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EU4GREEN
RECOVERY
EAST

SELECTED INVASIVE ALIEN SPECIES OF EU CONCERN KNOWN FROM UKRAINE

Implementing partners:

ENVIRONMENT AGENCY AUSTRIA
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SELECTED EU SPECIES

Flora

1. **Asclepias syriaca**
   Common milkweed
2. **Elodea nuttallii**
   Nuttall's waterweed
3. **Heracleum mantegazzianum**
   Giant hogweed
4. **Impatiens glandulifera**
   Himalayan balsam

Fauna

1. **Alopochen aegyptiacus**
   Egyptian goose
2. **Gambusia holbrooki**
   Eastern mosquitofish
3. **Procambarus virginalis (Procambarus fallax f. virginalis)**
   Marbled crayfish
4. **Procyon lotor**
   Raccoon

ASCLEPIAS SYRIACA

- Native to north America
- Introduced as ornamental plant by beekeepers
- Partly used as fiber and medicinal plant
- Rapid natural spread through long rhizomes, 10cm below soil surface
- Producing dense populations, creating shade and releasing harmful compounds
- Negative impacts on native plants
- Invasive weed in agricultural areas
- All parts are poisonous – harmful for livestock

© G. Leitner

WHAT CAN BE DONE ?

- Control of spreading, specifically in protected areas
- Mowing and grazing is NOT enough
- Most effective would be chemical control (herbicides), but not advisable due to potential side effects, as the milkweed plant is very attractive to bee species as a nectar source
- Mechanical measures – dig it up and pull it out – the entire rootstock must be removed, as the plant can always sprout again via its root runners
- Awareness raising campaigns

© Steiermärkische Berg- und Naturwacht

ELODEA NUTTALLII

- Native in temperate regions of North America, now widespread in Europe
- Pathway: *via* the ornamental aquatic plant trade for use in aquaria and as a pond plant oxygenator
- Often accidental release, spread via fishing equipment or boats
- Typically occurs in more eutrophic water bodies
- Rapid growth, reducing quality of water and preventing light and oxygen from entering
- Significant ecological and economic impacts on freshwater ecosystems

© JKI Environmental

WHAT CAN BE DONE ?

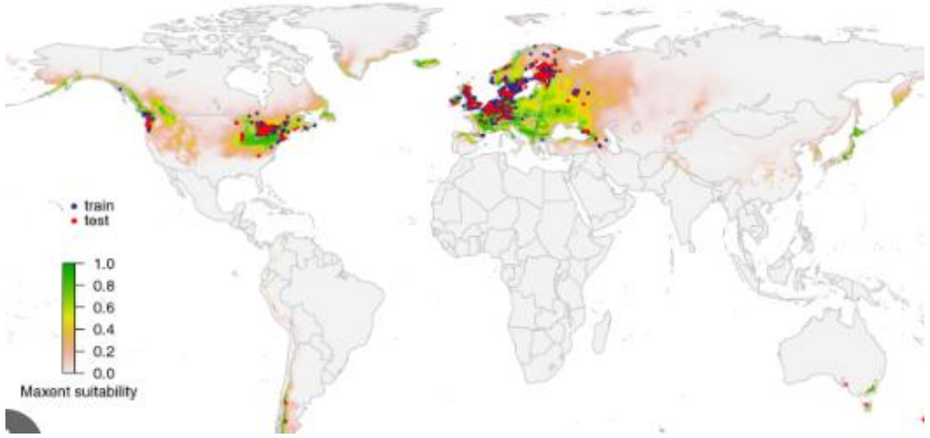
- Control very difficult – early detection is crucial
- Manual removal
- Biological control using herbivorous fish (e.g. grass carp and other bottom feeding fish can give good results, but can increase eutrophication
- Chemical control is possible, but most often not an option – too many environmental risks for non-target species and water quality
- Well-coordinated public awareness campaigns
- It is likely that the cost of managing *Elodea nuttallii* in the future in Europe would be massive (greater than €13 million per year)

© Christian Fischer

HERACLEUM MANTEGAZZIANUM

- Native to the Caucasus in southern Russia and Georgia
- Propagated as an ornamental plant, is popular among beekeepers
- Seeds can be easily dispersed by wing spreading into surrounding areas, garden, parks, roads
- Significant negative impact on biodiversity, reducing native plants diversity, altering ecosystem functions, river bank erosion
- Can cause phototoxic reaction for humans – health risk

© Wikipedia



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WHAT CAN BE DONE ?

