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European Regional Development Fund



# Invasive forest pests: Where should we try to detect the next?

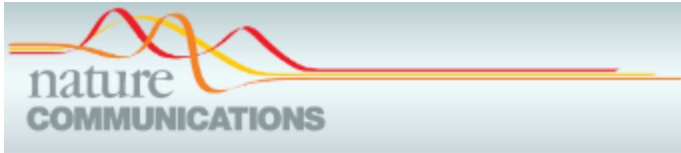
**Manuela Branco, Pedro Nunes, Fernandes Rosario  
Alain Roques, Christophe Orazio, Hervé Jactel**



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*Universidade de Lisboa*



# Ever more biological invasions



## ARTICLE

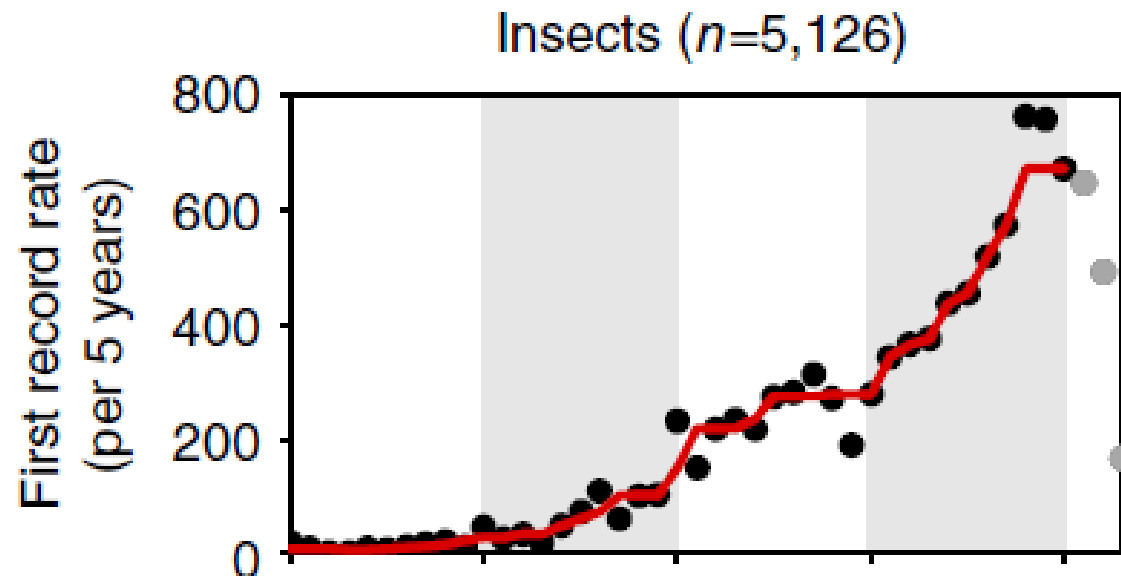
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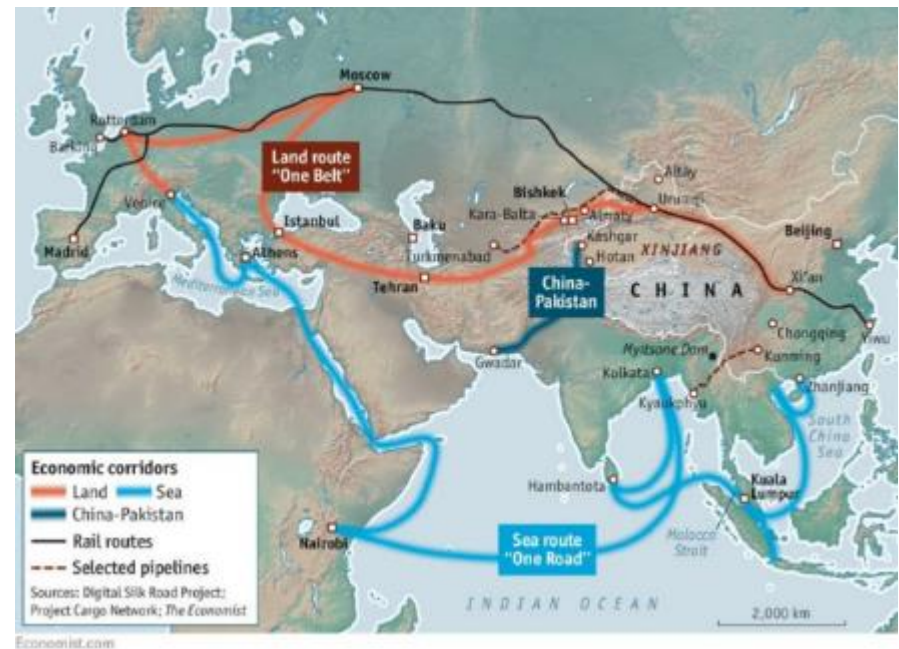
OPEN

