

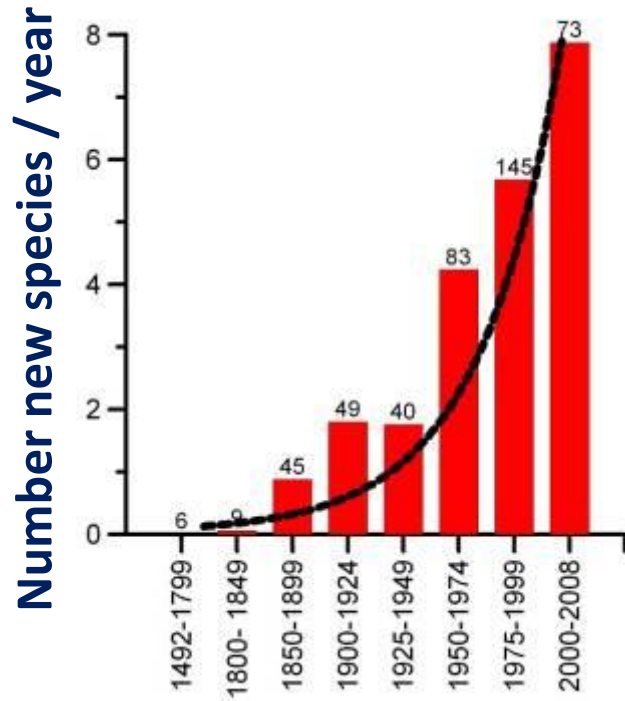


Workshop on invasive forest pests and pathogens: New tools for detection and management

26 January 2018, Oeiras, Portugal



Insect introductions: Europe, 1492 – 2008



Exotic insects

Roques et al. 2010



Cameraria ohridella / Horse chestnut



Anoplophora glabripennis / Broadleaves



Leptoglossus occidentalis / pines



Cydalima perspectalis / Box trees

Ecology of forest insect invasions

E. G. Brockerhoff · A. M. Liebhold

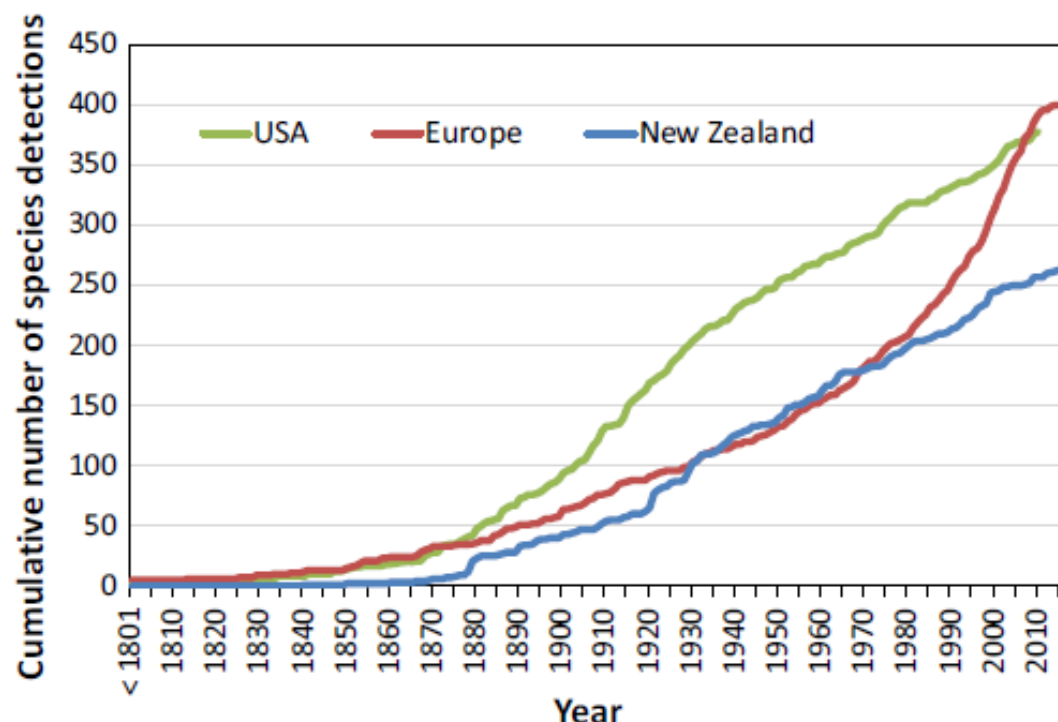


Fig. 1 Cumulative number of detections (i.e., new establishments) of non-native forest insect species over time in the USA, Europe, and New Zealand. Data shown are for non-native insects ‘feeding on forest trees’ in the USA and New Zealand) or ‘feeding on woody plants’ (Europe). Data for the USA (showing detections until 2010) are based on Aukema et al. (2010) and Yamanaka et al. (2015); data for Europe are according to Roques et al. (2016) and Alain Roques (pers. comm.); for New Zealand data see Suppl. Mat. 1



