

G. Brundu & D.M. Richardson



COUNCIL OF EUROPE



CONSEIL DE L'EUROPE

Meeting of the Group of Experts on Invasive Alien Species

11th meeting - Triglav National Park (Slovenia)

4-5 June 2015







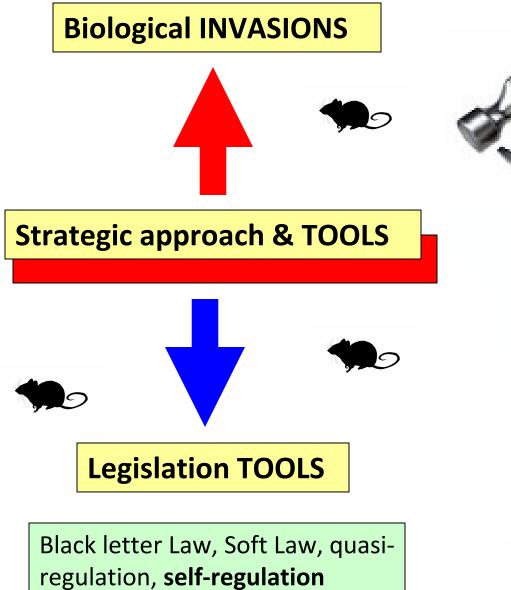
1. Codes of Conduct for plant pathways: general info and rationale;

2. Code of Conduct on Plantation Forestry;

3. Inputs expected from the Experts on the 1st draft.



1. Codes of Conduct for plant pathways: general info and rationale









4.11.2014	EN	Official Journal of the European Union	L 317/35
	REGULATION (I	EU) No 1143/2014 OF THE EUROPEAN PARLIAMENT AND OF THE CO	OUNCIL
		of 22 October 2014	
	on the preven	ntion and management of the introduction and spread of invasive alien sp	pecies

Article 13

Action plans on the pathways of invasive alien species

1. Member States shall, within 18 months of the adoption of the Union list carry out a comprehensive analysis of the pathways of unintentional introduction and spread of invasive alien species of Union concern at least in their territory, as well as in their marine waters as defined in point (1) of Article 3 of Directive 2008/56/EC, and identify the pathways which require priority action ('priority pathways') because of the volume of species or of the potential damage caused by the species entering the Union through those pathways.

2. Within three years of the adoption of the Union list, each Member State shall establish and implement one single action plan or a set of action plans to address the priority pathways it has identified pursuant to paragraph 1. Action plans shall include timetables for action and shall describe the measures to be adopted and, as appropriate, voluntary actions and codes of good practice, to address the priority pathways and to prevent the unintentional introduction and spread of invasive alien species into or within the Union.

3. Member States shall ensure coordination with the aim of establishing one single action plan or a set of action plans coordinated at the appropriate regional level in accordance with Article 22(1). Where such regional action plans are not established, Member States shall establish and implement action plans for their territory and as far as possible coordinated at the appropriate regional level. Codes of good practice for unintentional pathways