## No saturation in the accumulation of alien species worldwide

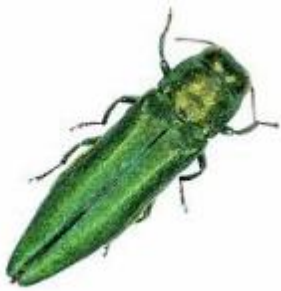
Hanno Seebens *et al.*<sup>#</sup>



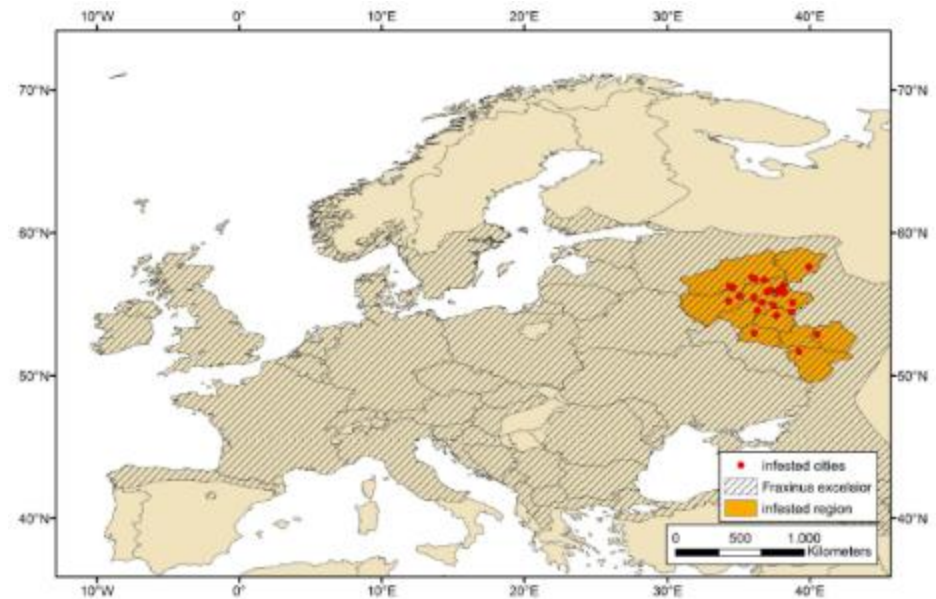
# Mainly due to increased and accelerated global trade



