / Zoos / Aquaria
Pet / Aquarium / Terrarium species
Farmed animals
Forestry
Fur farms
Horticulture
Ornamental purpose other than horticulture
Research and ex-situ breeding
Live food and live bait
Other escape from confinement
Unintentional
Transport – Contaminant
Contaminant nusery material
Contaminated bait
Food contaminant
Contaminant on animals
Parasites on animals
Contaminant on plants
Parasites on plants
Seed contaminant
Timber trade
Transportation of habitat material
Transport – Stowaway
Angling / Fishing equipment
Container / Bulk
Hitchhiker in or an aeroplane
Machinery / Equipment
People & their luggage / Equipment
Organic packing materials
Ship / Boat ballast water
Ship / Boat hull fouling
Vehicles
Other means of transport
Corridor & Dispersal
Corridor
Interconnected waterways / Basins / Seas
Tunnels & land bridges
Unaided
Natural dispersal

EXAMPLES – BIOLOGICAL CONTROL

- The harlequin ladybird (*Harmonia axyridis*), native to Asia, was introduced to glasshouses, orchards and gardens in several regions of Europe and North America to control aphids

© Andreas Trepte

- The mosquito fish (*Gambusia* spp.) has been introduced from North America throughout the world as a mosquito-control agent

© Wikipedia

EXAMPLES – EROSION CONTROL

- The European marram grass *(Ammophilla arenaria)* is an example of a species that has been released for dune stabilization

© Malene Thyssen

- *Acacia saligna* – intentionally introduced in Europe in coastal areas to stabilize sand dunes and for afforestation

© Wikipedia

EXAMPLE – RELEASE IN NATURE FOR USE

- The raccoon dog (*Nyctereutes procyonoides*) is a native from East Asia introduced **as a fur game species** in the European parts of the former Soviet Union about a century ago

- The species successively spread to several European countries mostly through natural dispersal

© Josh Moore

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EXAMPLE – AGRICULTURE

- Bamboos (*Bambusa* spp.) have been widely cultivated across tropical and temperate regions of the world for a range of uses including as food and construction material
- It invades forests and produces impenetrable clumps

© Alvarez Nursery

- The giant reed *(Arundo donax*), a valuable, very fast growing crop that is being promoted for the production of fuel, fibers and pulp
- It has escaped from agriculture sites into the wild and threatens riparian habitats

© Harry Rose

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EXAMPLE – ORNAMENTAL PURPOSES

- The Tree of Heaven (*Ailanthus altissima*) was introduced to Europe intentionally on a number of occasions for aesthetic and cultural reasons as early as the mid-18th century
- It is now widespread across the continent

© www.ebben.nl

EXAMPLE – AQUACULTURE

- Escapes from aquaculture facilities have been responsible for introductions of the red swamp crayfish *(Procambarus clarkii)* worldwide

© Andrew Cannizzaro

EXAMPLES – TRANSPORT CONTAMINANTS

- The transport of wood or timber containing contaminants such as insects or pathogens is an example of the transport - contaminant pathway

© top agra

- Varroa mites *(Varroa destructor)* are an example of a parasite transported on a host animal – considered a major threat to apiculture

© AbsoluteFolly

- Construction sites are commonly invaded by the common ragweed (*Ambrosia artemisiifolia*), which suggests translocation of soils and gravels from construction sites in infected areas in Europe

© Wikipedia

5. Corridors

- Interconnected waterways / basins / seas
  e.g. the Suez canal, which connects the Red Sea with the eastern Mediterranean Sea

- Tunnels and land bridges

© Axelspace Corporation

PREVENTION

Prioritizing pathways of introduction and pathway Action Plans

https://circabc.europa.eu/w/browse/e5fb36ec-5208-47ec-82e1-17eda95c0fc2

- Member States shall **conduct a comprehensive analysis of pathways of unintentional introduction** of IAS of Union Concern and identify those pathways where priority action is needed
- The document presents a voluntary guidance to aid in carrying out a pathway analysis and identifying pathways where priority action is needed
- It presents methods for classifying and prioritizing pathways of introduction and spread of invasive alien species
- Concrete examples of **Pathway Action Plans** and case studies are presented in order to inspire to similar action
- It provides key recommendations