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		Tab	le 1: Categorizatio	on of pathways for the introduction of alien species	
			Category	Subcategory	COP decision
UNEP CON			RELEASE IN NATURE (1)	Biological control Erosion control/ dans stabilization (windbreaks, hedges,) Fishery in the wild (including game fishing) Hunting Landscape/flora/fauna "improvement" in the wild	VIII/27 VIII/27; X/38 X/38
	Distr. GENERAL		ESCAPE	Introduction for conservation purposes or wildlife management Release in nature for use (other than above, e.g., fur, transport, medical use) Other intentional release Agriculture (including Biofuel feedstocks)	X/38
Convention on Biological Diversity	UNEP/CBD/SE 26 June 2014**	COMMODITY	FROM CONFINEMENT (2)	Aquaculture / mariculture Botanical garden/zoo/aquaria (excluding domentic aquaria) Pet/aquarium/ternerium species (including live food for such species) Farmed animals (including animals left under limited control)	VIII/27; IX/4 XI/28 VIII/27; X/38; XI/ VIII/27
SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE	ORIGINAL: E	Movement of COMN		Forestry (including afforestation or reforestation) Fur farms Horticulture Omamental purpose other than horticulture Research and ex-situ breeding (in facilities) Live food and live bait	VII1/27
Eighteenth meeting Montreal, 23-28 June 2014 Item 5.2 of the provisional agenda* PATHWAYS OF INTRODUCTION OF INVASIVE SP AND MANAGEMEN			TRANSPORT- CONTAMINANT (3)	Other escape from confinement Contaminant nursery material Contaminant (including of live food) Contaminant (including of live food) Contaminant on animals (eccept parasites, species transported by host/vector) Parasites on animals (including species transported by host and vector) Contaminant on plants (escept parasites, species transported by host/vector) Parasites on plants (including species transported by host and vector) Sould contaminant Timber trade Transportation of habitat material (soil, vegetation,)	VIII/27; XI/28 XI/28 XI/28 XI/28 XI/28 XI/28 VIII/27
		VECTOR	TRANSPORT - STOWAWAY (4)	Angling/fishing equipment Container/bulk Hitchhikers in or on airplane Hitchhikers on ship/boat (excluding ballast water and hull fouling) Machinery/equipment Paople and their luggage/equipment (in particular tourism) Organic packing material, in particular wood packaging Ship/boat ballast water Ship/boat hull fouling	VIII/27 VIII/27 VIII/27, IX/4 VIII/27 VIII/27 VIII/27 VIII/27, IX/4
		SPREAD	CORRIDOR (5) UNAIDED	Vehicles (car, train,) Other means of transport Interconnected waterways/basina/seas Turnels and land bridges Natural dispersal across borders of invasive alien species that have been introduced through pathways 1 to 5	VIII/27

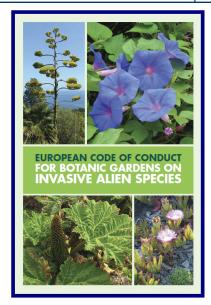


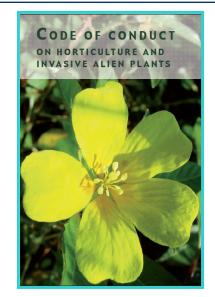
Category	Subcategory	COP decision
RELEASE	Biological control	VIII/27
IN NATURE	IN NATURE Erosion control/ dune stabilization (windbreaks, hedges,)	
(1)	(1) Fishery in the wild (including game fishing)	
	Hunting	X/38
	Landscape/flora/fauna "improvement" in the wild	
	Introduction for conservation purposes or wildlife management	
	Release in nature for use (other than above, e.g., fur, transport, medical use)	
	Other intentional release	
ESCAPE	Agriculture (including Biofuel feedstocks)	X/38
FROM	Aquaculture / mariculture	VIII/27; IX/4
CONFINEMENT	Rotanical garden/zoo/aguaria (excluding domestic aguaria)	

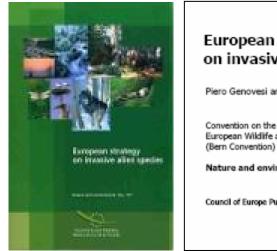
CONFINEMENT	1	, ,
(2)	Botanical garden/zoo/aquaria (excluding domestic aquaria)	XI/28
(-/	Pet/aquarium/terrarium species (including live food for such species)	VIII/27, X/38, XI/28
	Farmed animals (including animals left under limited control)	VIII/27
	Forestry (including afforestation or reforestation)	
	Fur farms	
	Horticulture	
	Ornamental purpose other than horticulture	
	Research and ex-situ breeding (in facilities)	VIII/27
	Live food and live bait	
	Other escape from confinement	