# Non-native pest insects have huge impacts on forest vitality and the forest economy

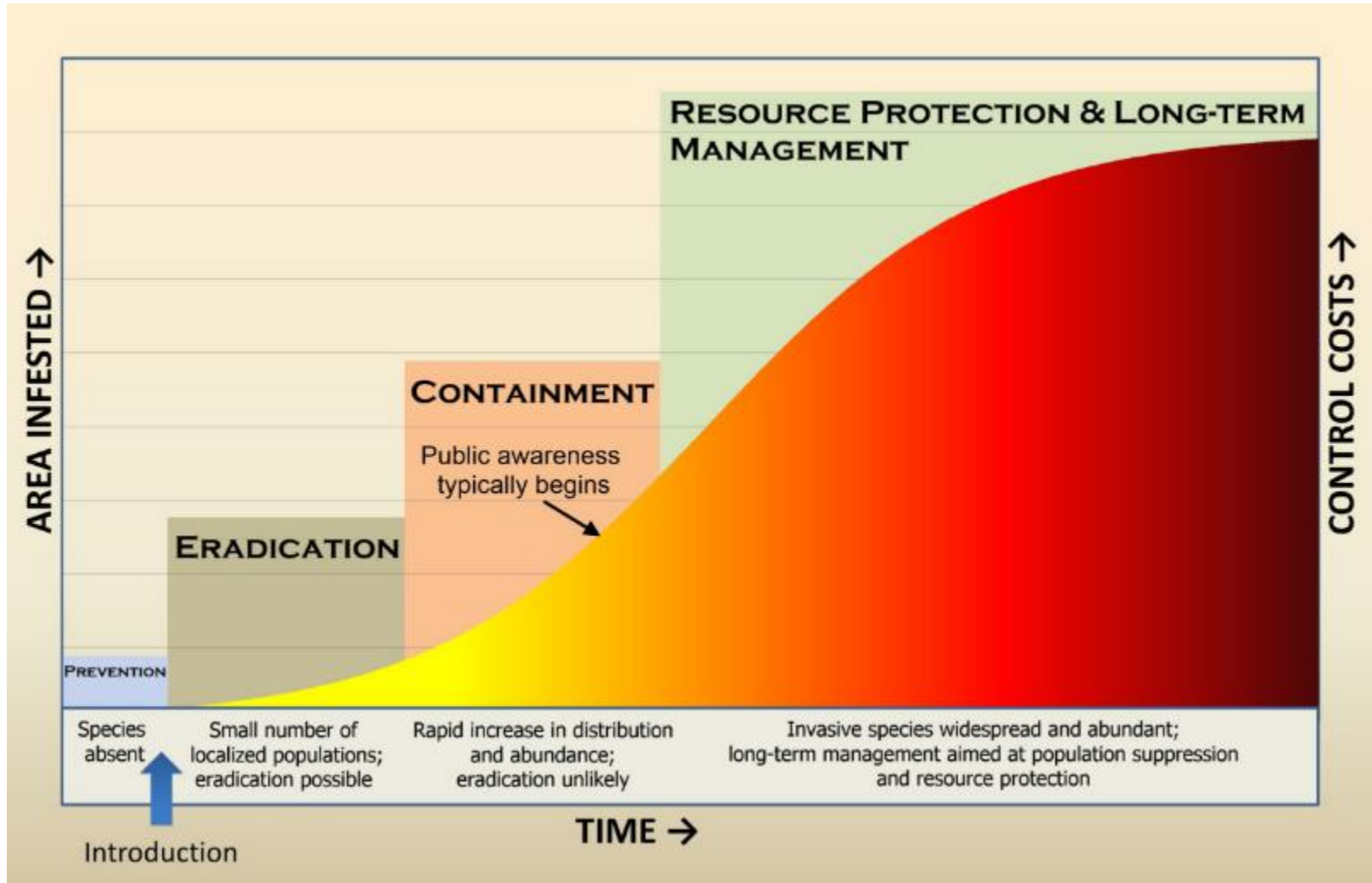


**Emerald ash borer : projected costs by 2020 = 25 billion \$ in the USA**

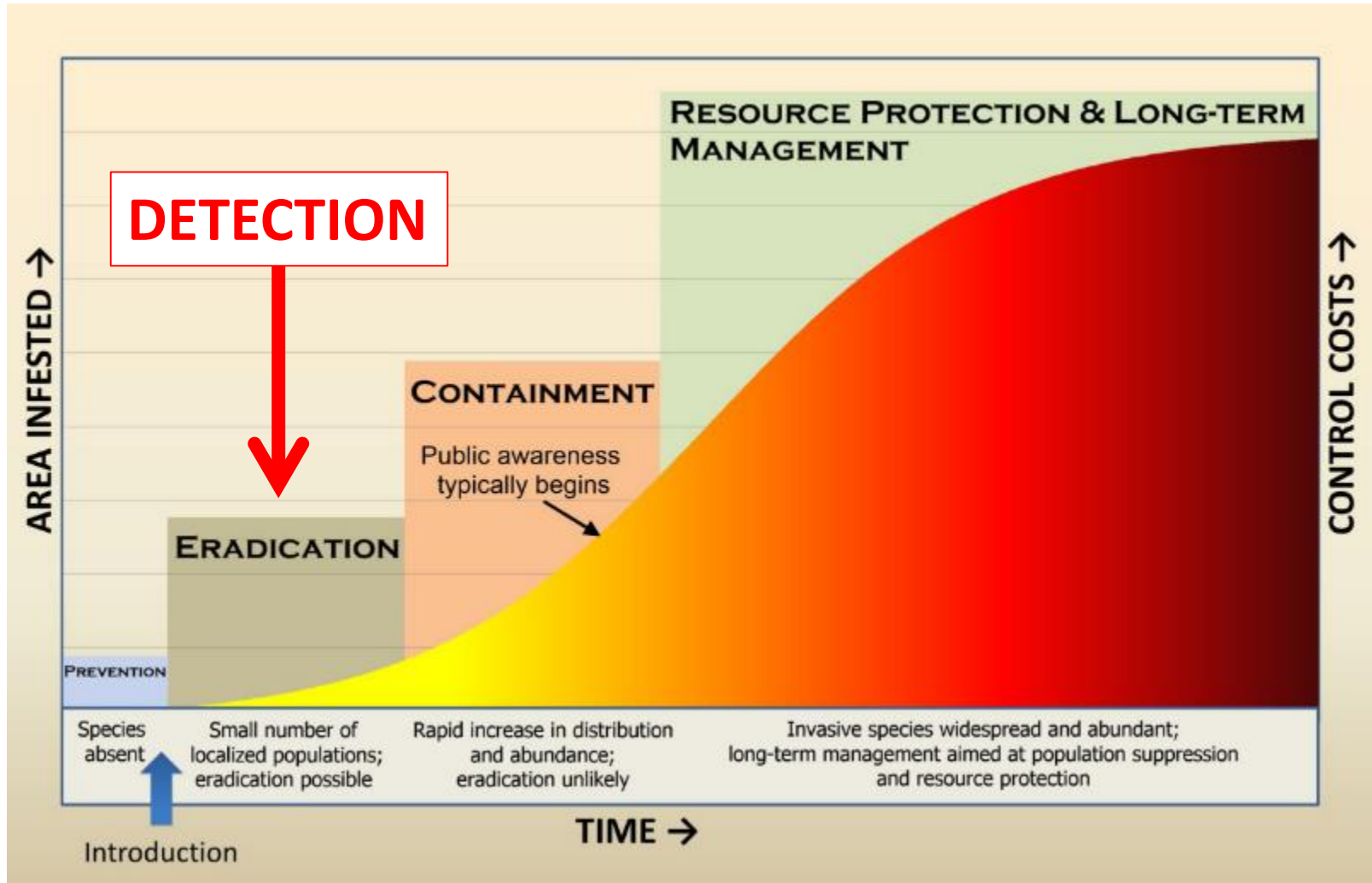




# It is necessary to intervene as soon as possible



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# Why urban forests are important

- More **arrivals** : close to **ports of entry** (airports, seaports, railway stations...)
- More **arrivals**: higher human population, **more trade**, more imported wood products, packaging or plants for planting (“vehicles”)
- Higher chance of **establishment**: higher tree species diversity (parks, botanical gardens, ...) increase the chance of finding a **suitable host**
- Higher chance of **establishment**: better **climatic conditions** for the survival of insect species from warm countries (“urban heat island”)