- Easy detectability – small populations can be eradicated easily
- Involve the public (‘citizen science’) in early warning and eradication of individuals
- Mowing and grazing are NOT effective methods – don’t cause plant mortality
- Most effective management measure is the use of herbicides
- Seeds can remain viable in soil for seven years – take into account in management planning

© Hobart and William Smith Colleges

IMPATIENS GLANDULIFERA

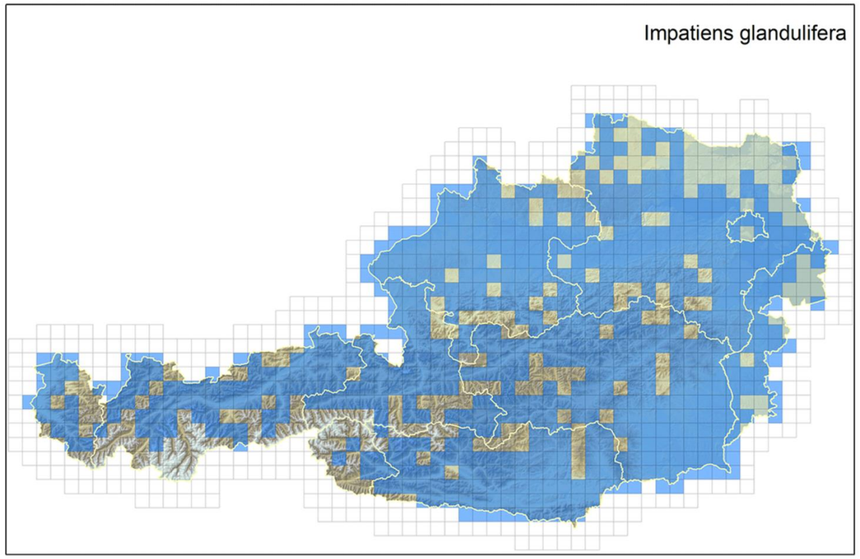
- Native to the Himalayas – found at high altitudes, but invades also lower areas
- Spread by regenerating from plant fragments
- Often found in disturbed habitats, especially on river and stream banks, invades also shaded areas in the forest understory
- Introduced as ornamental plant
- Highly competitive plant, overgrowing native vegetation
- During winter plants are dying, disturbing river banks stability, leading to erosion

© Wolfgang Rabitsch

One of the most aggressive alien species in Europe

WHAT CAN BE DONE

- Early warning and eradication through ‘citizens science’
- Eradication is costly, time consuming and often impossible, due to its impressive ability to regenerate and spread (in pure stands the production of 32 000 seeds/m² has been reported)
- Focus should be reducing the impact in protected areas
- Cutting should be done before the flowering stage in June
- Hand pulling, removing the whole plant including the roots
- Repeating the interventions several times
- Cattle grazing has locally led to a decline in Germany



ALOPOCHEN AEGYPTIACUS

- Native to Africa
- Introduced in Europe as ornamental specimen for zoological gardens and parks
- Escaped to the wild
- Adapting easily to different environments
- Hybrids with other goose and duck species
- Competing native fauna for food and nesting sites
- Overgrazing, eutrophication spreading of diseases