PATHWAY ACTION PLAN

Structure

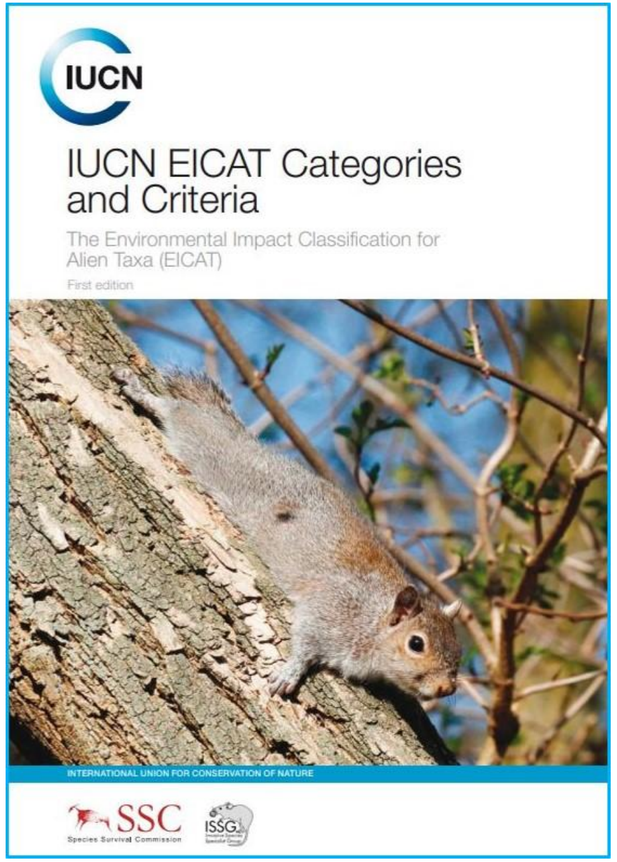
- Description of target pathway
- Policy and legal background
- Aim and objectives
- Specific objectives
- Actions
- Monitoring and updating action plan
- Identification of stakeholders
- Resources needed

There are several examples in the guidance document

IUCN TOOL

https://iucn.org/resources/conservation-tool/environmental-impact-classification-alien-taxa

- The Environmental Impact Classification for Alien Taxa (EICAT) is the IUCN global standard for measuring the severity of environmental impacts caused by animals, fungi and plants living outside their natural range
- EICAT is a key tool for prioritizing alien species that could lead to the most harmful environmental impacts, helping to make the best use of resources to prevent or limit their negative consequences
- EICAT guides the development of prevention and mitigation measures, and assists in the prioritization of management actions