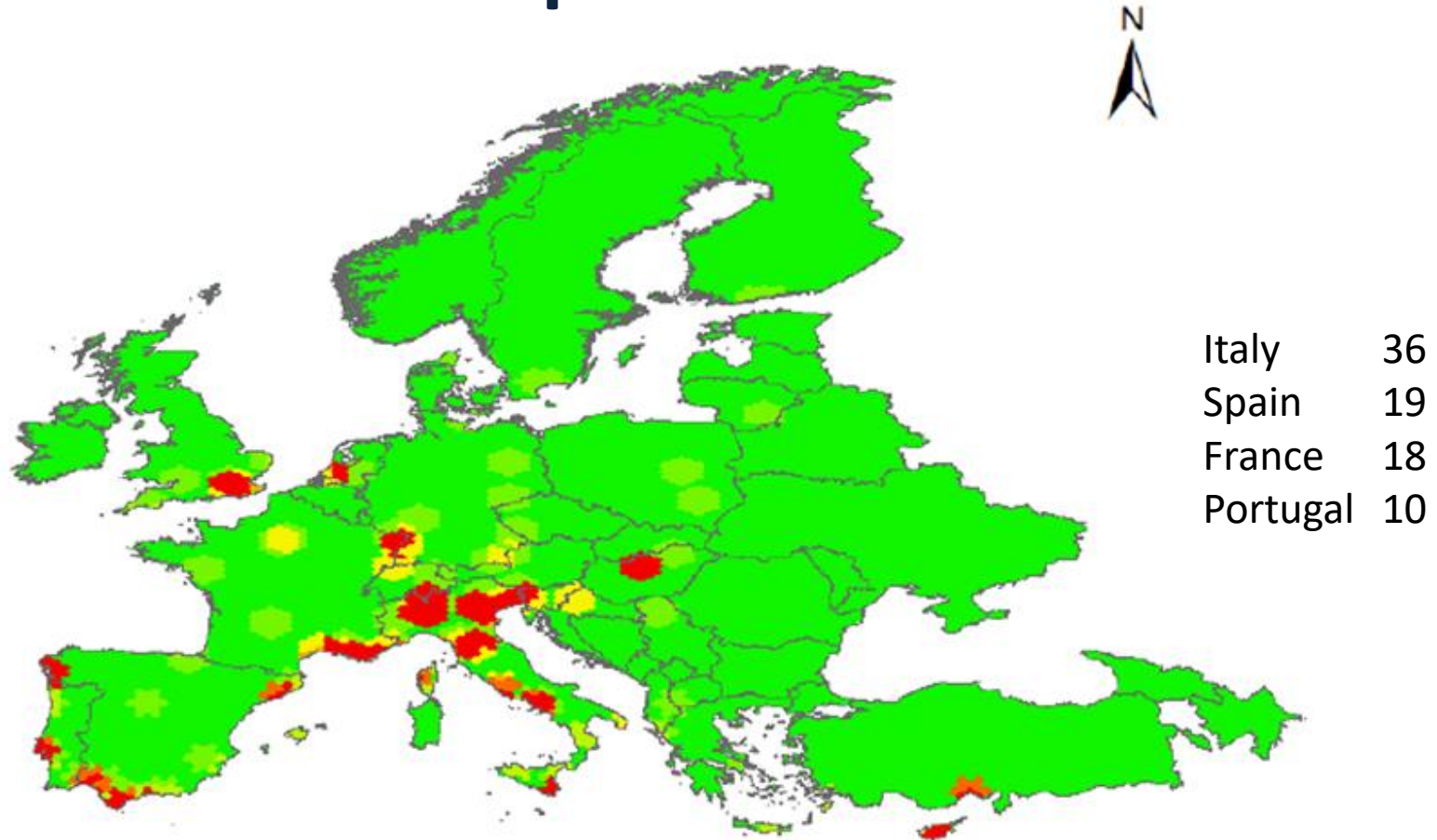
# Rationale of the review study

**If the probability of exotic forest pest establishment is higher in urban areas, then it is worth concentrating detection efforts in urban forests**