ESCAPE	No.7, 10, 11	No. 25	
Agriculture, Horticulture		No. 21	Code of conduct on horticulture and invasive alien plants
Aquaculture and mariculture			FAO Fisheries and Aquaculture TP No. 519; Technical Guidelines for Responsible Fisheries No. 2; No. 5, suppl. 4; No. 5, suppl. 5; No. 5, suppl. 6;
			ICES Code of Practice on the Introduction and Transfer of Marine Organisms.
Botanical gardens, zoos and aquaria			European code of conduct on zoological gardens and aquaria and invasive alien species







European strategy on invasive alien species

Piero Genovesi and Clare Shine

Convention on the Conservation of European Wildlife and Habitats (Bern Convention)

Nature and environment, No. 137

Council of Europe Publishing

Council of Europe Publishing - F-67075 Strasbourg Cedex - ISBN 92-871-5488-0 © Council of Europe, June 2004

Eight strategic principles to address the problem of invasive alien species

- 1. Building awareness and support
- 2. Collecting, managing and sharing information
- 3. Strengthening national policy, legal and institutional frameworks
- 4. Regional co-operation and responsibility
- 5. Prevention
- 6. Early detection and rapid response
- 7. Mitigation of impacts
- 8. Restoration of native biodiversity



Promote the implementation and further development of standards, codes of 5.3.3 conduct and best practices to minimise identified risks, in co-operation with international standard-setting organisations and relevant sectoral organisations as appropriate (see Boxes 16 and 17).

APPROPRIATE AC	IVITIES AND PARTNERS FOR PREVENTING UNINTENTIONAL INTRODUCTIONS		
SECTOR	EXAMPLES OF BEST PRACTICES		introduction of species not present in the river basin or lake concerned.
Agriculture, fore and horticulture	stry Assist National Plant Protection Organisations to strengthen control and monitoring of the import, trade and movement of plants and plant products to minimise the risk of unintentional introduction of alien organisms (e.g. invertebrates and fungi in the soil of imported pot-plants).	Ornamental fish and aquaria	Apply standards and procedures to public aquaria to reduce risks of escape when tanks are emptied. Work with relevant stakeholders (Ornamental Fish International, Ornamental Aquatic Trade Association) to promote awareness-building and best practice amongst dealers, retailers and the public. Where
Forestry	With forestry stakeholders, promote implementation of relevant principles of third party independent certification systems and support the development of European forest stewardship standards on selection of species for planting and reduction of threats from alien tree species (also see §8).	Pet and animal retail	appropriate, provide guidance for National Plant Protection Organisations which inspect aquarium plants on import. ers Encourage retail associations to develop appropriate information materials as well as a recovery system for animals their owners wish to get rid of. Consider the need to prohibit trade in and possession of alien species assessed to be capable of becoming invasive in the event of release or
Horticulture Aquaculture/	Co-operate with horticultural trade bodies, botanic gardens and other stakeholders to raise awareness of IAS amongst gardeners and to foster best practices to avoid unintentional introductions e.g. appropriate disposal of waste containing plants, not using aquatic plants near running watercourses where they can spread etc. Promote implementation of the International Council for the	Hunting	escape into the wild. Work with the Fédération des associations de chasseurs de l'UE (FACE) and national hunting and shooting organisations to assess risks associated with introduction of alien game species for restocking. As appropriate, co- operate in the elaboration, adoption and implementation of a European Code of Conduct on Hunting to regulate and manage such introductions.
mariculture	Exploration of the Sea (ICES) Code of Practice on the Introductions and Transfers of Marine Organisms (1994) and the FAO Code of Conduct for Responsible Fisheries (1995). Work with key stakeholders (e.g. Federation of European Aquaculture Producers) to address risks to native	Aviculture	Work with bird breeders organisations to minimise risks associated with escapes of alien bird species from captivity. As appropriate, co-operate in the elaboration, adoption and implementation of a code of conduct on aviculture to prevent escapes from captivity, establishment into the wild and hybridisation with native species.
	biodiversity associated with escapes from fish farms and introduction of alien parasites in fish stock. Consider the need for stricter controls on use of highly invasive alien fish species and stronger animal health measures.	Falconry	Work with the International Association for Falconry and Conservation of Birds of Prey to prevent escapes into the wild of alien birds of prey used for falconry, which could lead to hybridisation with native species. As appropriate, co-operate in the elaboration, adoption and implementation of a European Code of Conduct on Falconry.
Sport fishing	Work with angling associations to minimise risks associated with introduction of alien fish as game. Strictly regulate trade in, transport and use of live bait for fishing, to prevent		