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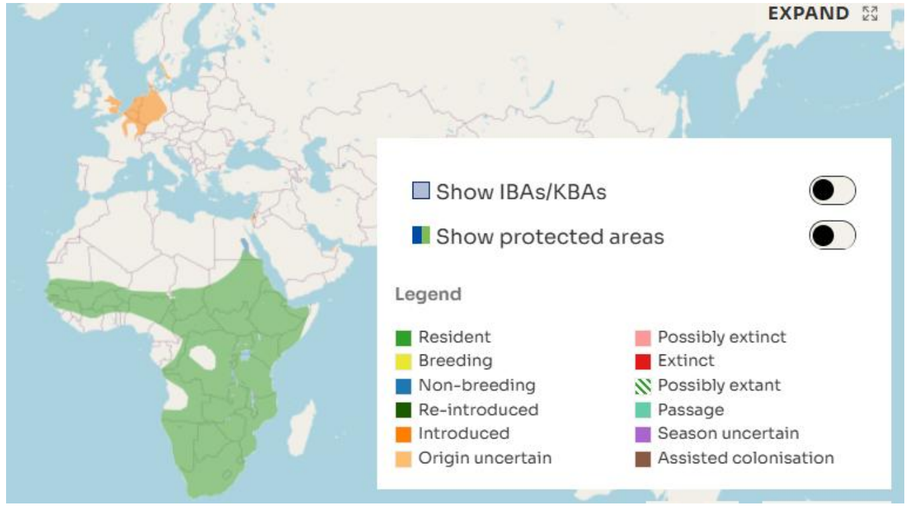


© IUCN

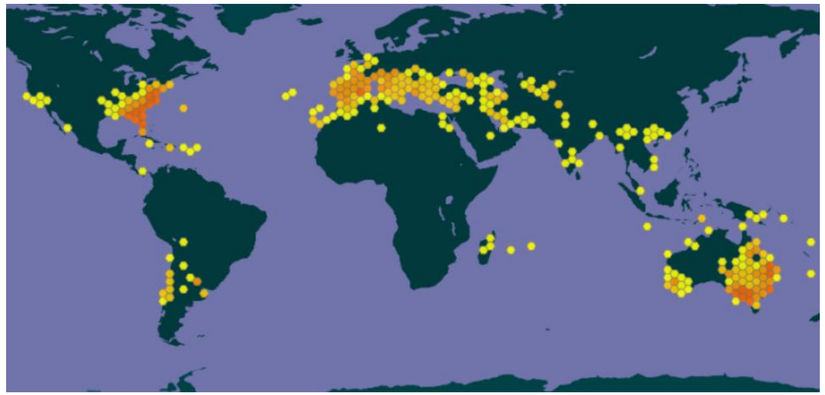
WHAT CAN BE DONE ?

- Awareness raising on negative impacts is crucial for gaining public support
- Empowering citizens networks
- Animals in captivity should be housed securely
- Bans on sales
- Phasing out from zoos
- Rapid eradication of any new emerging population
- Reducing reproduction – destroying eggs
- Trapping and hunting

© RINSE

GAMBUSIA HOLBROOKI

© Wikipedia



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- High degree of similarity between the Eastern mosquitofish and Western mosquitofish (Gambusia affinis); prefers warmer water temperatures, but can adapt to cold conditions, including winter ice cover
- Native to US and Mexico
- Successful fish invaders, now widespread in Europe
- Introduced globally as a biocontrol agent for mosquito control to prevent spread of malaria (but limited evidence)
- Its aggressive and predatory behaviors impact native fish populations, endangering tooth carp species, but also reducing rotifer, crustacean and insect populations and enabling phytoplankton blooms

WHAT CAN BE DONE ?

- Raising public awareness should reduce further unauthorized introductions
- Detection methods include electrofishing, citizen-science, monitoring and fyke-netting, but seine/dip nets and traps are more efficient
- In small enclosed water bodies, the use of drain-down, biomanipulation (e.g. use of native predators), lime treatment and piscicides (e.g. rotenone) may be effective in eradicating populations. However, the species is resistant to piscicides and there are legal constraints on their use within the EU

PROCAMBARUS VIRGINALIS (P. FALLAX)

- Exact native range is unknown, most probably in North America
- Introduced through aquarium trade, later ornamental trade became more important, popular in the internet trade
- Frequent reproduction, releases by citizens
- Impacts are not well documented
- Potential negative ecological impacts, together with *Procambarus clarkii*, responsible for the dramatic decline of native crayfish – e.g. *Austropotamobius pallipes*
- Transmits a lethal fungal disease
- Changing the structure of water habitats
- Damaging drainage and irrigation systems