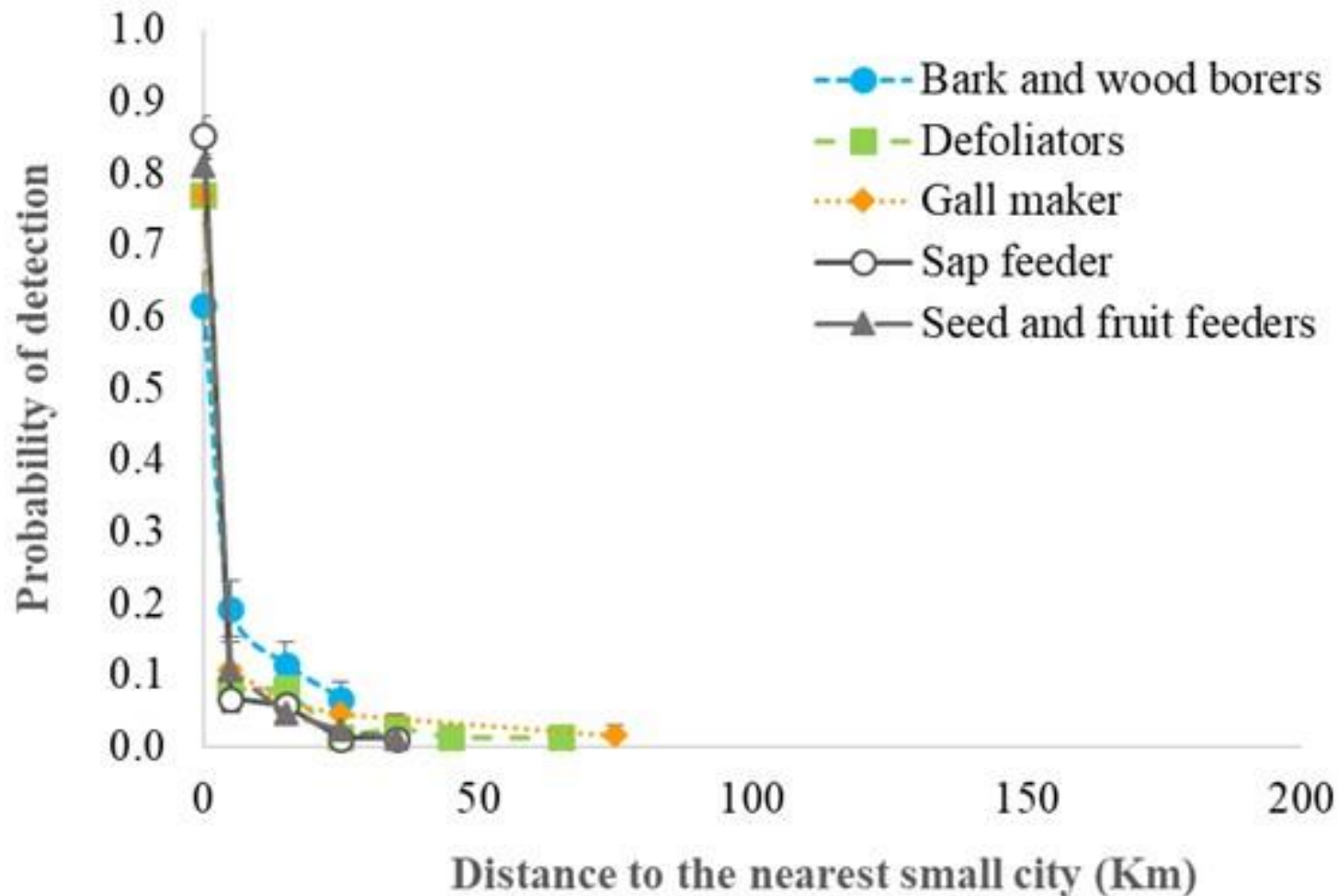


# Since 1950: 133 non-native forest species established in Europe



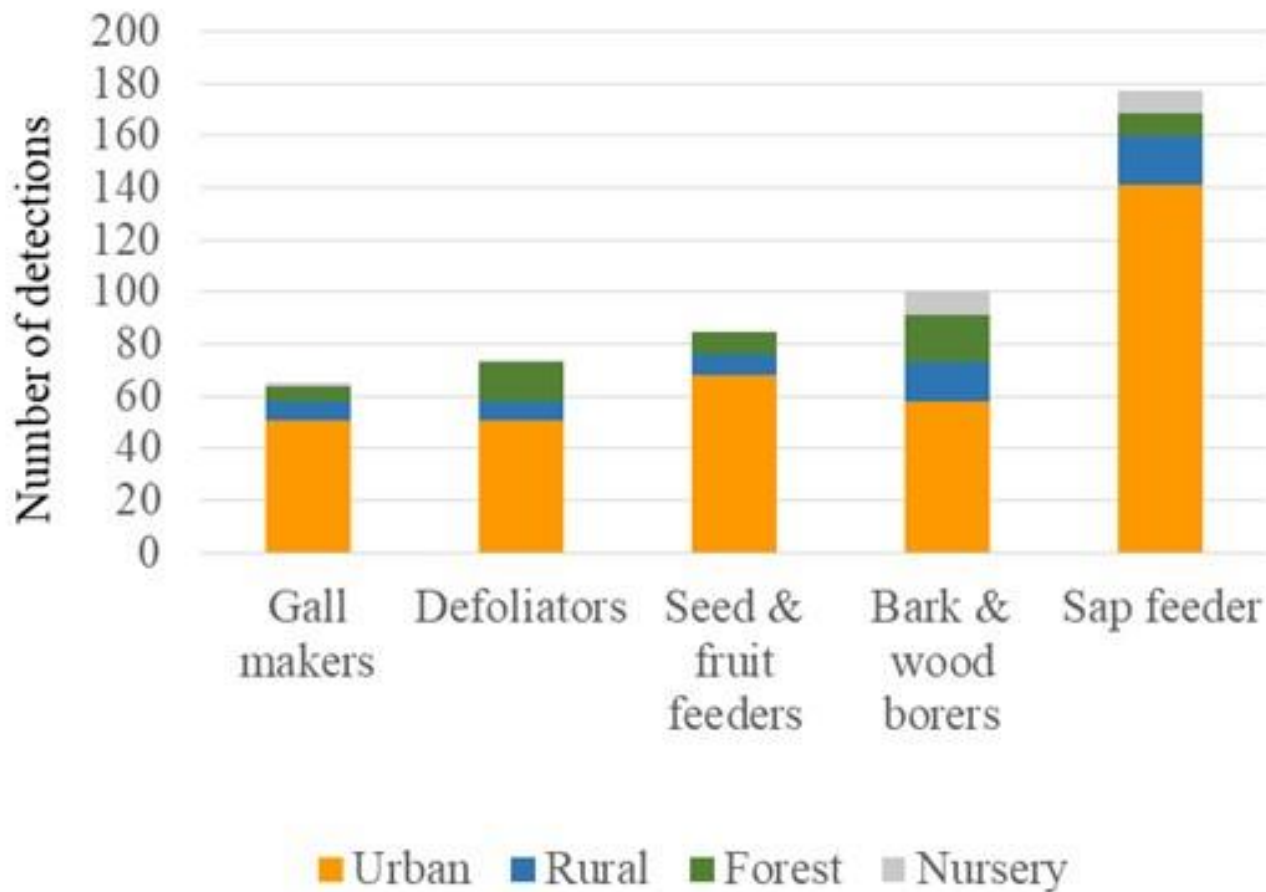
**Main hotspots of introduction in European coastal areas (near large ports) and industrial areas of Central Europe**