🕨 🚾 One-Minute World News



News Front Page

Americas

Last Updated: Monday, 7 August 2006, 10:45 GMT 11:45 UK

Killer weed hits Kenyan herders

By Anne Mawathe BBC News, Kenya

A toothless goat is not a common sight in Kenyan courtrooms.

But the appearance of the animal before Nairobi judges in July was a sign of how desperate some Kenyans have become in their battle against the invasive "mathenge" plant, known by its scientific name of prosopis juliflora.



ALGERIA LIBYA EGYPT WESTERN SAHARA MAURITANIA MALI NIGER SUDAN ERITREA CHAD SENEGAL BURK. FASO 15 km-wide GUINE NIGERIA green belt (or average) **ETHIOPIA** SIERRA **CENTRAFRICAN** REP. CAMEROON LIBERIA BENIN GHANA UGANDA KENYA CONGO AFP TOGO

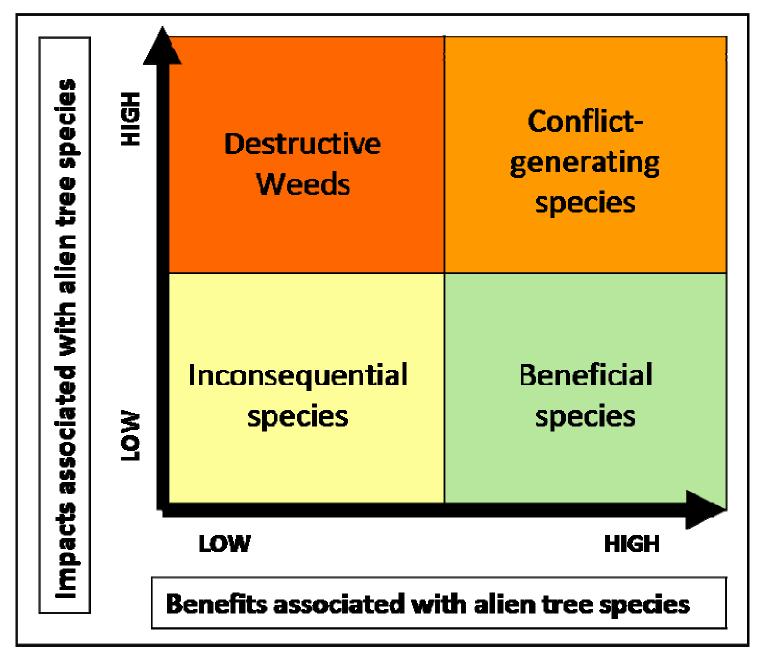
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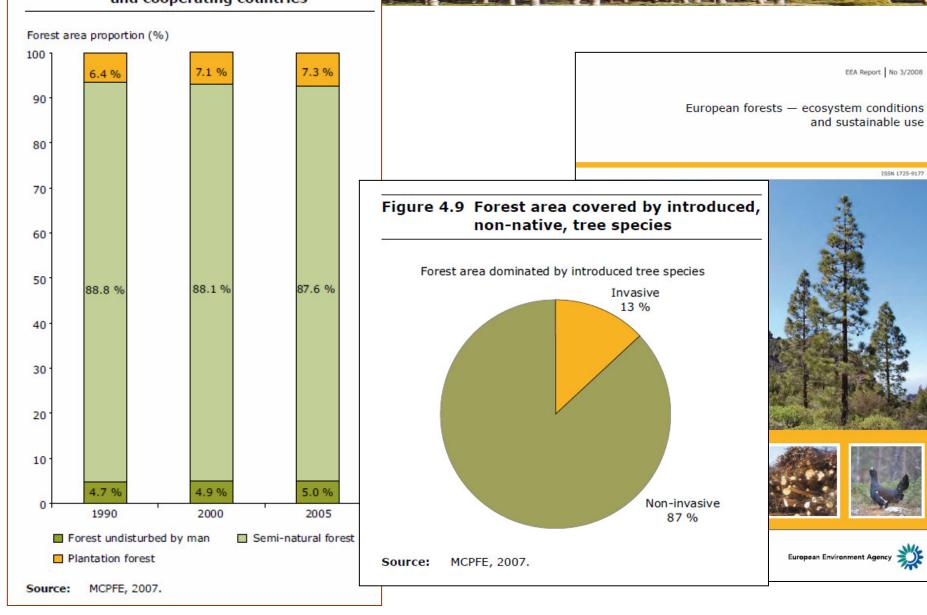
G. Brundu & D.M. Richardson – Code of Conduct on Plantation Forestry and Invasive Alien Trees. Meeting of the Group of Experts on Invasive Alien Species, 11th meeting - Triglav National Park (Slovenia), 4-5 June 2015.

