Differentiation of plant protection measures in the sector »horticulture«

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Possible risks from horticulture sector

- Some alien plants cultivated at urban green spaces and in urban forests are invasive species.
- Ornamentals in nurseries
  - Pathway of import of alien pests and diseases.
  - Plants for planting
- Risk from increased trade
- Expansion of Mediterranean pests and diseases following ornamental plants

Ornamental horticulture

Production

of ornamentals in nurseries

Maintenance of urban green:

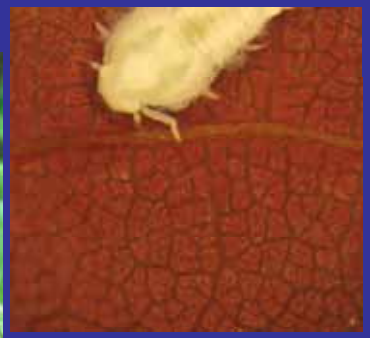
open spaces, parks, tree rows, green down the roads, green spaces on cemeteries

- **Pionirski park in Belgrade**

Functions of Urban green

- **Esthetic**
- **Ecological (climate change, air pollution, protection of biodiversity, protection of natural stands)**
- **Psychological and social**

  – More importance with the urban development



Invasive ornamental trees and shrubs

Acer negundo L.

Ailanthus altissima (Mill.)

Akebia quinata (Houlť.) Dcne.

Albizzia julibrissin Dur.

Amorpha fruticosa L.

Berberis thunbergii DC.

Broussonetia papyrifera L'Herit Vent.,

Buddleia davidii Franch.

Casuarina equisetifoila L.

Eleagnus angustifolia L.

Euonymus fortunei (Turcz.) Hand. Mazz.

Fallopia (=Polygonum) baldschuanica Rgl.

Fallopia x bohemica (Chrtek & Chrtkova) J.P.Bailey

Fallopia japonica (Houtt.) Ronse Decraene

Alien invasive species

***Fallopia* spp.**

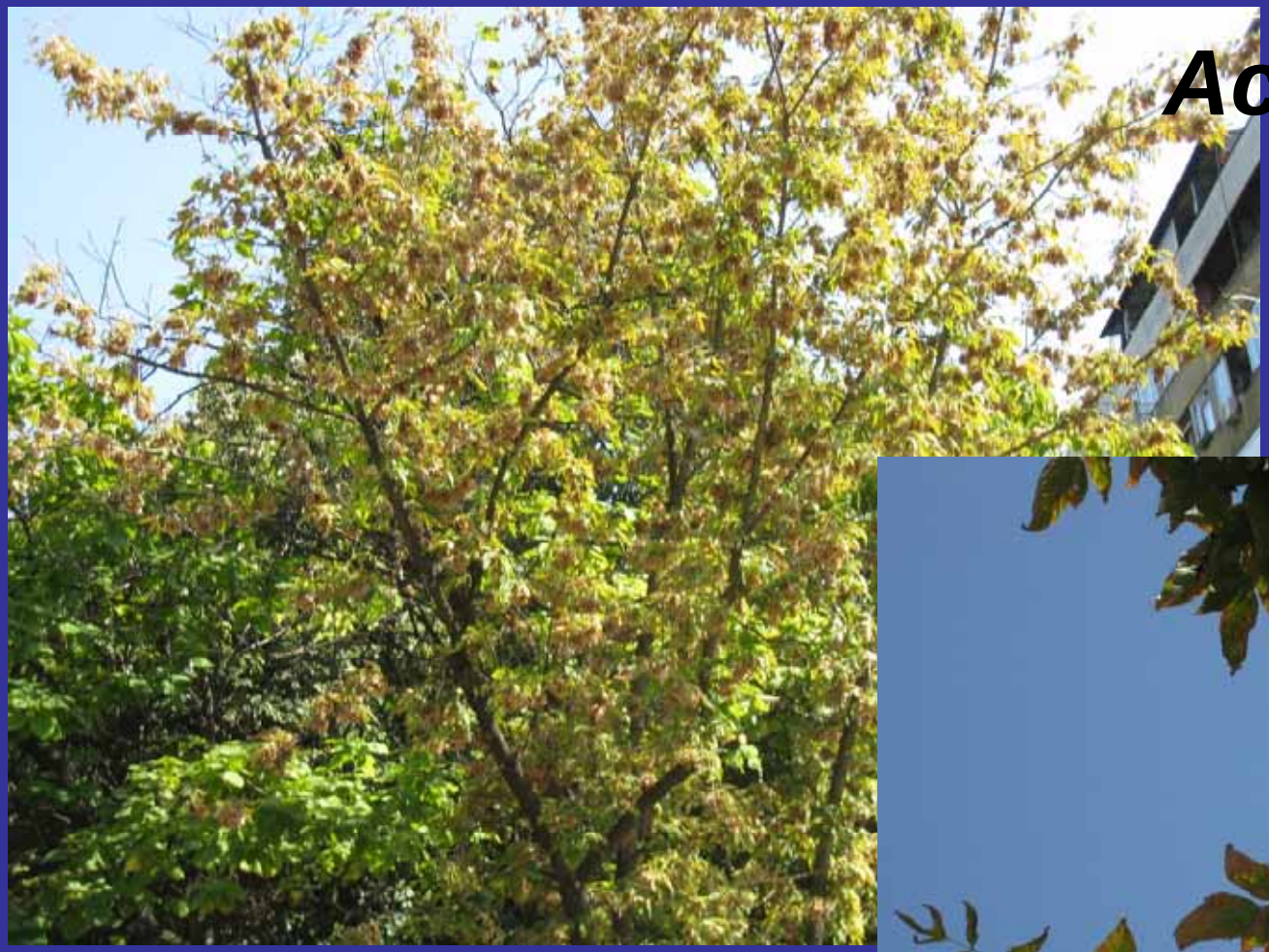
Negative ecological, economical and social effect