2. EARLY DETECTION AND RAPID ERADICATION

Surveillance of Invasive Alien Species of Union concern

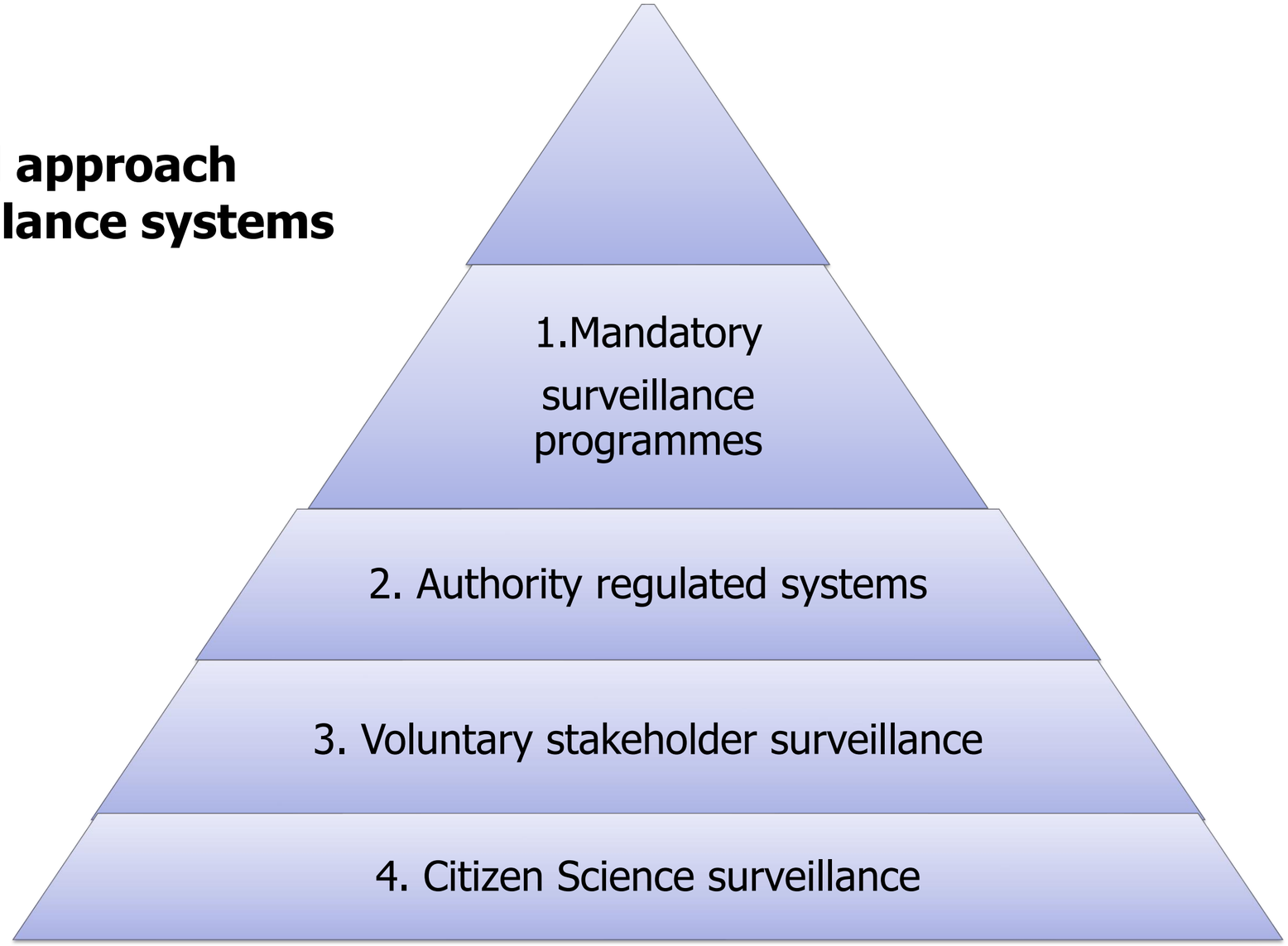
https://circabc.europa.eu/w/browse/e5fb36ec-5208-47ec-82e1-17eda95c0fc2

Surveillance: a systematic activity or survey of entry points for IAS aimed at detecting, identifying and locating alien species new to ……

Monitoring: the systematic collection of data over time and space to track changes

- What the surveillance system must do
- How can it be implemented
- What are guidance tools and data flows
- Reporting and time lines
- Practical implications for authorities and practitioners

Four tier level approach to surveillance systems



Examples of key stakeholders and surveillance systems

General species group	Species	Key stakeholders	Existing surveillance systems	Notes
Freshwater aquatic species	*Alternanthera philoxeroides* *Cabomba caroliniana* *Eichhornia crassipes* *Elodea nuttallii* *Hydrocotyle ranunculoides* *Lagarosiphon major* *Ludwigia grandiflora* *Ludwigia peploides* *Myriophyllum aquaticum* *Myrophyllum heterophyllum* *Perccottus glenii* *Pseudorasbora parva*	Anglers, Boaters paddle sport and other watersport clubs/users Gardeners Local Authority site managers Trade Aquatic researchers Public sector field staff for monitoring programmes Water extraction authorities and managers (drinking water supplies, water for industrial use)	Water Framework Directive Birds Directive Habitats Directive	Found in ponds and water filtration pond systems, reservoirs, canals, rivers, lakes