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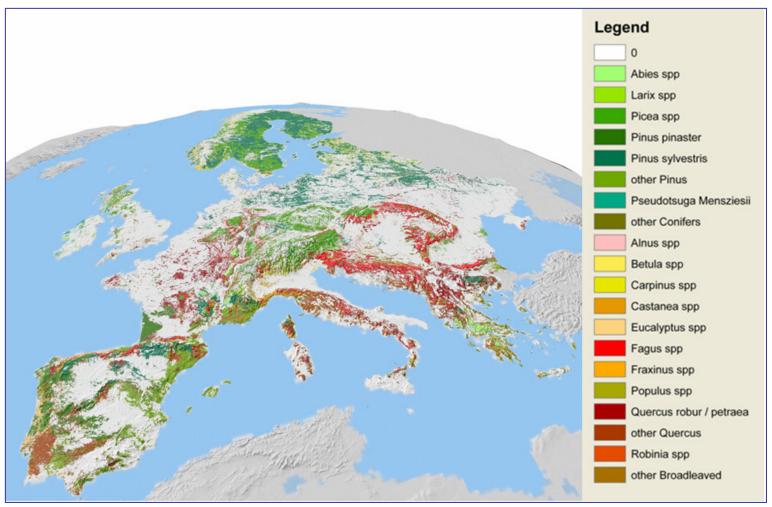
Prosopis sp.











Tree species maps for European forests

G. J. Nabuurs, D. J. Brus, G. M. Hengeveld, D. J. J. Walvoort, P. W. Goedhart, A. H. Heidema, K. Gunia - http://www.efi.int/portal/virtual_library/information_services/mapping_services/tree_species_maps_for_european_forests



2. Code of Conduct on Plantation Forestry



1. INTRODUCTION

Planted forests comprise trees established through planting and/or through deliberate seeding of native or alien species. Establishment is either through afforestation on land previously not classified as forest, or by reforestation of land classified as forest, for instance after a fire or a storm or following clearfelling. The total area of planted forest as of 2010 was estimated to be 264 million hectares - an estimated 7 percent of the total global forest area (FAO 2010a).

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Global Forest Resources Assessment 2000

Main report



Global Forest Resources Assessment 2005 Progress towards sustainable forest management

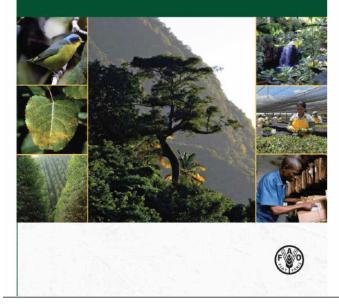
ISSN 0258-615

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Global Forest Resources Assessment 2010

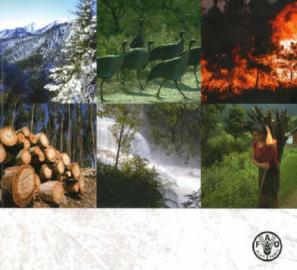
FORESTRY PAPER

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In **FRA 2000** (FAO Global Forest Resources Assessment), "**Forest plantations**" are defined as those forest stands established by planting and/or seeding in the process of afforestation or reforestation. They are either of introduced or indigenous species that meet a minimum area requirement of 0.5 ha, tree crown cover of at least 10 percent of the land cover, and total height of adult trees above 5 m (Chapter 3, pages 23-24).

