

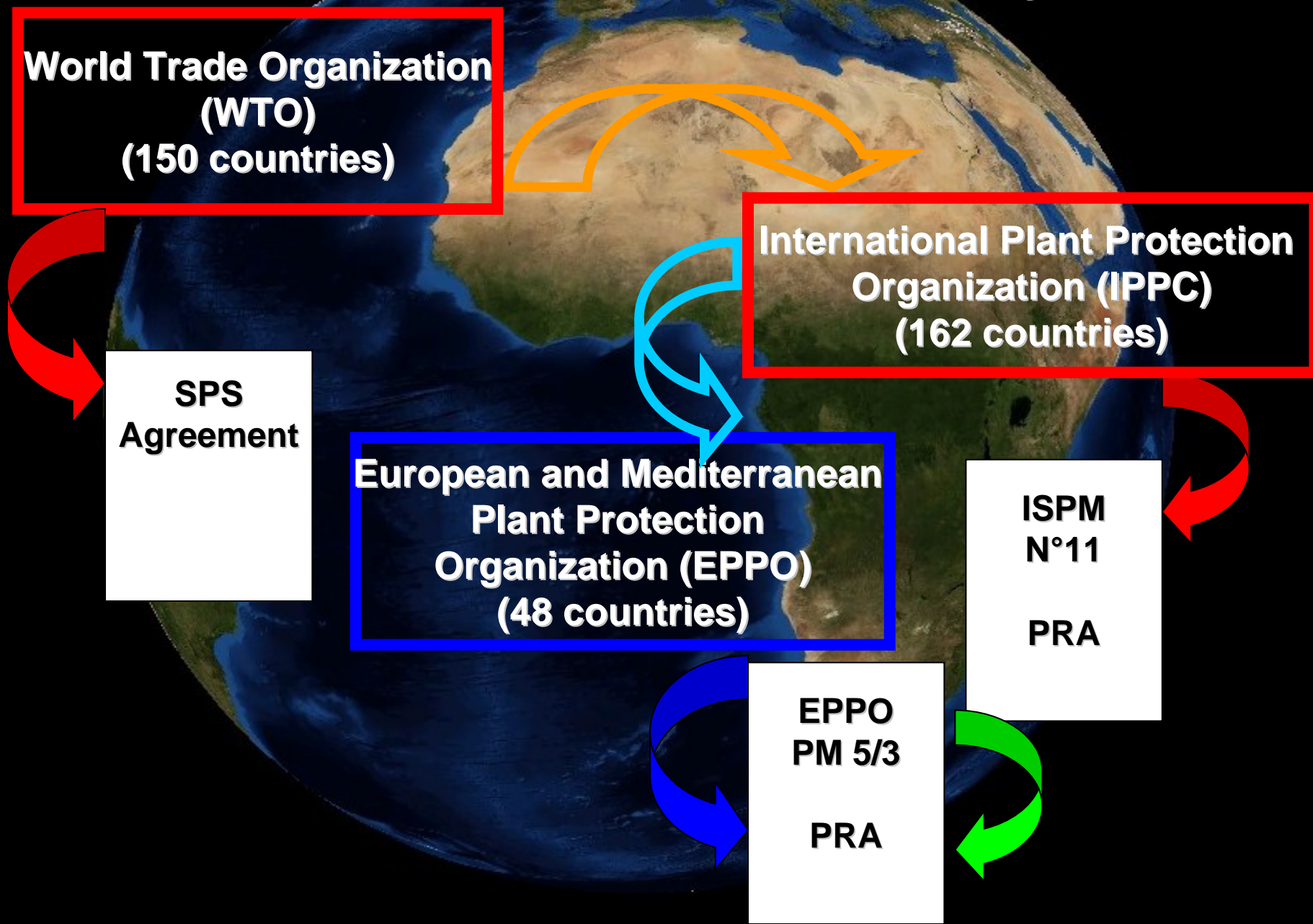


The EPPO Decision Support Scheme on Pest Risk Analysis and invasive alien plants

Sarah Brunel



Context of Pest Risk Analysis



Pest Risk Analysis

Pest Risk Assessment

- Probability of entry
- Probability of establishment and spread
- Assessment of potential economic consequences (including environmental impacts)