One belt One road

1000 billions \$



21st April 2017: first train between China and France
11 300 km, 15 days journey, 30 drivers, hundreds of containers



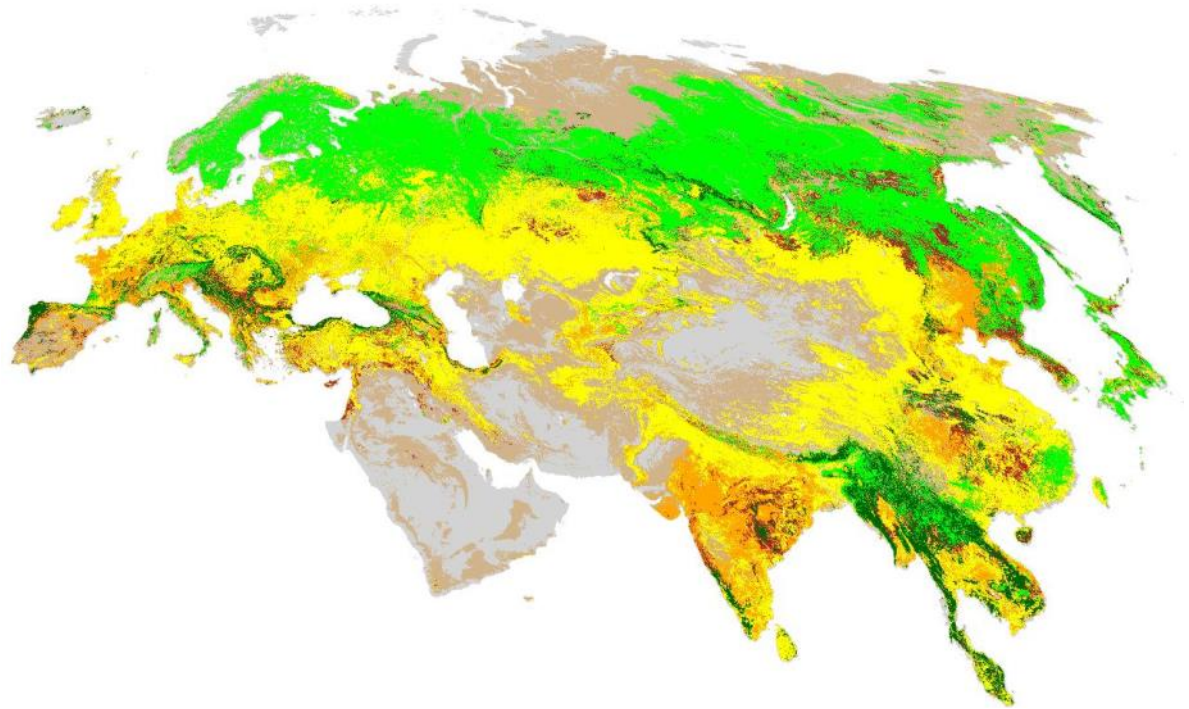
Trend of Chinese imports to France

En milliards d'euros



Tree genera present in China

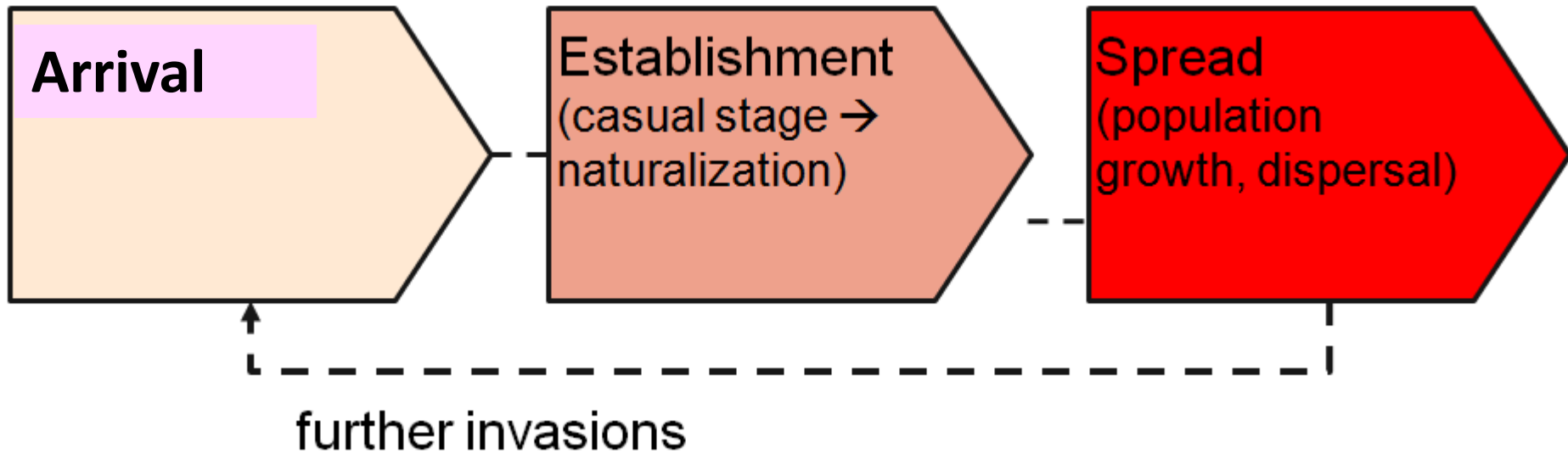
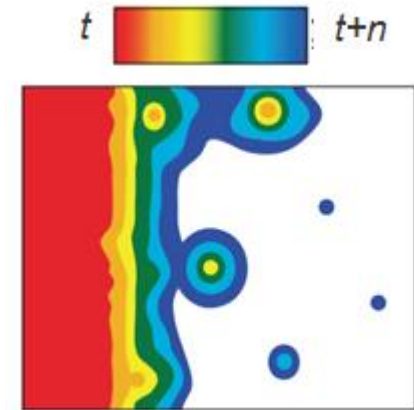
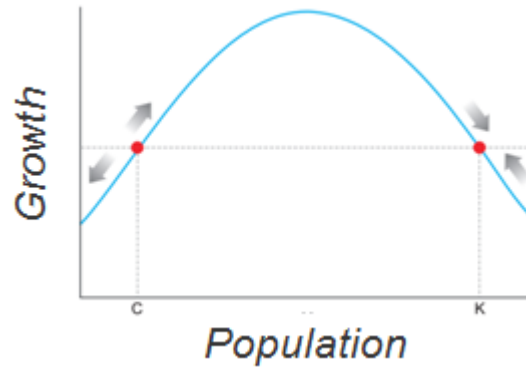
Abies
Acer
Alnus
Betula
Buxus
Castanea
Corylus
Cupressus
Fagus
Fraxinus
Juniperus
Larix
Malus
Pinus
Salix
Sorbus
Taxus
...



Chinese (forest) pests already established in Europe



Invasion process



**Prevention
Detection
tools**



**Surveillance
Delimitation
tools**



**Eradication
tools**



**Control
tools**



**Transport — Introduction — Establishment — Spread → Invasion
process**

Agenda

9:00	Welcome and workshop objectives Manuela BRANCO (ISA), Edmundo SOUSA (INIAV), Hervé JACTEL (INRA)
9:15	Methods for detecting invasive forest pests and pathogens 09:15 Sentinel plantations and multilure traps. Dr Alain Roques (INRA) 10:00 Spore traps for pathogens. Dr Julio Diez (Castilla y León) 10:45 Smartphone application and EFI database on invasive forest pests. C. Orazio (EFI) 11:15 <i>Coffee break</i> 11:45 PLURIFOR tool: case study on use of urban trees for early detection. Dr. M. Branco (ISA) and Dr. H. Jactel (INRA)
12:15	Methods of eradication 12:15 Eradication of forest pests. Dr Manuela Branco (ISA) 12:45 An experience of control of fungal diseases in a <i>Pinus radiata</i> stand in Gipuzkoa, Basque Country (Spain). A. Cantero (HAZI)
13:00	Lunch break
14:00	Methods of biological control against invasive pests 15:00 Classical biological control. Dr. M. Kenis (CABI) 15:45 Conservation biological control. Dr. H. Jactel (INRA)
16:30	Coffee break
17:00	Discussion with attendees about the potential of methods for invasive pest monitoring and management
18:00	End
20:00	Dinner (restaurant to be confirmed, at partners' own expense)