In **FRA 2005** "Forest plantations" are defined as a subset of planted forests consisting primarily of introduced species (Chapter 2, pag. 13), but, and in some cases also of native specie (Chapter 5, pag. 80).

In **FRA 2010**: **Planted forests** are composed of trees established through planting and/or through deliberate seeding of native or introduced species. Establishment is either through afforestation on land that until then was not classified as forest, or by reforestation of land classified as forest, for instance after a fire or a storm or following clearfelling.

The concept of planted forests is broader than the concept of forest plantations used in previous global assessments. This change was made to capture all planted forests and is in line with the recommendations of the Global Planted Forests Thematic Study 2005 and recent efforts to develop guidelines and best practices for the establishment and management of planted forests.

For this Code we propose the use of **Plantation Forestry** and we focus only on non-native tree plantations (e,g., Evans, J. 1992. *Plantation forestry in the tropics*). The term P.F. is used by FAO as well.



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2.6.4 The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
2.6.5 Sustainable forest management and forest certification
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2.7.1 Habitat Directive – Natura 2000
2.7.2 The Plant Health Regime in the European Union
2.7.3 The Biodiversity Strategy of the European Union
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Audience and Aims

This Code of Conduct is addressed **to all relevant stakeholders** and decision makers in the **47 Member States of the Council of Europe**. It aims to enlist the co-operation of the Forest sector (trade and industry, national forest Authorities, certification bodies and environmental organizations) and associated professionals in preventing, reducing and controlling possible introductions of invasive alien tree species in Plantation Forestry.

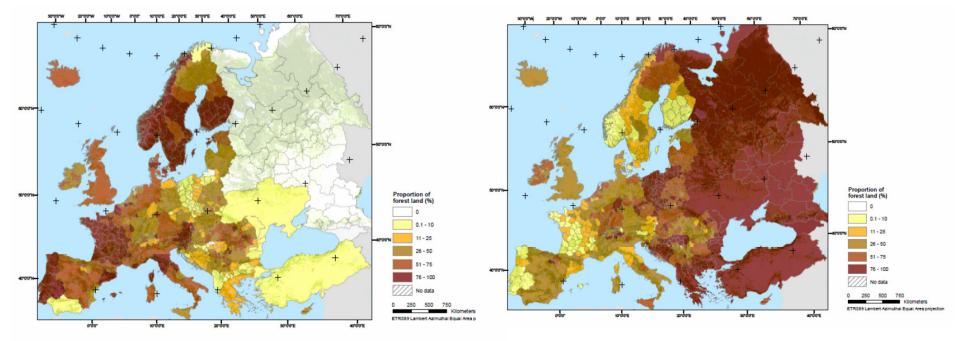
It complements the Code of Conduct on Horticulture and Invasive Alien Plants published by the Council of Europe (Heywood & Brunel 2009, 2011) aimed at the horticultural industry and trade and the European Code of Conduct for Botanic Gardens on Invasive Alien Species (Heywood & Sharrock 2013).

These three Codes should also be taken into consideration by private or public gardens or arboreta in Europe with major collections of trees that are not considered forest plantations of exotic trees in the narrow sense. Although most of these gardens do not belong to any association or consortium they are important in terms of the plant collections they house and therefore can pose the same risks as botanic gardens or commercial nurseries in terms of invasive alien tree species.