Pest Risk Management

- Measures for species voluntarily introduced
- Measures for species unvoluntarily introduced

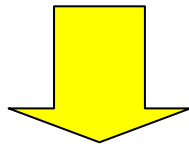
Probability of entry

Main pathways:

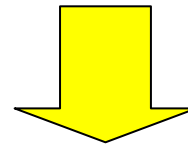
**Invasive alien plants
introduced voluntary for
ornament purposes (80%
of IAS)**

**Invasive alien plants
introduced involuntarily as
contaminants:**

- of plants for planting,
- of soil/growing media as a commodity,
- of used machinery,
- of grain,
- of seeds for planting,
- of containers and packaging



Entry is obvious

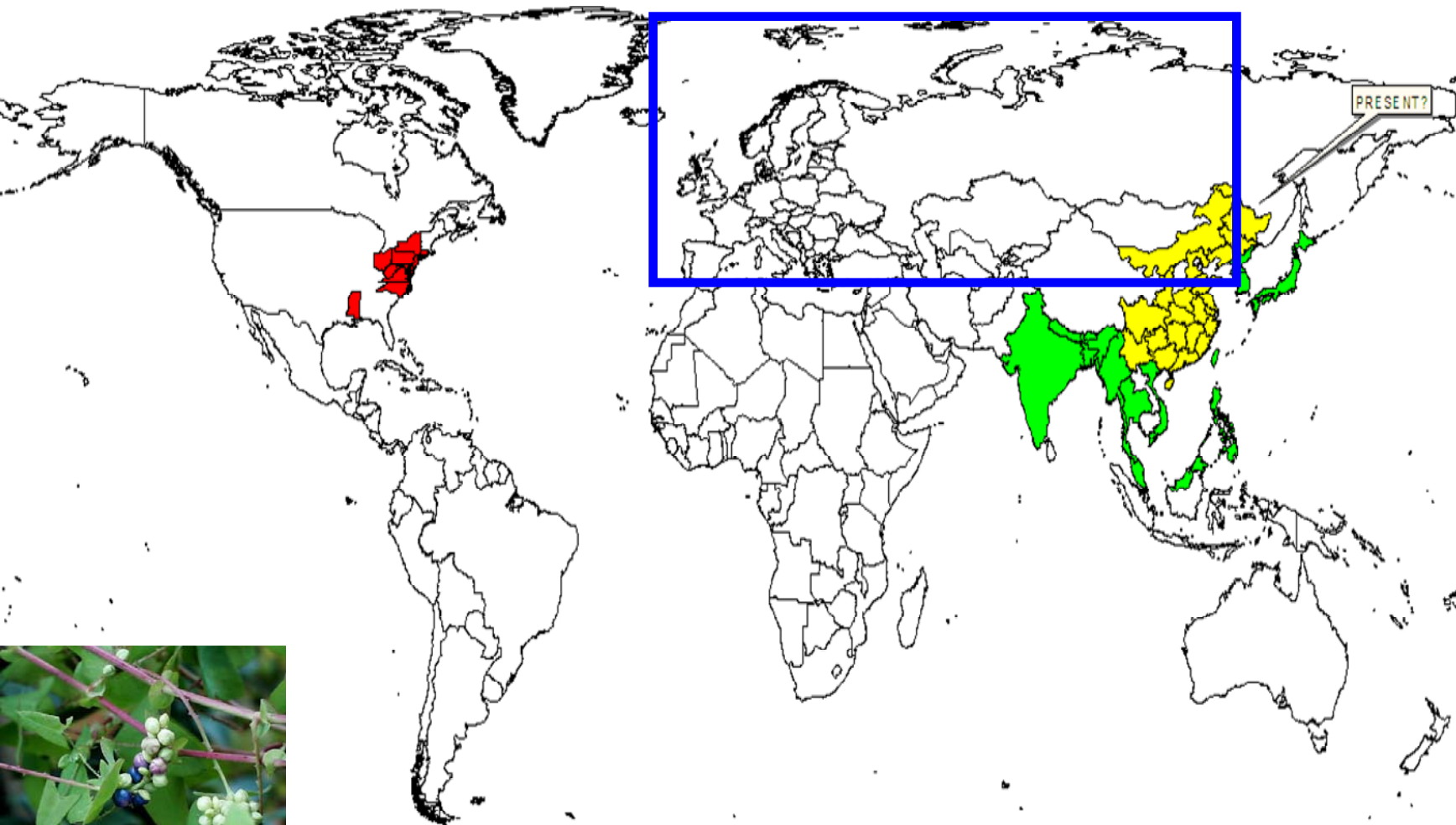


Entry to assess

Probability of entry:

Probability of the pest being associated with a pathway

EPPPO region



Polygonum perfoliatum

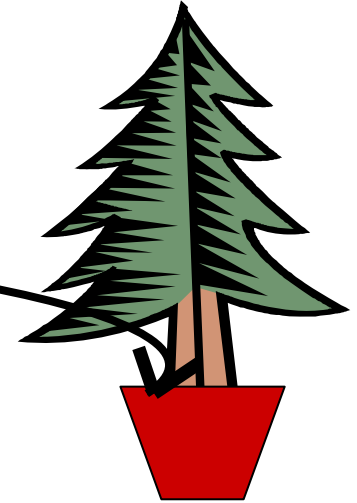
Probability of entry:

Probability of the pest being associated with a pathway



Polygonum perfoliatum

?



Christmas trees

?



Plants for planting

Probability to be associated?

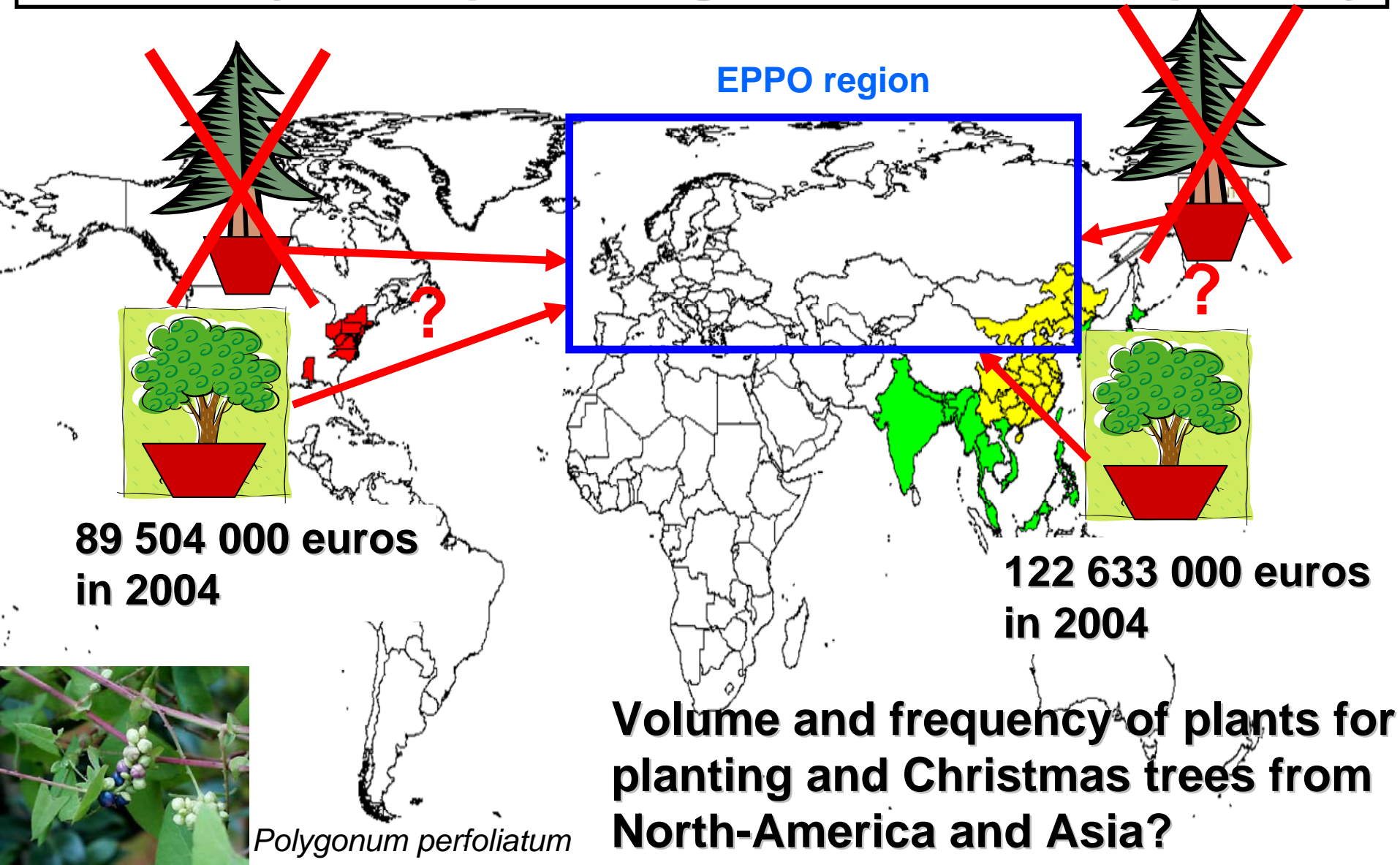
Moderately likely

Concentration of the pest?

Moderate

Probability of entry:

Probability of the pest being associated with a pathway



Probability of entry:

Probability of survival during transport or storage



From Asia and
North-America

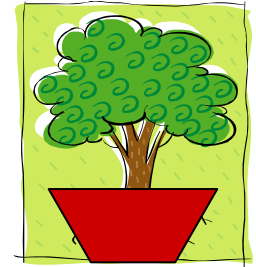


Polygonum perfoliatum

Survival during transport and storage?

Very likely

Probability of entry: Probability of the pest surviving existing pest management procedures



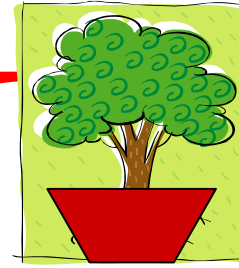
**No specific phytosanitary
measures apply for *P. perfoliatum***



Polygonum perfoliatum

Probability of entry:

Probability of transfer to a suitable host or habitat



Distribution?

Whole EPPPO region

Does the use of the commodity help transfer to a suitable habitat?

Yes, very likely



Polygonum perfoliatum



Conclusion of the probability of entry

It is **moderately likely** that the plant will enter as a contaminant of plants for planting with growing media originating from North-America or Asia



Probability of establishment and spread

Availability of suitable habitats

Suitability of the environment:

- Climate
- Abiotic factors
- Natural ennemies, competition

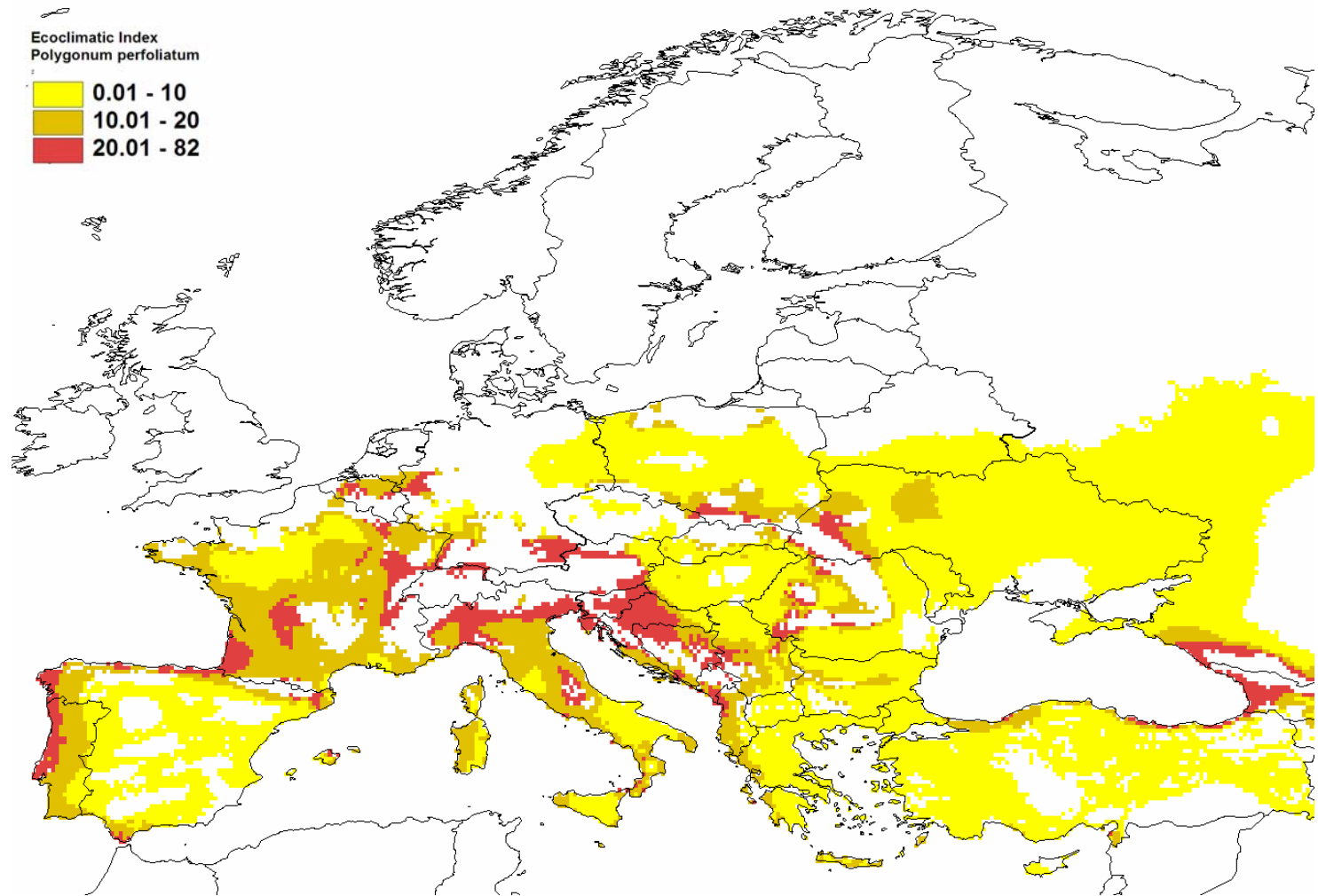


Cultural practices and control measures

Other characteristics: reproductive strategy, genetic diversity, adaptability

Natural or human helped spread

Climatic prediction with CLIMEX



Polygonum perfoliatum Ecoclimatic Indices for Europe, Imported to ArcGIS (Temperate Template, no cold stress, no wet stress, soil moisture minimum to 0.35, maximum temperature 36°C, DV1=12°C).

Assessment of potential economic consequences

Effects on plants



In Morocco, it was found that *Solanum elaeagnifolium* reduces maize yield harvest was reduced by 63% in the absence of weeding

Assessment of potential economic consequences

Production and control costs

In Australia, a program for *Hydrocotyle ranunculoides* costing over AU\$ 200 000 (EUR 120,000) in the first year was implemented.



In the UK, the estimate for control of the total area infested by *H. ranunculoides* by herbicides is about £250,000 (EUR 368,000) per year.



Assessment of potential economic consequences

Environnemental impacts



***C. helmsii* reduces germination rates of native species.**

The rare starfruit *Damasonium alisma*, one of the rarest plants in UK is thought to be threatened by *C. helmsii*.



Assessment of potential economic consequences

Social impacts



In Morocco, the value of fields infested by *Solanum elaeagnifolium* decreased by 25%

Degree of uncertainty

**Areas and degree of uncertainties
are carefully listed in order to:**

- ensure transparency**
- orientate needed additional
researches**



Pest Risk Management: Plant intentionally introduced

- Prohibition**

- Internal measures:**

- Publicity,**
- Labelling,**
- Surveillance,**
- Control plan,**
- Restrictions or codes of conducts on sale, holding, transport, planting**

Pest Risk Management: Plant unintentionally introduced

Pre-export measures to prevent a pathway from being contaminated:

- **Prevention of infestation of the commodity:**
 - specified treatment of the crop or of the consignment
 - specified growing conditions
- **Establishment and maintenance of: pest freedom of a crop, pest-free place of production or area, pest-free area**

Import measures (at the border):

- **Detection of the pest: visual inspection**
- **Removal of the pest from the consignment by treatment**

Developements

- Adapted to plants
- Scheme revised on a yearly basis
- Computer version soon available
- Further improvements with the European Union Framework Project 7 « PRATIQUE »
- Available on-line
- Basic training on the scheme in 2008



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