# Among the 508 first country-specific records **88% in urban – suburban areas**

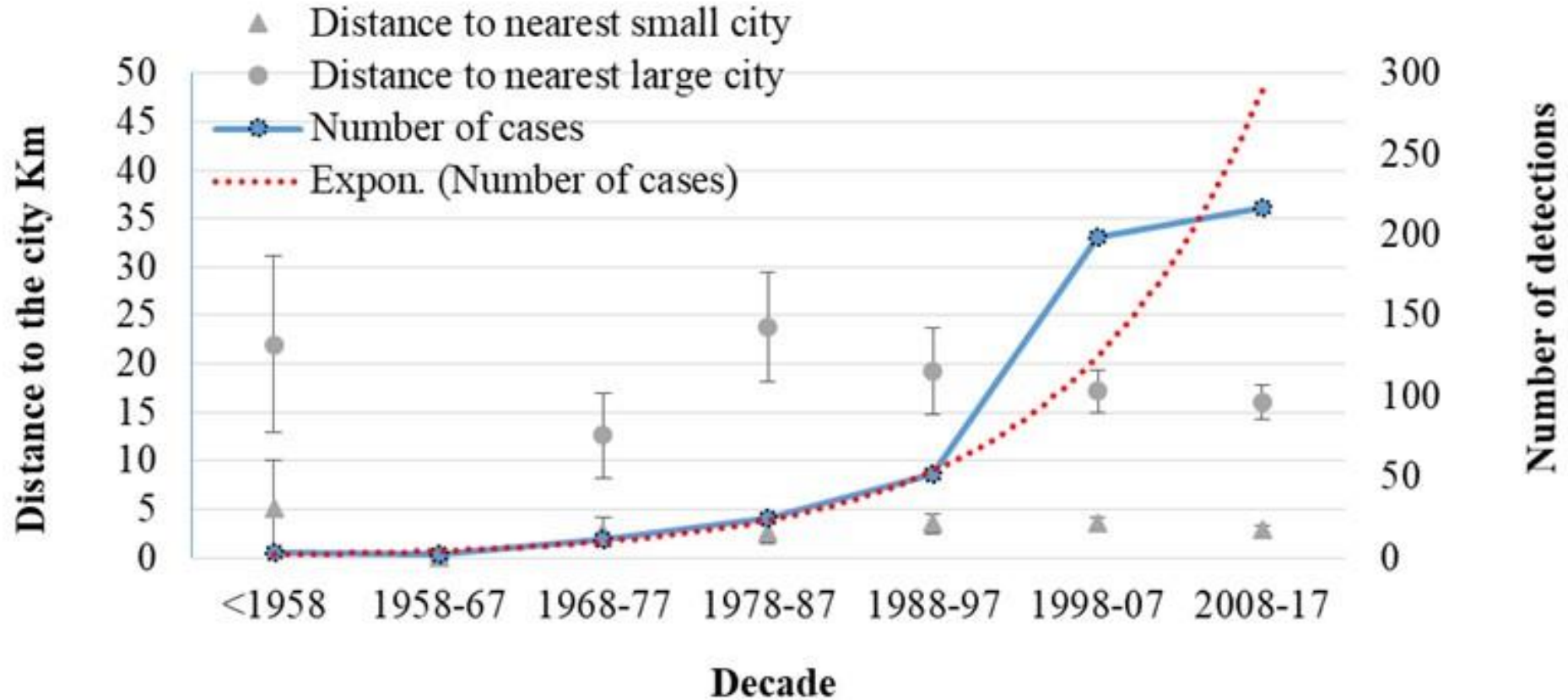


# Similar findings for all types of forest pests

74% of the cases in urban habitats: gardens, schoolyards, street trees, arboreta, urban parks, zoos