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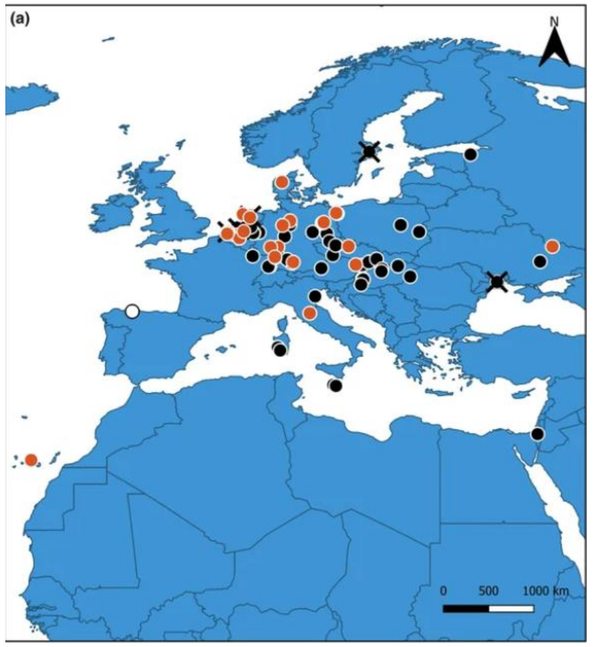


© Research Gate

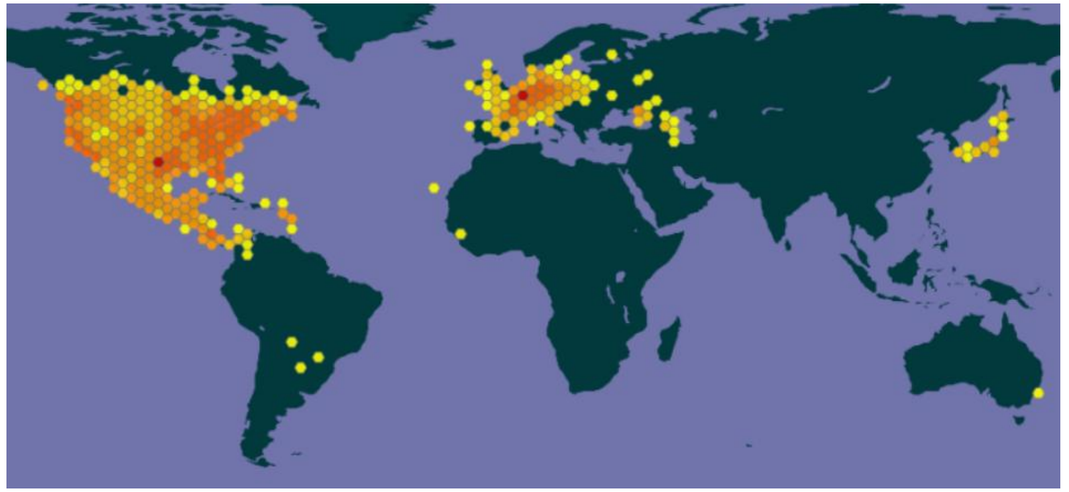
WHAT CAN BE DONE ?

- Once in the wild very difficult to control
- As with other aquatic species, management is difficult
- Ban on releasing
- Public awareness activities can help prevent its illegal introduction – citizens science projects
- Rapid eradication of any newly emerging population
- Combing different methods, including trapping, pond drawdown, use of native predators, biocides

PROCYON LOTOR

© iNaturalist

- Nocturnal carnivore native to Central and North America
- Introduced to Japan and Russia for fur farming
- Escapes or releases from farms are main pathways
- Spreading also into urban areas
- High reproductive potential
- Impacts on native biodiversity, in wetland habitats, on amphibians and birds and their nests
- Impacts also on agricultural activities, chicken farms, etc.
- Carrying a range of diseases and parasites



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WHAT CAN BE DONE ?

- Ban on the species to keep, transport and sale
- Nowadays associated with pet trade
- Information about raccoon distribution, ecology and impact on native fauna in Europe is very scarce, thus such data are needed
- In Europe little experience with raccoon population control
- Control involves a range of methods including trapping and shooting

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ARUNDO DONAX

Not in the EU list !!!!

Example from La Gomera, Canarian Islands

- Reported as native to southern-eastern Asia
- Ranks among the world's 100 most invasive weed species
- Posing significant threats to native biodiversity, agriculture, and natural ecosystems

© Sissi Samec

WHAT CAN BE DONE ?

Eradication measures

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