Fallopia sp. in urban green in Belgrade

Fallopia sp. in urban green in Belgrade

Fallopia sp. in Montenegro at altitude 1060 m a.s.l.

Acer negundo



Ailanthus altissima –planted in tree rows and unwonted seedling

Invasive ornamental trees and shrubs

Hedera helix L.

Koelreuteria panniculata

Lonicera japonica Thunb.

Paulownia tomentosa (Thunb.) Steud.

Prunus serotina Ehrh.

Rhamnus catharticus L.

Rhus typhina L.

Robinia pseudoacacia L.

Rosa foetida Herrm.

Rosa multiflorae Thunb.

Salix babylonica L.

Spiraea japonica L.

Tamarix pentandra

Ulmus pumila L.

Wisteria floribunda (Willd.)

Wisteria sinensis (Sims.) Sweet

Koelreuteria panniculata in Belgrade

Paulownia tomentosa (Thunb.) Steud.
Invasive in Odesa (Ukraine)

Demands on ornamental horticulture

- Increasing plant production of ornamental trees, shrubs and flowers (new assortment, exotic plants are introduced)
- Improvement of esthetic value
  - Main goal is to improve esthetic value of Urban Green
  - Follow the trends in Landscape architecture
- Improvement of ecological functions
- Social and economic impact

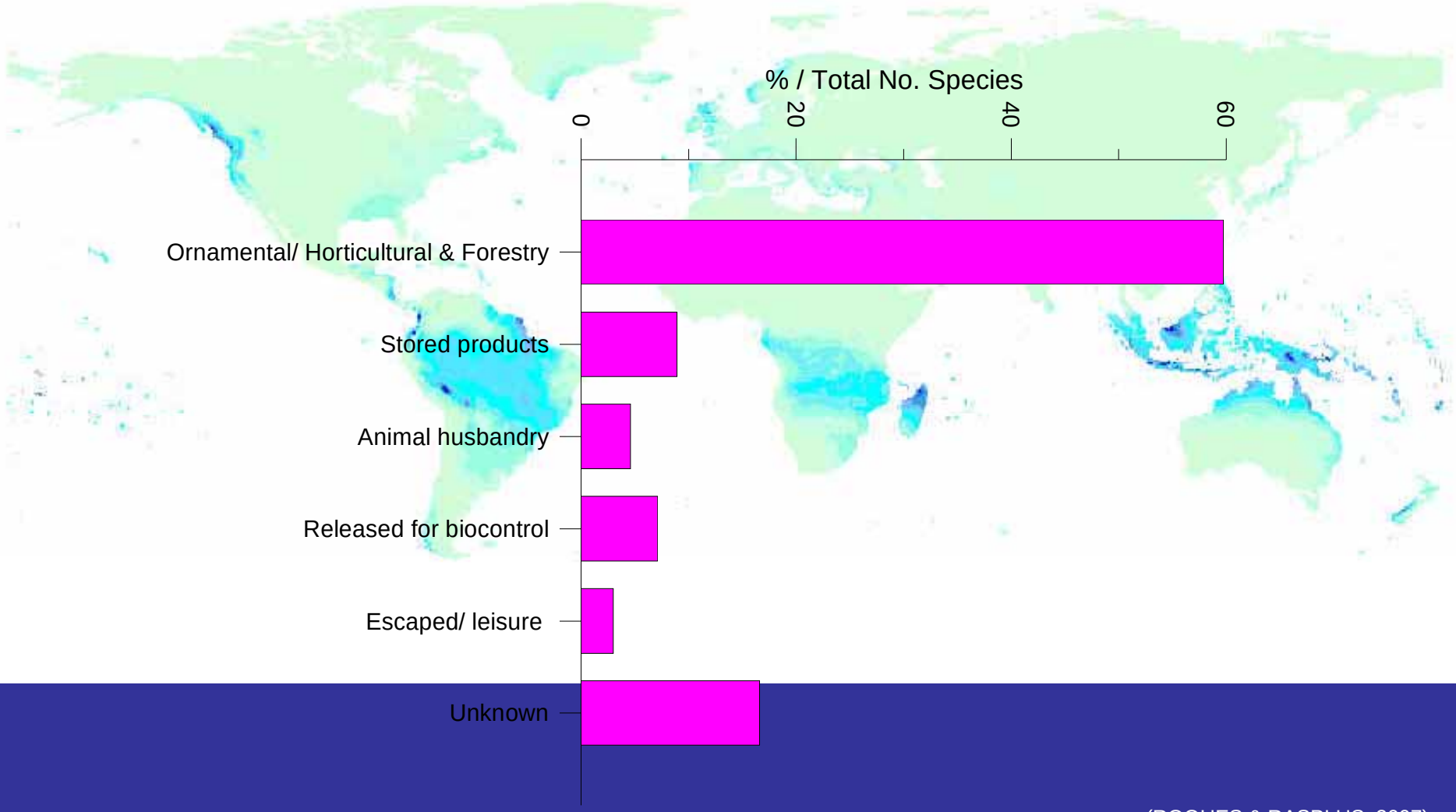
Exotic plants:

- ornamental trees, shrubs, annual flowers, pot plants
  - Phytosanitary risk:
    - Hosts of plant diseases (viruses, bacteria, fungi), Nematodes
    - Gastropods
    - Insects and other arthropods
    - Vertebrates

Pathways of introduction

- Import of reproductive material (e. g. seed, bulbs, cuttings)
- Import of plants for planting
- Import of pot plants
- Import of cut flowers

Plants are probably dominant vectors for import of invasive species



(ROQUES & RASPLUS, 2007)

Invasive insects on ornamental trees and shrubs

- *Dreyfusia nordmannianae*
- *Gilletteella cooleyi*
- *Pineus strobi*
- *Cinara Cinara cedri*
- *Cinara Cinara curvipes*
- *Aphis catalpae*
- *Myzocallis walshii*
- *Prociphilus fraxinifolii*
- *Chaetophorus populifolii*
- *Melanaphis bambusae*
- *Pseudaulacaspis pentagona*
- *Metcalfa pruinosa*
- *Corythucha ciliata*
- *Hyphantria cunea*
- *Coleophora laricella*
- *Cameraria ohridella*
- *Parectopa robiniella*
- *Phyllonorycter robiniella*
- *Obolodiplosis robiniae*
- *Megastigmus spermotrophus*
- *Megastigmus wachtli*

Risk of import of pests in Europe from China

- *Bursaphelenchus xylophillus*

Anoplophora chinensis (Photo F. Hérard)

- ***Anoplophora glabripennis***
- ***Anoplophora chinensis***
- ***Xylotrechus rusticus***
- ***Monohammus urossovi***
- ***Hylobitelus xiaoi***
- ***Monohammus alternatus***
- ***Pissodes yunnanensis***
- ***Agrilus planipennis***

Expansion of Mediterranean pests and diseases following ornamental plants

Thaumetopoea pytiocampa
Cinara cedri
Eriococcus buxi
Planococcus vovae

Possible recommendations

Preventive plant health measures on imports (plants and plant products

Preventive plant health measures on intra-Community trade of seeds and plants for planting

Monitoring, eradication, containment and control of harmful organisms of plants and plant products and protected zones

- Export, transit and re-export
- Research and development
- Scientific advise
- Diagnostic laboratories
- EU financial instruments and contribution

Possible recommendations

- **There is need to shift from single-organism focused risk analysis to pathway analysis** – i.e. less emphasis on the individual pests, and more emphasis on how they move around.
- More emphasis on mitigation options.

Possible recommendations

- Shift science focus towards **pathway risk analysis** (how high-risk organisms move around the world) and mitigation options.
- Study a worldwide ban on the movement of potted plants and plants for planting and develop safer processes for trading in live plants and plant products.

Monitoring and early detection

Improvement of inspection:

- Permanent education of stuff.
- Visual inspection is not sufficient effective in many cases.
- Need to develop methods and procedures for new invaders.
- Cooperation between scientists from origin and invaded areas.

Thank you for your attention

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