EARLY DETECTION AND RAPID ERADICATION

Further guidance documents

Identification guide for custom on invasive alien species of Union concern

https://circabc.europa.eu/w/browse/0606f9b8-b567-4f53-9bc8-76e7800f0971

Identification guide for surveillance on invasive alien species of Union concern

https://circabc.europa.eu/w/browse/0606f9b8-b567-4f53-9bc8-76e7800f0971

High resolution identification pictures

https://circabc.europa.eu/w/browse/59a517bf-8078-489c-8251-cd0fd166eabc

MANAGEMENT

Management of Invasive Alien Species of Union concern

https://circabc.europa.eu/w/browse/e5fb36ec-5208-47ec-82e1-17eda95c0fc2

- Primary objective is to **minimize the negative impact** caused by established IAS to species
- Summarize the state-of-the-art on IAS management through examples of good practices and successful control in Europe
- Increasing public interest – importance of public participation – sometimes opposition
- Legislative framework with references to other relevant European laws, e.g.
  - Council Regulation (EEC) No 3254/91 prohibiting the use of leghold traps
- Provides clear definitions and characteristics

MANAGEMENT

Management methods for plants – examples

- Mechanical control
- Chemical control
- Biological control
- Cultural Control / Competition

MANAGEMENT

Management methods for animals – examples

- Hunting and shooting
- Trapping
  - Live-traps
  - Box / cage traps
  - Corrals and Nets
  - Pitfall traps
- Exclusion
- Poisons
- Fertility/breeding controls

MANAGEMENT

Lessons learnt – methods that didn't work

Example Plants

The attempts to control *Eichhornia crassipes* in Sardinia (Italy) were costly but unsuccessfully mostly due to the lack of funding for an adequate follow up after the removal

Due to the high regenerative capacity of the tree of heaven (*Ailanthus altissima*), only combined treatment (mechanical and chemical) proves effective (continuous manual removal of young root shoots, cutting and girdling); positive results require several years of continued treatment

MANAGEMENT

Lessons learnt – methods that didn't work

© Wikipeadia

Example Animals

Drowning and conibear traps – considered inhumane

Different types of snares – forbidden by the Bern Convention (non-selective method)

Explosives – unacceptable control method due to animal welfare concerns

Release of natural vertebrate enemies – is counterproductive, as the target species can easily become pests themselves

MANAGEMENT

Other topics

- Identification of restoration measures – principles, best practices
- Stakeholder involvement
- Eradication versus management
- Best practice examples

Example from Czech Republic

MORAVKA – Preservation of alluvial forest habitats in the Morávka river Basin	LIFE06 NAT/CZ/000121	Japanese knotweed (*Reynoutria spp.),* Himalayan Balsam (*Impatiens glandulifera*)	Methodological approaches involved safe techniques for using herbicide chemicals in a wetland environment and the use of a combined (mechanical and chemical) treatment

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3144

http://life-moravka.kr-moravskoslezsky.cz/

Example management *Channa argus*

© Wikipedia

- Prohibition on the import, keeping and trade
- Raise public awareness and education
- Early detection is very hard due to the areas this species inhabits – involve observations stakeholders
- Targeted monitoring – river surveys – expensive
- A potentially cost-effective means of enhancing the detection of undesirable, prohibited non-native species is the use of environmental DNA (eDNA) approaches
- Rapid eradication depends on type of aquatic environment – case-by-case studies – often difficult, sometimes not feasible
- Drain-down, mechanical removal (e.g. using traps, nets or electrofishing) and piscicides
- More research needed for eradication and control needed

MANAGEMENT

Conclusions

The management of invasive alien species requires a concerted effort across multiple sectors and countries. Proactive measures, effective collaboration, and continuous research are essential to mitigate the threat posed by these species, ensuring the protection of biodiversity and ecosystem health

MANAGEMENT

Further guidance documents

Notes on measures and costs per (potential) IAS of Union concern

https://circabc.europa.eu/w/browse/ead324a2-f37a-461d-b6bf-b3870c7308ce

Notes on lethal measures to manage IAS of Union concern

https://circabc.europa.eu/w/browse/0606f9b8-b567-4f53-9bc8-76e7800f0971

Notes on the cost of management

https://circabc.europa.eu/w/browse/3178bc0f-be6c-43e1-aae6-ba91476ac29e

TOOLS

European Alien Species Information Network (EASIN)

https://easin.jrc.ec.europa.eu/

An online platform of information on invasive alien species to help implement EU policy

Species Search and Mapping Tool

https://easin.jrc.ec.europa.eu/spexplorer/

Search the database of alien species currently on the Union list in Europe and their distribution

IUCN Global Invasive Species Data Base

http://www.issg.org/database/welcome/

Invasive Species Compendium

https://www.cabi.org/ISC

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