Targeting and Prioritisation

This presentation features the top 12 ALERT Species from the RINSE Report 'Targeting and Prioritisation for INS in the RINSE Project Area' by B. Gallardo, A. Zieritz and D. C. Aldridge, Cambridge Environmental Consulting Ltd.

For more information on this study and to read the report visit the RINSE website here:

http://www.rinse-europe.eu/resources

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Crossborder cooperation programme 2007-2013 Part-financed by the European Union (European Regional Development Fund)

HORIZON SCANNING

Several national and international institutions have produced lists of invasive non-native species (INS) that are perceived to be having, or have the potential to have, the most negative impacts on biodiversity. Using 16 of such ‘worst invader’ lists, a metalist of 340 INS was created and divided into two main groups:

ALERT LIST

A total of 79 species which are not yet present in any of the four RINSE countries (Great Britain, France, Belgium and the Netherlands)

BLACK LIST

A total of 261 species which are present in at least one of the four RINSE countries (Great Britain, France, Belgium and the Netherlands)

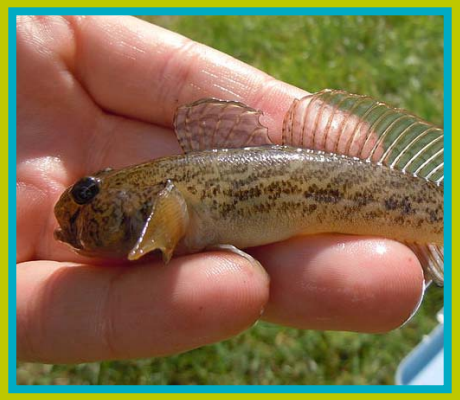
HORIZON SCANNING

Prioritisation of the ALERT List

The 79 Alert Species were ranked using a risk score system modified from Molnar et al (2008) which considers four risk categories: ecological impact, invasive potential, management difficulty and economic impact.

These 79 species were then ranked by their overall average score with the top 3 plants, terrestrial animals, aquatic inland animals and marine organisms extracted to generate a top 12 of Alert INS.

This presentation will introduce the top 12 Alert species



Racer Goby

Amur Sleeper

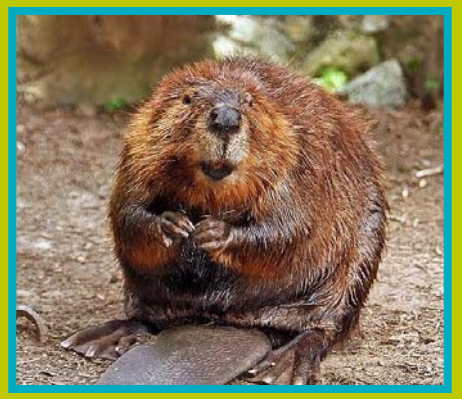
Apple Snail

Japanese Sea Star

Asian Clam

Nomad Jellyfish

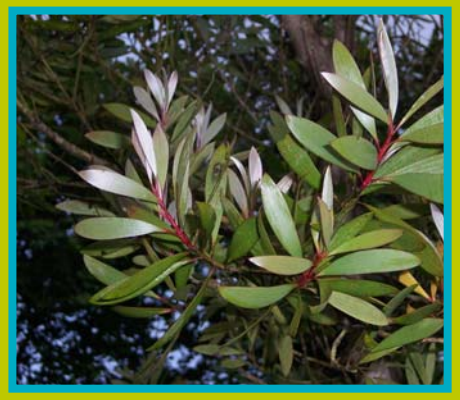
Emerald Ash Borer



Canadian Beaver

Red Fire Ant

Blady Grass

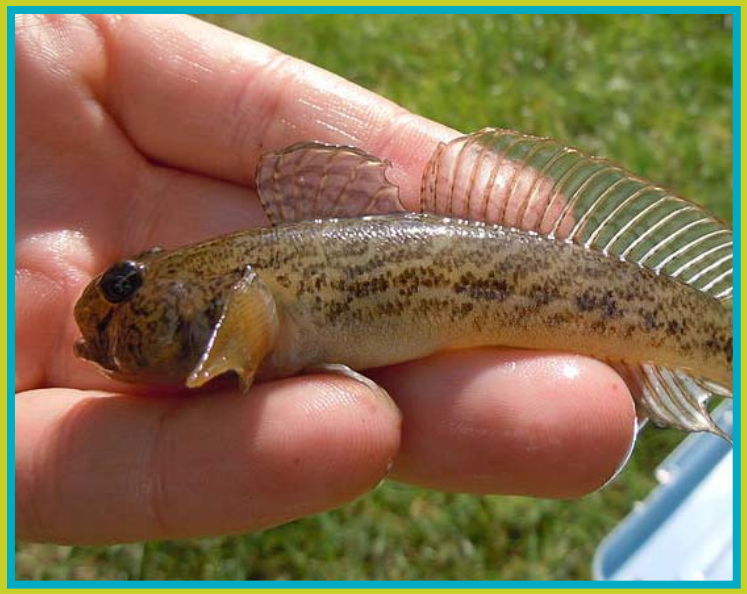


Melaleuca

Kudzu

ALERT LIST TOP 12

Neogobius gymnotrachelus



SPECIES:

Neogobius gymnotrachelus

COMMON NAME(S):

Racer Goby

ORIGIN:

Eurasia (Ponto-Capsian)

HABITAT:

Freshwater/brackish

PRESENCE IN EUROPE:

Germany, Poland and Hungary

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Ballast water	Food web changes	Reduces commercial fishing stocks
Fish stocking	Displaces native species	
Natural spread	Biodiversity loss	

ALERT LIST TOP 12

Percottus glenii

SPECIES:

Percottus glenii

COMMON NAME(S):

Amur Sleeper

ORIGIN:

Asia

HABITAT:

Estuaries and shallow waters

PRESENCE IN EUROPE:

Poland, Finland and Eastern Europe (Estonia, Ukraine, Hungary and Romania)

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Aquaculture and aquarium trade	Predates on crustaceans, molluscs, insects, amphibians and fish	Reduces commercial fishing stocks
Accidental with fish stocks	Biodiversity loss	
Natural spread	Competes with native species (EG *Carassius carassius, Rhodeus sericeus)*	

ALERT LIST TOP 12

Pomacea canaliculata

SPECIES:

Pomacea canaliculata

COMMON NAME(S):

Apple Snail

ORIGIN:

South America

HABITAT:

Lakes, ponds, swamps, agricultural areas

PRESENCE IN EUROPE:

Not yet in Europe

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Aquarium trade	Voracious predator of freshwater plants	Major crop pest
Food source	Habitat loss/modification	Notable reduction in rice crop
Natural spread with water currents	Competes with native species	

ALERT LIST TOP 12

Asterias amurensi

SPECIES:

Asterias amurensi

COMMON NAME(S):

Japanese Sea Star

ORIGIN:

North Pacific Ocean

HABITAT:

Estuarine and marine habitats

PRESENCE IN EUROPE:

Not yet in Europe

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Fish trade	Predates voraciously on benthic organisms	Marilculture losses
Ship ballast water and/or hull fouling	Decline of threatened species (EG *Brachionichthys hirsutus*)	Diminishes oyster production
Contaminant of other materials		
Natural spread with water currents		

ALERT LIST TOP 12

Potamocorbula amurensis

SPECIES:

Potamocorbula amurensis

COMMON NAME(S):

Asian Clam

ORIGIN:

SE Asia

HABITAT:

Tropical to cold estuarine and marine waters

PRESENCE IN EUROPE:

Not yet in Europe

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Ship ballast water	Bottom up changes due to filter-feeding of large quantities of phyto and zooplankton Reduces abundance and diversity of benthic species Changes in habitat structure Bio-accumulation of metals and other pollutants	Reduces commercial fishing

ALERT LIST TOP 12

Rhopilema nomadica

SPECIES:

Rhopilema nomadica

COMMON NAME(S):

Nomad Jellyfish

ORIGIN:

Red Sea

HABITAT:

Water column of marine habitats

PRESENCE IN EUROPE:

Mediterranean Sea

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Natural spread with currents	Voracious planktivorous predation	Affects tourism due to pain stings with erythematous eruptions, itching and burning sensations Reduces fisheries Clogs fishing nets, pipes and other coastal infrastructure

ALERT LIST TOP 12

Agrilus planipennis

SPECIES:

Agrilus planipennis

COMMON NAME(S):

Emerald Ash Borer

ORIGIN:

SE Asia

HABITAT:

Ash trees in urban or forest habitats

PRESENCE IN EUROPE:

Not yet in Europe

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Accidental transport as contaminant	Alters species composition	Forestry losses
Forestry imports	Biodiversity loss	
Natural spread	Death of infested tree	

ALERT LIST TOP 12

Castor canadensis

SPECIES:

Castor canadensis

COMMON NAME(S):

Canadian Beaver

ORIGIN:

North America

HABITAT:

Riparian zones, forested rivers and lakes

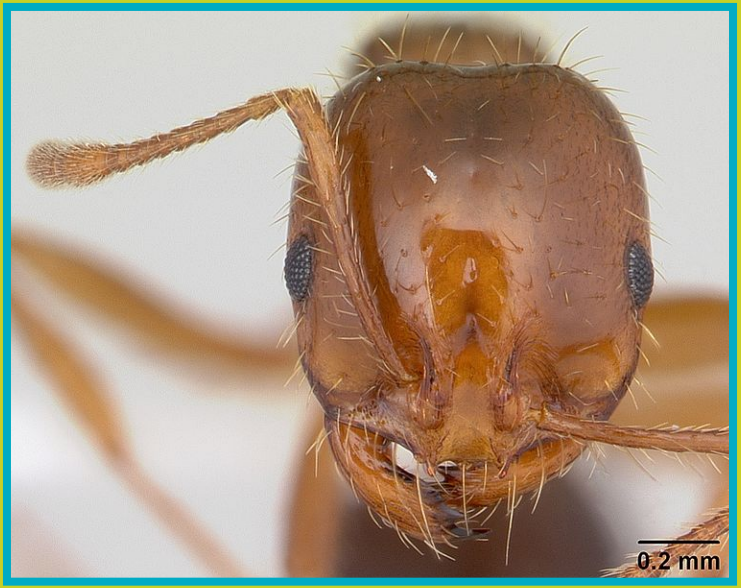
PRESENCE IN EUROPE:

Finland, Germany, Poland and Austria

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Intentional introduction	Outcompetes native species and hybridisation	Reduces forestry
Natural spread	Geomorphological changes	Increases flood risk
	Reduces macroinvertebrate community	
	Changes water chemistry	
	Barrier to fish migration	

ALERT LIST TOP 12

Solenopsis invicta



SPECIES:

Solenopsis invicta

COMMON NAME(S):

Red Fire Ant

ORIGIN:

South America

HABITAT:

Hot arid regions, disturbed areas

PRESENCE IN EUROPE:

Not yet in Europe

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Movement of agricultural equipment, soil and plant material	Affects ant-dispersing plant species	Crop damage
Natural spread	Predates on other insects	Painful allergic stinging
Passive spread during flooding	Reduces diversity of invertebrates, reptiles, fish and small mammals through predation, competition and stinging	Infests electrical equipment

ALERT LIST TOP 12

Imperata cylindrica

SPECIES:

Imperata cylindrica

COMMON NAME(S):

Blady Grass

ORIGIN:

SE Asia, Australia and E Africa

HABITAT:

Dry sand dunes, deserts, swamps and river margins

PRESENCE IN EUROPE:

Bulgaria, Germany, Italy, Portugal and Spain

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Ornamental trade	Displaces endangered species	Loss of soil fertility
Erosion control	Reduces soil moisture and fertility	Increase fire risk
Natural spread (rhizomes sprout after fragmentation)	Produces inhibition substances	Crop yield losses
	Pyrogenic	Reduces reforestation efficiency
		Host of pest insects
		Sharpe leaves damage feet

ALERT LIST TOP 12

Melaleuca quinquenervia

SPECIES:

Melaleuca quinquenervia

COMMON NAME(S):

Melaleuca

ORIGIN:

Australia

HABITAT:

Inundated wetlands, riparian and coastal zones, damp habitats

PRESENCE IN EUROPE:

Italy

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Ornamental trade	Displaces endangered species	Loss of soil fertility
Erosion control	Reduces soil moisture and fertility	Increase fire risk
Natural spread (rhizomes sprout after fragmentation)	Produces inhibition substances	Crop yield losses
		Reduces reforestation efficiency

ALERT LIST TOP 12

Pueraria lobata montana

SPECIES:

Pueraria lobata montana

COMMON NAME(S):

Kudzu

ORIGIN:

Asia

HABITAT:

Open lands, disturbed areas, river banks

PRESENCE IN EUROPE:

Italy and Switzerland

Pathway(s):	Environmental Impact(s):	Economic Impact(s):
Accidental or intentional through agriculture and horticulture	Biodiversity loss	Affects forestry productivity
Natural vegetative spread	Smother, displaces or kills native plants	Affects tourism closing paths
Road vehicles	Changes soil properties by increasing N fixation	Increases fire risk
With mammals and birds		Constrains development
With garden waste		Host of pest species

Targeting and Prioritisation

These top 12 Alert Species were identified by the ‘Targeting and Prioritisation for Invasive Non-native Species in the RINSE Project Area’ by B. Gallardo, A. Zieritz and D. C. Aldridge, Cambridge Environmental Consulting Ltd.

The RINSE Partnership is happy to share the data associated with these species. If you should require this data please contact the RINSE Lead Partner, Norfolk County Council on + 44(0)1603 228977 or email nnnsi@norfolk.gov.uk

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