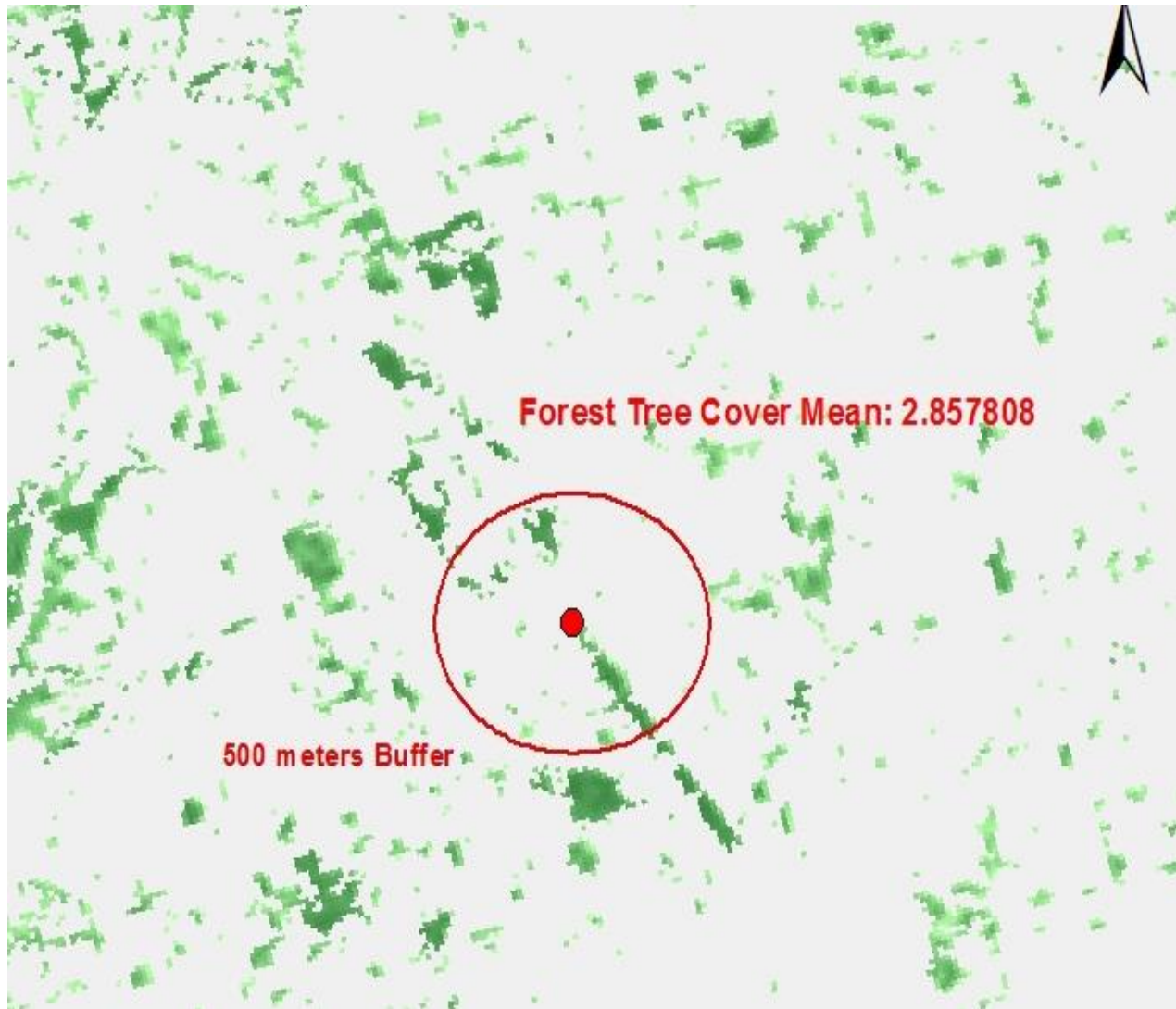


# A worrying increase





**Low tree cover density** around detection points mean 17% - less than 10% in half of the cases!



Tree Cover Density of the Copernicus Land Monitoring Service

# Conclusions

**Let's focus our detection efforts in urban areas !**



# Conclusions

**Let's call on the help of the citizens of the cities**





***Euwallacea fornicatus***

Tiny (2mm long) but big damage on  
tea, cocoa, avocado, citrus and ... oaks !