Private ownership

Public ownership



Mapping the Distribution of Forest Ownership in Europe Pamela Pulla, Andreas Schuck, Pieter Johannes Verkerk, Bruno Lasserre, Marco Marchetti and Tim Green

Publisher: European Forest Institute Torikatu 34, FI-80100 Joensuu Finland Email: publications@efi.int http://www.efi.int



AWARENESS

Be aware of regulations concerning invasive alien species

Be aware of which tree species are known to be invasive or that have a high risk of becoming invasive

Information sharing and training

PREVENTION & CONTAINMENT

Promote – whenever possible – the use of native trees Adopt good nursery practices Adopt good plantation practices Adopt good management practices Adopt good practices for harvesting and transport of timber Adopt good practices for habitat restoration

EARLY DETECTION & RAPID INTERVENTION

Promote and be involved in early detection & rapid intervention

Establish a network of sentinel sites

OUTREACH

Engage with the public on the risks posed by alien invasive trees and on their negative impacts

FORWARD PLANNING

Consider developing research activities on invasive tree species and becoming involved in collaborative research projects at national and regional levels Take global change trends into consideration



AWARENESS

Be aware of **regulations** concerning invasive alien species

Be aware of which tree species are **known to be invasive** or that have a high risk of becoming invasive

Information sharing and training

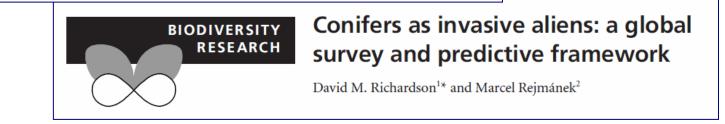
Diversity and Distributions, (Diversity Distrib.) (2011) 17, 788-809

BIODIVERSITY

REVIEW

Trees and shrubs as invasive alien species – a global review

David M. Richardson¹* and Marcel Rejmánek²





PREVENTION & CONTAINMENT

Promote – whenever possible – the use of native trees

Adopt good nursery practices

Adopt good plantation practices

Adopt good management practices

Adopt good practices for harvesting and transport of timber

Adopt good practices for habitat restoration



Adopt good plantation practices 1/2

•Use research findings to identify the **most appropriate sites** for cultivation within landscapes;

•pay more attention to biodiversity issues in plantation design (e.g., Carnus et al. 2006; COP 11 Decision XI/19 8 - 19 October 2012 - Hyderabad, India);-

•avoid converting natural habitats for cultivation ;

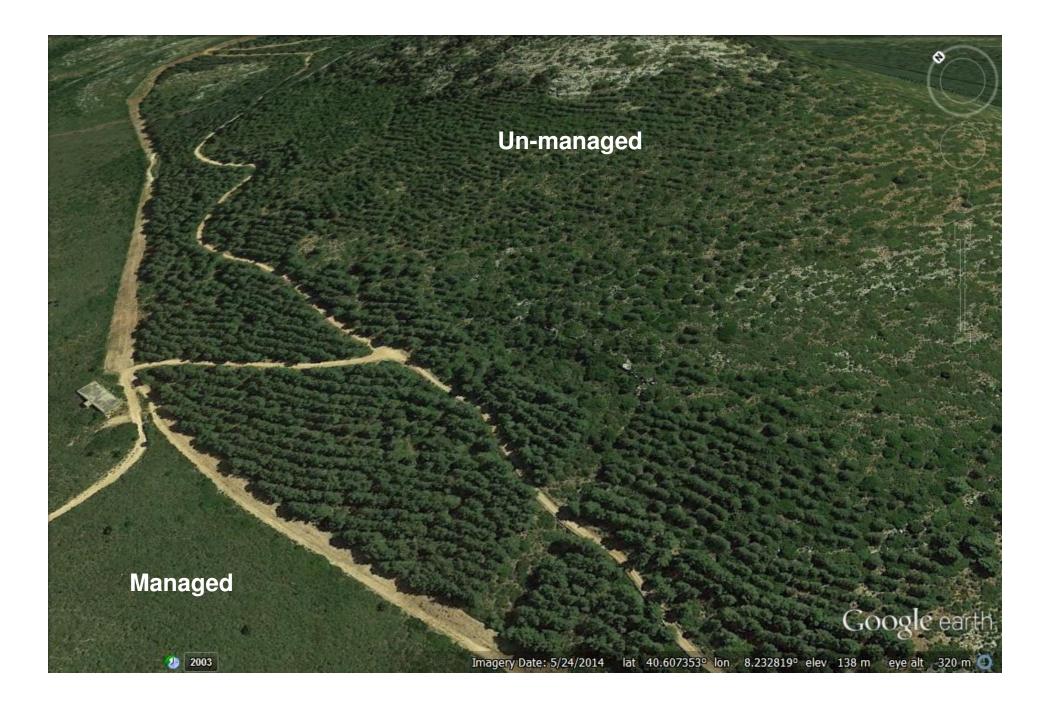
•restrict plantings to areas where the alien tree species is already present;

aggregate plantations in least sensitive areas;

•limit the total allowable area of planting, aggregate planting sites and reduce the total boundary length;

•prevent plantings where long distance dispersal of seed or pollen is favourable (hill tops, ridges);

•save or plant 2-3 rows of native and/or less spread prone species around external boundaries or along margins of unplanted reserve areas inside plantations ;





Adopt good plantation practices 2/2

•design plantation shape to minimise edges at right angles to prevailing wind during seed release season;

•whenever possible include sites with boundaries from where spread is almost impossible or acceptable (e.g., grazed areas, actively managed production forest, wide roads);

•whenever possible prefer mixed plantations (Brockerhoff et al. 2008) and encourage structural diversity through different age classes (Evans 2009b);

- •prevent plantings near rivers and streams and create buffer zones;
- protect water quality and avoid unnecessary disturbance to streamsides;
- prevent plantings near Natura 2000 sites, protected areas or endangered habitats;

•encourage the establishment of representative natural forest within the plantation estate and, where possible, the restoration of natural forests on appropriate sites (Secretariat of the Convention on Biological Diversity 2009);

- avoid unnecessary soil movement, transport and disturbance;
- stabilise disturbed soils as soon as possible.



EARLY DETECTION & RAPID INTERVENTION

Promote and be involved in early detection & rapid intervention

Establish a network of sentinel sites



International Plant Sentinel Network





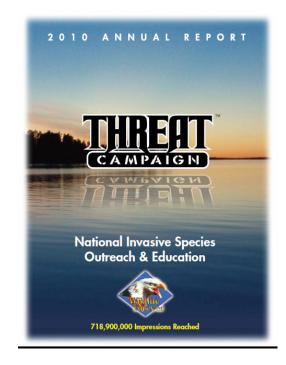
OUTREACH

Engage with the public on the risks posed by alien invasive trees and on their negative impacts

FORWARD PLANNING

Consider developing **research activities** on invasive tree species and becoming involved in collaborative research projects at national and regional levels

Take **global change trends** into consideration







Implementing, monitoring, evaluating ...

Bulletin OEPP/EPPO Bulletin (2014) 44 (2), 212-222

ISSN 0250-8052. DOI: 10.1111/epp.12111

The voluntary Code of conduct on invasive alien plants in Belgium: results and lessons learned from the AlterIAS LIFE+ project

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Bulletin OEPP/EPPO Bulletin (2014) 44 (2), 232-238

ISSN 0250-8052. DOI: 10.1111/epp.12113

Working with the horticultural industry to limit invasion risks: the Swiss experience

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3. Inputs expected from the Experts on the 1st draft



Contribution expected from the Experts:

- (1st Draft sent to: FAO, IUFRO, EFI, EPPO panel on IAS, EPPO Panel on Quarantine Pests for Forestry, COST Action TD1209 "Alien Challenge", COST Action FP1403 "Non-native tree species for European forests - experiences, risks and opportunities", project INVASIVE, Confederation of European Forest Owners (CEPF), European State Forest Association (EUSTAFOR), PEFC, and many other national experts).
- **1. Comments and revision of the text**
- 2. Examples of National Case Studies / Good Practices
- **3. Examples of Invasive Trees Black listed species**
- 4. Any other relevant information

